xREF: System x Reference

Covering IBM System x and BladeCenter servers and IBM Flex System compute nodes

One-page summaries of each server: models, specifications, key options

Latest updates as of 4 December 2014

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ibm.com/redbooks/x86

xREF: System x Reference

4 December 2014

> **Note:** Before using this information and the product it supports, read the information in "Notices" on page vii.

Last update on 4 December 2014

This edition applies IBM System x and BladeCenter servers and IBM Flex System compute nodes

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Preface

System x® and BladeCenter® servers and Flex System™ compute nodes help to deliver a dynamic infrastructure that provides leadership quality and service that you can trust.

These systems also help in the following ways:

► Reduce operating costs with higher performance, energy efficiency, simplified management, virtualization, and increased utilization

► Manage present and future risk in challenging economic conditions with superior reliability, availability, and serviceability (RAS) characteristics and future-proof IT

► Improve service with an end-to-end approach to systems management

The new generation of servers delivers business value and reduces costs for clients through industry-leading scalability, virtualization, and management capabilities.

This document (known simply as $xREF$) is a quick reference guide to the specifications of the currently available models. Each page can be used in a stand-alone format and provides a dense and comprehensive summary of the features of that particular server model.

The latest version of this document is available at:

http://www.redbooks.ibm.com/xref

The team who wrote this paper

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Special thanks to Kevin Carroll, the former author of the xREF guide.

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Summary of changes

This section describes the technical changes made in this edition of the paper and in previous editions. This edition might also include minor corrections and editorial changes that are not identified.

Summary of Changes for xREF: System x Reference
Last updated on 4 December 2014.

4 December 2014

► The x240 M5 currently does not support the Storage Expansion Node, page 88

2 December 2014

► New Flex System x440 Compute Node with Intel Xeon E5-4600 v2 processors, page 91

4 November 2014

► New models of the x240 M5 with the CN4052 2-port 10 GbE adapter standard, page 89
► The x240 M5 now supports 2.5-inch PCIe NVMe solid-state drives, page 88
► New x3500 M4 Express model for Europe, 7383-K8G, page 17

17 October 2014

► x3650 M5: Corrected the standard power supplies of models G2x and M2x
► Flex System x220: Server now supports only four 1.8-inch SSDs, installed internally
► NeXtScale nx360 M4: Corrected the internals diagram (shared port is Port 1)

7 October 2014

► New branding -- we're now Lenovo in the US and other countries!
► New Flex System x240 M5 Compute Node, page 88

25 September 2014

► All models of the x240 with E5-2600 v1 processors withdrawn except for model F2x

10 September 2014

- ► Certain Express models withdrawn January 2014, July 2014, and September 2014 (see the Withdrawn column in the model tables)

8 September 2014

Additions in this update

- ► New IBM System x3550 M5, page 27
- ► New IBM System x3650 M5, page 42
- ► New IBM NeXtScale™ nx360 M5, page 62

19 August 2014

Changes in this update:

- ► Updates to x3650 M4 BD: New drive support, operating system support including VMware vSphere and Microsoft Windows, page 38

11 August 2014

Additions in this update

- ► New models of the x3100 M5 for Europe, page 6

15 July 2014

Additions in this update

- ► New Flex System Enterprise Chassis model with -48V DC power supplies, page 80

9 July 2014

Additions in this update

- ► New page on the NeXtScale n1200 Enclosure, page 60
- ► New x3650 M4 BD Express Model for the U.S., page 39

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IBM System x

This section summarizes all the IBM System x servers that are currently available. One or more pages are devoted to each server, depending on the number and type of models that are available:

► Standard models
► Express models
► Workload optimized models

Express models are specially configured to make it easier for customers to order complete systems. Express models typically add memory, disk drives, RAID adapters, optical drives and other components over what the standard models normally include.

Workload optimized models are also carefully configured to meet the requirements of a particular workload such as database or virtualization. Similar to Express models, these workload optimized models contain additional components such as memory, RAID and network adapters, and storage.

IBM System x3100 M4

Model[1]	Intel Processor (one maximum)	Memory	RAID controller	Disk bays	Disks	Network	Optical	PCIe 3.0	Power supply	Announced
2582-A2x	1x Core i3-2120 3.3 GHz 2C 3 MB 1333 MHz 65W	1x 4 GB (1333 MHz)[a]	ServeRAID™ C100	4x 3.5" SS	Open	2x GbE	DVD	No	1x 350 W fixed	May 2012
2582-B2x	1x Xeon E3-1220v2 3.1 GHz 4C 8MB 1600 MHz 69W	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	Yes	1x 350 W fixed	May 2012
2582-C2x	1x Xeon E3-1230v2 3.3 GHz 4C 8MB 1600 MHz 69W	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	Yes	1x 350 W fixed	May 2012
2582-32x	1x Pentium G850 2.9 GHz 2C 3 MB 1333 MHz	1x 2 GB 1333 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	No	1x 350 W fixed	Sep 2011

a. For models A2x, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.

Components	Specification
Form factor	Tower (can be a 4U rack form factor using the optional Tower-to-Rack Conversion Kit).
Processor	One quad-core Intel Xeon E3-1200 or **Xeon E3-1200 v2 series processor** (up to 3.6 GHz/8 MB/1600 MHz) or one dual-core Intel Core i3 processor (up to 3.4 GHz/3 MB/1600 MHz), or one dual-core Pentium processor (up to 3.1 GHz/3 MB/1333 MHz) or one Intel Celeron (1.6 GHz/1 MB/1066 MHz).
L3 cache	Up to 8 MB L3 for Intel Xeon E3-1200 and E3-1200 v2 processors. Up to 3 MB L3 for Intel Core i3 and Pentium processors.
Chip set	Intel C202.
Memory DIMM slots	**Four DDR3 DIMM slots.**
Memory capacity	Up to **32 GB with 8 GB DDR3 UDIMMs** and four populated DIMM slots. RDIMMs are not supported.
Memory protection	ECC.
Disk drive bays	Up to **four 3.5" Simple Swap SATA HDDs**.
Maximum internal storage	**Up to 16 TB** with 4 TB 3.5" SATA HDDs.
RAID support	**Software RAID 0, 1, 10 with ServeRAID C100 controller**; hardware RAID 0, 1, 1E with ServeRAID H1110, BR10il v2, or M1015. Optional RAID 5, 50 with ServeRAID M5014. Optional upgrade to RAID 5 is available for M1015.
Optical drive bays	One 5.25" HH bay, support for DVD-ROM or multiburner. **Half-High SATA DVD-ROM standard** in standard models.
Tape drive bays	One 5.25" HH bay, support for DDS, RDX, or LTO.
Network interfaces	Integrated two-port Gigabit Ethernet (**Intel 82574L**). One port is shared with the IBM Integrated Management Module (IMM).
PCI expansion slots	**Four PCI Express slots**: ▶ Slot 1, PCIe 3.0 x8, full-height, half-length (PCIe 2.0 in some models) ▶ Slot 2, PCIe 3.0 x16 (x8 wired), full-height, half-length (PCIe 2.0 in some models) ▶ Slot 3, PCIe 2.0 x4, full-height, half-length ▶ Slot 4, PCIe 2.0 x1, full-height, half-length
External ports	Two USB 2.0 ports on front. Four USB 2.0, one DB-15 video, one DB-9 serial, two RJ-45 Gigabit Ethernet network ports (one dedicated and one shared with the IMM) on rear. One internal USB port for internal USB tape drive.
Cooling	One speed-controlled nonredundant fan.
Power supply	One fixed 350 W ac or 300 W ac 80 PLUS Bronze power supply (model dependent).
Hot-swap parts	None.
Systems management	UEFI, IBM IMM, Predictive Failure Analysis, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide™.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Operating systems supported	Microsoft Windows Server 2008 R2, 2008, 2012, 2012 R2; Red Hat Enterprise Linux 5 and 6; SUSE Linux Enterprise Server 10 and 11; VMware ESX 4.1, 5.0, 5.1, 5.5
Limited warranty	One-year customer replaceable unit and on-site limited warranty with 9x5/next-business-day (NBD) response time.
Service and support	Optional service upgrades available through IBM ServicePacs: 24x7/NBD or four hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.

Components	Specification
Dimensions	Height: 360 mm (14.2 in), width: 180 mm (7.1 in), depth: 480 mm (18.9 in).
Weight	Minimum configuration: 10 kg (22.0 lb), maximum configuration: 13 kg (28.7 lb).

Labels (front): Optical drive, System error LED, HDD activity LED, Available 5.25-inch bay, USB ports, Power LED, Power button, Four simple-swap HDD bays (behind front cover)

Labels (rear): Serial port, Video port, Thumbscrews to remove the side cover, 2x Ethernet ports, 4x USB ports, Loop for cover lock, 4x PCIe slots

Popular and system-unique options:

Part	Description
44T1570	2 GB (1x 2 GB, 1Rx8, 1.5 V) PC3-10600 CL9 ECC 1333 LP UDIMM
44T1571	4 GB (1x 4 GB, 2Rx8) PC3-10600 CL9 ECC 1333 LP UDIMM
90Y3165	8 GB (1x 8 GB, 4Gb, 2Rx8, 1.5V) PC3-10600 DDR3-1333 LP UDIMM
00D4955	4GB (1x4GB, 2Rx8, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP UDIMM
00D4959	8GB (1x8GB, 2Rx8, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP UDIMM
43W7622	IBM 1TB 7200 SATA 3.5" Simple Swap HDD
42D0787	IBM 2TB 7200 NL SATA 3.5" SS HDD
81Y9778	IBM 3TB 7.2K 6 Gbps SATA 3.5" SS HDD
81Y4492	ServeRAID H1110 SAS/SATA Controller
46M0831	ServeRAID M1015 SAS/SATA Controller
46M0832	ServeRAID M1000 Series Advance Feature Key
46M0916	ServeRAID M5014 SAS/SATA Controller
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
69Y5182	Tower to 4U Rack Conversion Kit for IBM System x3100 M4

For a list of all supported options, see the IBM Redbooks Product Guide for the IBM System x3100 M4: http://www.redbooks.ibm.com/abstracts/tips0811.html?Open

IBM System x3100 M4 (hot-swap HDDs and power)

Model[1]	Intel Processor (one maximum)	Memory	RAID controller	Disk bays	Disks	Network	Optical	PCIe 3.0	Power supply	Announced
2582-F4x	1x Xeon E3-1270v2 3.5GHz 4C 8 MB 1600 MHz 69W	1x 4 GB 1600 MHz	ServeRAID M1015	8x 2.5" HS	Open	2x GbE	DVD	Yes	1x 430 W HS	Jul 2012

Components	Specification
Form factor	Tower (can be a 5U rack form factor using the optional Tower-to-Rack Conversion Kit).
Processor	One quad-core **Xeon E3-1200 v2 series processor**; Other processor options available via CTO: Intel Xeon E3-1200 (up to 3.6 GHz/8 MB/1600 MHz) or one dual-core Intel Core i3 processor (up to 3.4 GHz/3 MB/1600 MHz), or one dual-core Pentium processor (up to 3.1 GHz/3 MB/1333 MHz) or one Intel Celeron (1.6 GHz/1 MB/1066 MHz)
L3 cache	Up to 8 MB L3 for Intel Xeon E3-1200 and E3-1200 v2 processors. Up to 3 MB L3 for Intel Core i3 and Pentium processors.
Chip set	Intel C202.
Memory DIMM slots	**Four DDR3 DIMM slots.**
Memory capacity	Up to **32 GB with 8 GB DDR3 UDIMMs** and four populated DIMM slots. RDIMMs are not supported.
Memory protection	ECC.
Disk drive bays	Up to **eight 2.5" hot-swap disk drives**.
Maximum internal storage	Up to 9.6 TB with 1.2 TB 2.5" NL SAS or NL SATA HDD, or **up to 12.8 TB** with 1.6 TB 2.5" SSD.
RAID support	**Hardware RAID 0, 1, 1E** with ServeRAID M1015. **Optional RAID 5** and 50 using Feature on Demand license upgrade. Optional M5014 or M5015 with cache.
Optical drive bays	One 5.25" HH bay, support for DVD-ROM or multiburner. **Half-High SATA DVD-ROM standard** in standard models.
Tape drive bays	One 5.25" HH bay, support for DDS, RDX, or LTO.
Network interfaces	Integrated two-port Gigabit Ethernet (**Intel 82574L**). One port is shared with the IBM Integrated Management Module (IMM).
PCI expansion slots	**Four PCI Express slots**: ▶ Slot 1, PCIe 3.0 x8, full-height, half-length (PCIe 2.0 in some models) ▶ Slot 2, PCIe 3.0 x16 (x8 wired), full-height, half-length (PCIe 2.0 in some models) ▶ Slot 3, PCIe 2.0 x4, full-height, half-length ▶ Slot 4, PCIe 2.0 x1, full-height, half-length
External ports	Two USB 2.0 ports on front. Four USB 2.0, one DB-15 video, one DB-9 serial, two RJ-45 Gigabit Ethernet network ports (one dedicated and one shared with the IMM) on rear. One internal USB port for internal USB tape drive.
Cooling	One speed-controlled nonredundant fan.
Power supply	Up to two 430W hot-swap 80Plus redundant power supplies
Hot-swap parts	Disk drive bays and power supplies
Systems management	UEFI, IBM IMM, Predictive Failure Analysis, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Operating systems supported	Microsoft Windows Server 2008 R2, 2008, 2012, 2012 R2; Red Hat Enterprise Linux 5 and 6; SUSE Linux Enterprise Server 10 and 11; VMware ESX 4.1, 5.0, 5.1, 5.5
Limited warranty	One-year customer replaceable unit and on-site limited warranty with 9x5/next-business-day (NBD) response time.
Service and support	Optional service upgrades available through IBM ServicePacs: 24x7/NBD or four hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 439 mm (17.3 in), width: 217 mm (8.6 in), depth: 569 mm (22.4 in)
Weight	Minimum configuration: 17.3 kg (38.2 lb), Maximum: 22.8 kg (50.3 lb)

Power button and status LEDs
Optical drive
Available 5¼" bay
USB ports
Reserved bay
8x 2.5-inch hot-swap HDD bays (behind front cover)

2x hot-swap redundant power supplies
Serial port
Video port
2x Ethernet ports
4x USB
System fan
4x PCIe slots
Key for cover lock

Popular and system-unique options:

Part	Description
44T1570	2 GB (1x 2 GB, 1Rx8, 1.5 V) PC3-10600 CL9 ECC 1333 LP UDIMM
44T1571	4 GB (1x 4 GB, 2Rx8) PC3-10600 CL9 ECC 1333 LP UDIMM
90Y3165	8 GB (1x 8 GB, 4Gb, 2Rx8, 1.5V) PC3-10600 DDR3-1333 LP UDIMM
00D4955	4GB (1x4GB, 2Rx8, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP UDIMM
00D4959	8GB (1x8GB, 2Rx8, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP UDIMM
90Y8872	IBM 600GB 10K 6Gbps SAS 2.5" SFF G2HS HDD
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
81Y9730	IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD
46M0832	ServeRAID M1000 Series Advance Feature Key
46M0916	ServeRAID M5014 SAS/SATA Controller
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
42C8923	Tower to 5U Rack Conversion Kit for IBM System x3100 M4

For a list of all supported options, see the IBM Redbooks Product Guide for the IBM System x3100 M4:
http://www.redbooks.ibm.com/abstracts/tips0811.html?Open

IBM System x3100 M4 Express Models

Model[1,2]	Intel Processor (one maximum)	Memory	RAID	Disk bays	Disks	Network	Optical	PCIe 3.0	Power supply	Announced
Brazil										
2582-EFP	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz	1x 4 GB 1333	C100	4x 3.5" SS	1x 500 GB7200 SATA	2x GbE	Multiburner	No	1x 350 W	Mar 2012
2582-KDG	1x Pentium G2120 3.1GHz 2C 3MB 1600 55W	1x 4 GB 1600	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	DVD	Yes	1x 350 W	Jun 2013
2582-KFG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3	1x 4 GB 1600	C100	4x 3.5" SS	1x 1TB 7200 SS SATA	2x GbE	DVD	Yes	1x 350 W	Nov 2013
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
2582-KDG	1x Pentium G2120 3.1GHz 2C 3MB 1600 55W	1x 4 GB 1600	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	DVD	Yes	1x 350 W	Jun 2013
2582-KFG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3	1x 4 GB 1600	C100	4x 3.5" SS	1x 1TB 7200 SS SATA	2x GbE	DVD	Yes	1x 350 W	Nov 2013
Russia/Commonwealth of Independent States (CIS)										
2582-KAG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3	1x 4 GB 1600	M1015	8x 2.5" HS	Open	2x GbE	Multiburner	Yes	1x 430 W HS	Aug 2012
2582-KEG	1x Xeon E3-1270v2 3.5GHz 4C 8 MB 1600 MHz 69W	1x 4 GB 1600	H1100	4x 3.5" SS	1x 1 TB 7200 SATA	2x GbE	Multiburner	Yes	1x 350 W	Jun 2013
2582-KFG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3	1x 4 GB 1600	C100	4x 3.5" SS	1x 1TB 7200 SS SATA	2x GbE	DVD	Yes	1x 350 W	Nov 2013
2583-KLG	1x Xeon E3-1270v2 3.5GHz 4C 8 MB 1600 MHz 69W	1x 8 GB 1600	C100	2x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	Multiburner	Yes	1x 300 W	Jun 2013
2583-KMG	1x Xeon E3-1270v2 3.5GHz 4C 8 MB 1600 MHz 69W	1x 4 GB 1600	H1100	2x 3.5" SS	2x 1 TB 7200 SATA	2x GbE	Multiburner	Yes	1x 300 W	Jun 2013

IBM System x3100 M5 (compact tower chassis)

Model[1]	Intel Processor (one maximum)	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power supply	Fans	Announced
5457-A3x	Intel Pentium G3440 3.3GHz 3MB 1600MHz 2C (54W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	1x 350W fixed	1 / 2	May 2014
5457-B3x	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	1x 350W fixed	1 / 2	May 2014
5457-C3x	Intel Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	1x 300W fixed	1 / 2	May 2014

Components	Specification
Form factor	Compact tower (can be a 4U rack form factor using the optional Tower-to-Rack Conversion Kit, 69Y5182).
Processor	One Intel "Haswell" processor as listed in model table or available CTO: ▸ One 2-core Intel Celeron Processor 2.8 GHz and 1333 MHz memory ▸ One 2-core Intel Pentium Processor up to 3.4 GHz and 1600 MHz memory ▸ One 2-core Intel Core i3 Processor up to 3.7 GHz and 1600 MHz memory ▸ One 2 or **4-core Intel Xeon E3-1200 v3** up to 3.7 GHz & 1600 MHz memory Supports EM64T for 32-bit and 64-bit operating systems and applications
L3 cache	Up to 2 MB for for Intel Celeron processors. Up to 3 MB L3 for Intel Pentium processors. Up to 4 MB L3 for Intel Core i3 processors. Up to 8 MB L3 for Intel Xeon E3-1200 v3 processors.
Chip set	Intel C222, formerly known as Intel Lynx Point PCH and Intel Denlow platform
Memory DIMM slots	**Four DDR3 DIMM slots** supporting UDIMMs. RDIMMs are not supported.
Memory capacity	Up to **32 GB with 8 GB DDR3 UDIMMs** and four populated DIMM slots.
Memory protection	ECC.
Disk drive bays	Up to **four 3.5" Simple Swap SATA HDDs**.
Max internal storage	**Up to 12 TB** with 3 TB 3.5" SATA HDDs.
RAID support	**Software RAID 0, 1, 10 with ServeRAID C100 controller**, upgradable to RAID 5. Optional hardware RAID with ServeRAID H1110 (RAID 0, 1, 1E, 10) or M1115 (RAID 0, 1, 10, optional RAID 5, 50) or M5110 (RAID 0, 1, 10, optional 5, 50, 6, 60 and optional cache with flash backup). Additional upgrades for M5110. Use of hardware RAID adapter also requires RAID upgrade kit (00J6352).
Optical drive bays	One 5.25" HH bay, support for DVD-ROM or multiburner. Half-High SATA **DVD-ROM or Multiburner** included in standard models.
Tape drive bays	One 5.25" HH bay, support for DDS, RDX, or LTO drive.
Network interfaces	Integrated two-port Gigabit Ethernet (**Broadcom BCM5717**). One port is shared with the IBM Integrated Management Module (IMM).
PCI expansion slots	**Four PCI Express slots**: ▸ Slot 1, PCIe 3.0 x16 (x8 wired), full-height, half-length ▸ Slot 2, PCIe 3.0 x8 (x8 wired), full-height, half-length ▸ Slot 3, PCIe 2.0 x8 (x4 wired), full-height, half-length ▸ Slot 4, PCIe 2.0 x4 (x1 wired), full-height, half-length
Ports	*Front*: **Two USB 3.0 ports**. *Rear*: Four USB 2.0, one DB-15 video, one DB-9 serial, two RJ-45 Gigabit Ethernet network ports (one dedicated and one shared with the IMM). *Internal*: One USB 2.0 port for internal USB tape drive.
Cooling	Up to two speed-controlled non-redundant fan. A second fan is required if two or more adapter are installed (Thermal Solution Fan kit, 46W9177, optional). Optional Operating Temperature Enhancement Kit, 00Y8197, to enable the server to operate in a 40°C environment.
Power supply	One fixed (non-hot-swap) power supply, model dependent: Either 300 W ac 80 PLUS Bronze power supply or 350 W ac power supply
Hot-swap parts	None.
Systems management	UEFI, IBM Integrated Management Module II (IMM2), basic light path diagnostics, Automatic Server Restart, IBM Systems Director, and IBM ServerGuide. **Optional IMM Advanced FoD Upgrade** for remote presence (graphics, keyboard and mouse, virtual media).
Video	**Matrox G200eR2 with 16 MB memory** integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Operating systems supported	Microsoft Windows Server 2008 R2, 2008, 2012, 2012 R2; Red Hat Enterprise Linux 5, 6, 7; SUSE Linux Enterprise Server 11; VMware ESX 5.1, 5.5; 4690 OS (no USB 3.0 support for RHEL 5.1 or VMware ESX 5.1, 5.5)

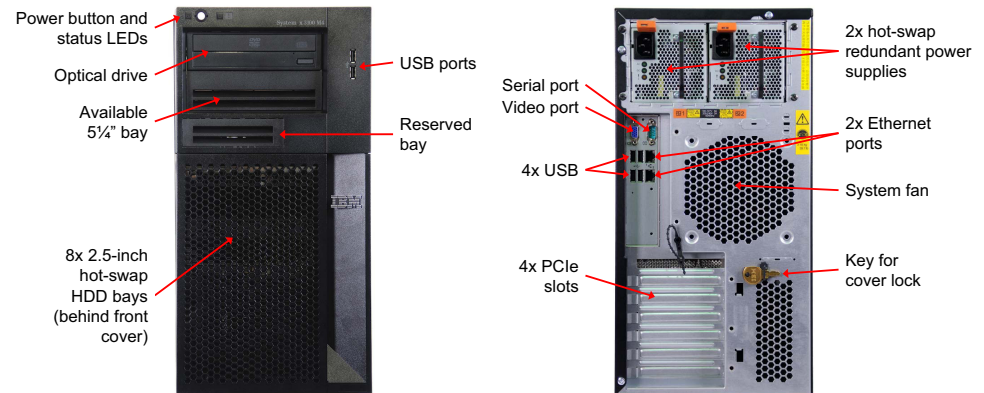| Components	Specification
Limited warranty	One-year customer replaceable unit and on-site limited warranty with 9x5/next-business-day (NBD) response time.
Service and support	Optional service upgrades available through IBM ServicePacs: 24x7/NBD or four hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 360 mm (14.2 in), width: 180 mm (7.1 in), depth: 480 mm (18.9 in).
Weight	Minimum configuration: 10 kg (22.0 lb), maximum configuration: 13 kg (28.7 lb).

Front panel labels: System error LED, HDD activity LED, Power LED, Power button, Optical drive, Available 5¼-inch bay, USB 3.0 ports, Four simple-swap 3.5-in HDD bays (behind front cover)

Rear panel labels: Power supply LEDs, Serial port, Video port, 4x USB 2.0 ports, 2x Ethernet ports, Thumbscrews to remove the side cover, Loop for cover lock, 4x PCIe slots

Popular and system-unique options:

Part	Description
00D5012	4GB (1x4GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM
00D5016	8GB (1x8GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM
81Y9806	IBM 1TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD
81Y9814	IBM 3TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD
81Y4492	ServeRAID H1110 SAS/SATA Controller for IBM System x
81Y4448	ServeRAID M1115 SAS/SATA Controller for IBM System x
81Y4406	ServeRAID C100 Series RAID 5 Upgrade for IBM System x-FoD
49Y4240	Intel Ethernet Quad Port Server Adapter I340-T4 for IBM System x
90Y3901	IBM Integrated Management Module Advanced Upgrade
46W9177	System x3100 Thermal Solution Fan kit for 4U Tower
00Y8197	System x3100 Operating Temperature Enhancement Kit for 4U Tower
00J6352	System x3100 3.5" Simple Swap HDD Hardware RAID upgrade kit
69Y5182	Tower to Rack Kit for System x 4U Tower

For a list of all supported options, see the IBM Redbooks Product Guide for the IBM System x3100 M5: http://www.redbooks.ibm.com/abstracts/tips1165.html?Open

IBM System x3100 M5 Express Models (compact tower chassis)

Model[1,2]	Intel Processor (one maximum)	Memory	RAID	Disk bays	Disks	Network	Optical	Power supply	Fans	Announced
North America (NA)										
5457-EAx	Intel Core i3 4150 3.5GHz 3MB 1600MHz 2C (54W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	DVD	1x 350W fixed	1 / 2	May 2014
5457-EBx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	2x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014
5457-ECx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014
5457-EDx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	2x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014
5457-EFx	Intel Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014
Latin America (LA)										
5457-EAx	Intel Core i3 4150 3.5GHz 3MB 1600MHz 2C (54W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	DVD	1x 350W fixed	1 / 2	May 2014
5457-EBx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	2x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014
5457-ECx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014
5457-EDx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	2x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014
5457-EFx	Intel Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014
Europe										
5457-A5G	Intel Pentium G3440 3.3GHz 3MB 1600MHz 2C (53W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	1x 300W fixed	1 / 2	Aug 2014
5457-B5G	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	1x 300W fixed	1 / 2	Aug 2014
5457-K1G	Intel Core i3 4150 3.5GHz 3MB 1600MHz 2C (54W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	DVD	1x 350W fixed	1 / 2	Jun 2014
5457-K2G	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	Jun 2014
Middle East & Africa (MEA)										
5457-K3G	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	2x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	Jun 2014
Russia/Commonwealth of Independent States (CIS)										
5457-K1G	Intel Core i3 4150 3.5GHz 3MB 1600MHz 2C (54W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	DVD	1x 350W fixed	1 / 2	Jun 2014
5457-K2G	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	Jun 2014

IBM System x3100 M5 (hot-swap HDDs and power)

Model[1]	Intel Processor (one maximum)	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power supply	Fans	Announced
5457-C5x	Intel Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	1x 4 GB 1600 MHz	ServeRAID H1110	4x 3.5" HS	Open	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014
5457-F3x	Intel Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	1x 4 GB 1600 MHz	ServeRAID M1115	8x 2.5" HS	Open	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014

Components	Specification
Form factor	Tower (can be a 5U rack form factor using the optional Tower-to-Rack Conversion Kit, 00J6353).
Processor	One Intel "Haswell" processor as listed in model table or available CTO: ▸ One 2-core Intel Celeron Processor 2.8 GHz and 1333 MHz memory ▸ One 2-core Intel Pentium Processor up to 3.4 GHz and 1600 MHz memory ▸ One 2-core Intel Core i3 Processor up to 3.7 GHz and 1600 MHz memory ▸ One 2 or **4-core Intel Xeon E3-1200 v3** up to 3.7 GHz & 1600 MHz memory Supports EM64T for 32-bit and 64-bit operating systems and applications
L3 cache	Up to 2 MB for for Intel Celeron processors. Up to 3 MB L3 for Intel Pentium processors. Up to 4 MB L3 for Intel Core i3 processors. Up to 8 MB L3 for Intel Xeon E3-1200 v3 processors.
Chip set	Intel C222, formerly known as Intel Lynx Point PCH and Intel Denlow platform
Memory DIMM slots	**Four DDR3 DIMM slots** supporting UDIMMs. RDIMMs are not supported.
Memory capacity	Up to **32 GB with 8 GB DDR3 UDIMMs** and four populated DIMM slots.
Memory protection	ECC.
Disk drive bays	Up to **eight 2.5" hot-swap disk drives** or **four 3.5" hot-swap disk drives**
Maximum internal storage	2.5-inch bays: Up to 8 TB with 1 TB 2.5" NL SAS or NL SATA HDDs 3.5-inch bays: Up to 16 TB with 4 TB 3.5" NL SATA HDDs
RAID support	**Software RAID 0, 1, 10 with ServeRAID C100 controller**, upgradable to RAID 5. Optional hardware RAID with ServeRAID H1110 (RAID 0, 1, 1E, 10) or M1115 (RAID 0, 1, 10, optional RAID 5, 50) or M5110 (RAID 0, 1, 10, optional 5, 50, 6, 60 and optional cache with flash backup). Additional upgrades for M5110.
Optical drive bays	One 5.25" HH bay, support for DVD-ROM or multiburner. **Half-High SATA Multiburner** included in standard models.
Tape drive bays	One 5.25" HH bay, support for DDS, RDX, or LTO.
Network interfaces	Integrated two-port Gigabit Ethernet (**Broadcom BCM5717**). One port is shared with the IBM Integrated Management Module (IMM).
PCI expansion slots	**Four PCI Express slots**: ▸ Slot 1, PCIe 3.0 x16 (x8 wired), full-height, half-length ▸ Slot 2, PCIe 3.0 x8 (x8 wired), full-height, half-length ▸ Slot 3, PCIe 2.0 x8 (x4 wired), full-height, half-length ▸ Slot 4, PCIe 2.0 x4 (x1 wired), full-height, half-length
External ports	*Front*: **Two USB 3.0 ports**. *Rear*: Four USB 2.0, one DB-15 video, one DB-9 serial, two RJ-45 Gigabit Ethernet network ports (one dedicated and one shared with the IMM). *Internal*: One USB 2.0 port for internal USB tape drive.
Cooling	Up to two speed-controlled non-redundant fans. A second fan is required if two or more adapter are installed (Thermal Solution Fan kit, 00Y8200, standard in above models). Optional Operating Temperature Enhancement Kit, 00FK940, to enable the server to operate in a 40°C environment.
Power supplies	Up to two 430W hot-swap 80 PLUS Silver redundant power supplies
Hot-swap parts	Disk drive bays and power supplies
Systems management	UEFI, IBM Integrated Management Module II (IMM2), basic light path diagnostics, Automatic Server Restart, IBM Systems Director, and IBM ServerGuide. **Optional IMM Advanced FoD Upgrade** for remote presence (graphics, keyboard and mouse, virtual media).
Video	**Matrox G200eR2 with 16 MB memory** integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Limited warranty	One-year customer replaceable unit and on-site limited warranty with 9x5/ next-business-day (NBD) response time.
Operating systems supported	Microsoft Windows Server 2008 R2, 2008, 2012, 2012 R2; Red Hat Enterprise Linux 5, 6, 7; SUSE Linux Enterprise Server 11; VMware ESX 5.1, 5.5; 4690 OS (no USB 3.0 support for RHEL 5.1 or VMware ESX 5.1, 5.5)

Components	Specification
Service and support	Optional service upgrades available through IBM ServicePacs: 24x7/NBD or four hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 439 mm (17.3 in), width: 217 mm (8.6 in), depth: 569 mm (22.4 in)
Weight	Minimum configuration: 19.6 kg (43 lb), Maximum: 22 kg (48.5 lb)
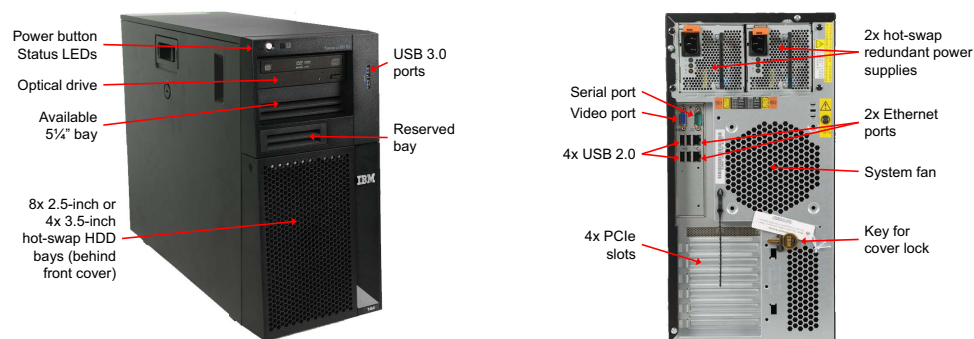
Popular and system-unique options:

Part	Description
00D5012	4GB (1x4GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM
00D5016	8GB (1x8GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
81Y4406	ServeRAID C100 Series RAID 5 Upgrade for IBM System x-FoD
49Y4240	Intel Ethernet Quad Port Server Adapter I340-T4 for IBM System x
90Y3901	IBM Integrated Management Module Advanced Upgrade
00Y8200	System x3100 Thermal Solution Fan kit for 5U Tower
00FK940	System x3100 Operating Temperature Enhancement Kit for 5U Tower
00J6455	System x3100 Hardware RAID Remote Battery/Cap Mechanical kit
00J6353	Tower to Rack kit for IBM System x 5U Tower
00D3821	430W Redundant Power Supply

For a list of all supported options, see the IBM Redbooks Product Guide for the IBM System x3100 M5:
http://www.redbooks.ibm.com/abstracts/tips1165.html?0pen

IBM System x3100 M5 Express Models (hot-swap HDDs and power)

Model[1,2]	Intel Processor (one maximum)	Memory	RAID	Disk bays	Disks	Network	Optical	Power supply	Fans	Announced
North America (NA)										
5457-EEx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID H1110	8x 2.5" HS	Open	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014
5457-EGx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID M1115	8x 2.5" HS	1x 300GB 10K SAS	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014
5457-EHx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID M1115	8x 2.5" HS	Open	2x GbE	Multiburner	2x 430W HS	2 / 2	May 2014
5457-EJx	Intel Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID M1115	8x 2.5" HS	Open	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014
5457-EKx	Intel Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	2x 8 GB 1600 MHz	ServeRAID M5110[a]	8x 2.5" HS	Open	2x GbE	Multiburner	2x 430W HS	2 / 2	May 2014
Latin America (LA)										
5457-EEx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID H1110	8x 2.5" HS	Open	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014
5457-EGx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID M1115	8x 2.5" HS	1x 300GB 10K SAS	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014
5457-EHx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID M1115	8x 2.5" HS	Open	2x GbE	Multiburner	2x 430W HS	2 / 2	May 2014
5457-EJx	Intel Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID M1115	8x 2.5" HS	Open	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014
5457-EKx	Intel Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	2x 8 GB 1600 MHz	ServeRAID M5110[b]	8x 2.5" HS	Open	2x GbE	Multiburner	2x 430W HS	2 / 2	May 2014
Europe										
5457-EEx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID H1110	8x 2.5" HS	Open	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014
5457-EHx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID M1115	8x 2.5" HS	Open	2x GbE	Multiburner	2x 430W HS	2 / 2	May 2014
Russia/Commonwealth of Independent States (CIS)										
5457-EEx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID H1110	8x 2.5" HS	Open	2x GbE	Multiburner	1x 430W HS	2 / 2	May 2014
5457-EHx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID M1115	8x 2.5" HS	Open	2x GbE	Multiburner	2x 430W HS	2 / 2	May 2014

a. Model EKx includes ServeRAID M5100 Series 512MB Flash/RAID 5 Upgrade for IBM System x (81Y4487) and System x3100 Hardware RAID Remote Battery/Cap Mechanical kit (00J6455)
b. Model EKx includes ServeRAID M5100 Series 512MB Flash/RAID 5 Upgrade for IBM System x (81Y4487) and System x3100 Hardware RAID Remote Battery/Cap Mechanical kit (00J6455)

IBM System x3250 M4

Model[1]	Intel Processor (one maximum)	Second CPU	Memory	RAID	Disk bays	Disks	Network	Optical	PCIe 3.0	Power	Announced
2583-A2x	1x Corei3-2120 3.3GHz 2C 3 MB 1333 MHz 65W	None	1x 4 GB (1333 MHz)[a]	C100	2x 3.5" SS	Open	2x GbE	Optional	No	1x 300 W / 1	May 2012
2583-B2x	1x Xeon E3-1220v2 3.1 GHz 4C 8MB 1600 MHz 69W	None	1x 4 GB 1600 MHz	C100	2x 3.5" SS	Open	2x GbE	Optional	Yes	1x 300 W / 1	May 2012
2583-C2x	1x Xeon E3-1230v2 3.3GHz 4C 8MB 1600 MHz 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	Open	2x GbE	Optional	Yes	1x 300 W / 1	May 2012
2583-F2x	1x Xeon E3-1270v2 3.5GHz 4C 8MB 1600 MHz 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	Open	2x GbE	Optional	No	1x 460 W / 2	May 2012
2583-32x	1x Pentium G850 2.9 GHz 2C 3 MB 1333 MHz 65W	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Optional	No	1x 300 W / 1	Sep 2011

a. For models A2x, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.

Components	Specification
Form factor	1U Rack.
Processor	One quad-core Intel Xeon E3-1200 or **Xeon E3-1200 v2 series processor** (up to 3.6 GHz/8 MB/1600 MHz) or one dual-core Intel Core i3 2100 series processor (up to 3.3 GHz/3 MB) with up to 1333 MHz of memory speed. Supports specific quad-core and dual-core processors by using configure to order (CTO).
L3 cache	Up to 8 MB L3 for Intel Xeon E3-1200 and E3-1200 v2 processors. Up to 3 MB L3 for Intel Core i3 and Pentium processors.
Chip set	Intel C202.
Memory DIMM slots	**4 DIMM slots** supporting UDIMMs. RDIMMs are not supported.
Memory capacity	Up to **32 GB with four 8 GB DDR3 UDIMMs**.
Memory protection	ECC.
Disk drive bays	Three configurations: ▶ Up to two 3.5" simple-swap SATA HDDs (some models) ▶ Up to four 2.5" hot-swap SAS HDDs (some models) ▶ Up to four 2.5" simple-swap SAS HDDs (CTO only)
Maximum internal storage	**Up to 8 TB with 4 TB SATA HDDs**, or up to 4.8 TB with 1.2 TB SAS HDDs. Intermix of SAS and SATA is not supported.
RAID support	**Software RAID 0, 1 with ServeRAID C100 controller**. Some models with hardware RAID 0, 1, 1E with ServeRAID-BR10il v2 or H1110. Optional RAID 5 with ServeRAID M1015. Optional RAID 5, 50 with ServeRAID M5014 and M5015.
Optical drive bays	One, support for optional DVD-ROM or multiburner.
Tape drive bays	No internal tape drive support.
Network interfaces	**Integrated two-port Gigabit Ethernet** using **Intel 82574L** controller. One port is shared with IMM2.
PCI expansion slots	**Two PCI Express slots**: ▶ One PCI Express 3.0 x8, full-height, half-length (PCIe 2.0 in some models) ▶ One PCI Express 2.0 x4 (for use only by ServeRAID BR10il v2 or H1110 or the Broadcom NetXtreme Dual Port Ethernet Compact Adapter
External ports	Front: Two USB 2.0 ports Rear: Four USB 2.0, one DB-15 video, one DB-9 serial, two RJ-45 Gigabit Ethernet network ports (one is dedicated, one is shared with IMM2) Internal: One USB 2.0 port for embedded hypervisor
Cooling	IBM Calibrated Vectored Cooling with **four fans and N+1 redundancy**.
Power supply	One fixed 300 W ac power supply or up to two redundant 460 W ac power supplies (model dependent).
Hot-swap parts	Hot-swap SAS drives (some models).
Systems management	UEFI, IBM Integrate Management Module II (IMM2), Predictive Failure Analysis, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M 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 4.1, ESXi 4.1, vSphere 5
Limited warranty	**Three-year** customer-replaceable unit and on-site limited warranty with 9x5/next-business-day (NBD) response time.

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 24x7/NBD or four hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 43 mm (1.7 in), width: 439 mm (17.3 in), depth: 576 mm (22.7 in).
Weight	Minimum configuration: 9.3 kg (20.4 lb), maximum: 10.7 kg (23.5 lb).

Power LED
HDD LED
Locator LED   USB   Simple-swap
Error LED   ports   drives

Reset button   Optical drive
Power button

2x Ethernet
Serial port   ports   PCIe slots

Video port   4x USB ports

Popular and system-unique options:

Part	Description
44T1570	2 GB (1x 2 GB, 1Rx8) PC3-10600 CL9 ECC 1333 LP UDIMM
44T1571	4 GB (1x 4 GB, 2Rx8) PC3-10600 CL9 ECC 1333 LP UDIMM
00D4959	8GB (1x8GB, 2Rx8, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP UDIMM
49Y2003	IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
49Y6190	IBM 4TB 7.2K 6Gbps NL SATA 3.5" SS HDD
81Y9742	IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF SS HDD
81Y4492	ServeRAID H1110 SAS/SATA Controller
46M0831	ServeRAID M1015 SAS/SATA Controller
46M0916	ServeRAID M5014 SAS/SATA Controller
A1R5	Broadcom NetXtreme Dual Port Ethernet Compact Adapter (CTO only)
95Y3762	Emulex Dual Port 10GbE SFP+ VFA III
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
46M0902	UltraSlim Enhanced SATA Multi-Burner
94Y6236	IBM 460W Redundant Power Supply

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3250 M4*:
http://www.redbooks.ibm.com/abstracts/tips0812.html?Open

IBM System x3250 M5

Model[1]	Intel Processor (one maximum)	Second CPU	Memory	RAID	Disk bays (std / max)	Disks	Network	I/O slots (std / max)	Optical drive	Power supplies	Announced
5458-A3x	1x Pentium G3440 3.3GHz 3MB 1600MHz 2C (53W)	None	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	July 2014
5458-C3x	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	July 2014
5458-C5x	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 4GB 1600MHz	C100	4x 2.5" SS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1	July 2014
5458-F3x	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	None	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1	July 2014
5458-F5x	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	None	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2	July 2014
5458-G3x	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	None	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2	July 2014
5458-A2x	1x Pentium G3420 3.2GHz 3MB 1600MHz 2C (65W)	None	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	October 2013
5458-B2x	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB 1600MHz	C100	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	October 2013
5458-C2x	1x Xeon E3-1230 v3 3.3GHz 8MB 1600MHz 4C (80W)	None	1x 4GB 1600MHz	H1110	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	October 2013
5458-C4x	1x Xeon E3-1230 v3 3.3GHz 8MB 1600MHz 4C (80W)	None	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1	October 2013
5458-F2x	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 8GB 1600MHz	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2	October 2013
5458-G2x	1x Xeon E3-1270 v3 3.5GHz 8MB 1600MHz 4C (80W)	None	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2	October 2013

Components	Specification
Form factor	1U rack.
Processor	► **One Intel Xeon processor E3-1200 v3** with four cores up to 3.7 GHz, up to 1600 MHz memory speed, 8 MB L3 cache ► One Intel Core-i3 processor 4100/4300 with two cores up to 3.7 GHz, up to 4 MB L3 cache, and 1600 MHz memory speed (CTO only) ► One Intel Pentium processor G3200/G3400 with two cores up to 3.4 GHz, 3 MB L3 cache, and up to 1600 MHz memory speed.
Chipset	Intel C226.
Memory	**Four DIMM sockets**. Support for UDIMMs. DIMM speeds up to 1600 MHz.
Memory maximums	**Up to 32 GB** with 4x 8 GB UDIMMs.
Memory protection	ECC
Disk drive bays	Up to **eight 2.5-inch hot-swap SAS/SATA drive bays**, up to eight 2.5-inch simple-swap drive bays, up to **four 3.5-inch hot-swap SAS/SATA drive bays**, or up to four 3.5-inch SATA simple-swap drive bays.
Maximum internal storage	Up to 7.2 TB with 900 GB 2.5-inch SAS HDDs, up to 8 TB with 1 TB 2.5-inch NL SAS/SATA HDDs, up to 2 TB with 256 GB 2.5-inch SATA SSDs, or **up to 12 TB with 3 TB 3.5-inch NL SAS/SATA HDDs**. Intermix of SAS/SATA is supported.
RAID support	**RAID 0, 1, and 10 with the C100**. RAID 0, 1, and 10 with the H1110 or M1115. Optional upgrade to RAID 5 is available for the C100. Optional upgrade to RAID 5 and 50 is available for the M1115.
Optical drive bays	One, for models with 2.5" drives. Support for optional DVD-ROM or Multiburner.
Tape drive bays	None.
Network interfaces	Up to **four integrated Gigabit Ethernet** 1000BASE-T RJ-45 ports with the onboard BCM5719 controller (two ports are enabled, and an additional two ports require the optional software FoD upgrade to enable them).
I/O expansion slots	Up to two slots, depending on the riser cards installed. The slots are specified: ► Slot 1: PCIe 3.0 x4 (x4-wired); dedicated slot for H1110 ► Slot 2: PCIe 3.0 x8 (x8-wired); full-height, half-length
Ports	**Two USB 3.0 ports** on the front. Four USB 2.0 ports, one DB-15 video port, one DB-9 serial port, and four RJ-45 GbE network ports on the rear. One internal USB port (for embedded hypervisor).
Cooling	IBM Calibrated Vectored Cooling with five redundant non-hot-swap system fans.
Power supply	Up to two **redundant hot-swap 460 W AC power supplies** (80 PLUS certification), or one fixed 300 W AC power supply (80 PLUS certification).
Hot-swap parts	Hard drives (model dependent) and power supplies (model dependent).
Systems management	UEFI, IBM Integrated Management Module II (IMM2), basic light path diagnostics, Automatic Server Restart, IBM Systems Director, and IBM ServerGuide. **Optional IMM Advanced FoD Upgrade** for remote presence (graphics, keyboard and mouse, virtual media).
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	**Matrox G200eR2 with 16 MB memory** integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 11, VMware vSphere 5.5 (ESXi) and VMware vSphere 5.1 (ESXi).
Limited warranty	**Three-year** customer-replaceable unit (CRU) and on-site limited warranty with 9x5 next business day (NBD).
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePac offerings: 4-hour or 2-hour response time, 8 hours fix time, one-year or two-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 43 mm (1.7 in.), width: 435 mm (17.1 in.), depth: 576 mm (22.7 in.)
Weight	Minimum configuration: 8.6 kg (19.0 lb), maximum: 12.3 kg (27.1 lb)

Serial port — 2x 1 GbE (optional via FoD) — PCIe slot 1 (for H1110) — PCIe slot 2

Power button — Optical drive (optional) — 2x USB 3.0 ports — 8x 2.5-inch hot-swap drive bays — Hot-swap power supplies — Video port — 4x USB ports — 2x 1 GbE (standard)

Popular and system-unique options:

Part	Description
00D5012	4GB (1x4GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM
00D5016	8GB (1x8GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP UDIMM
46W6577	2.5" Simple Swap HDD Hardware RAID upgrade kit
46W6576	3.5" Simple Swap HDD Hardware RAID upgrade kit
00AL348	x3250 M5 HS 2.5" HDD 4 to 8 Upgrade Kit
81Y4492	ServeRAID H1110 SAS/SATA Controller for IBM System x
81Y4448	ServeRAID M1115 SAS/SATA Controller for IBM System x
81Y9798	IBM 3TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
81Y9814	IBM 3TB 7.2K 6Gbps NL SATA 3.5" G2SS HDD
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
46M0902	UltraSlim Enhanced SATA Multi-Burner
00AM013	Broadcom Ethernet Adapter 5719 - 4 port upgrade (FoD)
94Y6236	IBM 460W Redundant Power Supply Unit with 80+ certified
41Y8298	IBM Blank USB Memory Key for VMware ESXi Downloads
90Y3901	IBM Integrated Management Module Advanced Upgrade
00J6351	Operating Temperature Enhancement Kit

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3250 M4*:
http://www.redbooks.ibm.com/abstracts/tips0812.html?Open

IBM System x3250 M5 Express Models

| Model[1,2]	Intel Xeon Processor (one maximum)	Second CPU	Memory 1600 MHz	RAID controller	Disk bays	Disks	Network	I/O slots	Optical	Power	Announced
United States											
5458-EEU	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	H1110	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Jul 2014
5458-ELU	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Jul 2014
5458-EAU	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	C100	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Oct 2013
5458-EBU	1x Xeon E3-1230 v3 3.3GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 300 W Fixed / 1	Oct 2013
5458-ECU	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Oct 2013
Canada											
5458-ENU	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	2x 8GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	2x 460 W HS / 2	Jul 2014
5458-EDU	1x Xeon E3-1230 v3 3.3GHz 8MB 1600MHz 4C (80W)	None	2x 8GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	2x 460 W HS / 2	Oct 2013
Latin America											
5458-EEU	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	H1110	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Jul 2014
Asia Pacific (China only)											
5458-ERC	1x Pentium G3430 3.3GHz 3MB 1600MHz 2C (65W)	None	1x 4GB	C100	4x 2.5" SS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1	Oct 2013
5458-ESC	1x Core-i3 4340 3.6GHz 4MB 1600MHz 2C (65W)	None	1x 4GB	C100	4x 2.5" SS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1	Oct 2013
5458-ETC	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	C100	4x 2.5" SS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1	Oct 2013
5458-EUC	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 300 W Fixed / 1	Oct 2013
5458-EVC	1x Pentium G3430 3.3GHz 3MB 1600MHz 2C (65W)	None	1x 4GB	C100	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Oct 2013
5458-EWC	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Oct 2013
5458-EZC	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Oct 2013
Asia Pacific (Japan only)											
5458-EPJ	1x Core i3 4150 3.5GHz 3MB 1600MHz 2C (54W)	None	1x 4GB	C100	4x 3.5" SS / 4	2x 1TB 7.2K	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Jul 2014
5458-EQJ	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2	
5458-EFJ	1x Core-i3 4340 3.6GHz 4MB 1600MHz 2C (65W)	None	1x 4GB	C100	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Oct 2013
5458-EGJ	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Optional	1x 460 W HS / 2	Oct 2013
Asia Pacific (Australia only)											
5458-EHM	1x Xeon E3-1231 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	C100	4x 3.5" SS / 4	2x 1TB 7.2K	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Jul 2014
Europe											
5458-EJG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Jul 2014
5458-EKG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Jul 2014
5458-ELG	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Jul 2014
5458-E1G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	C100	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Oct 2013
5458-E4G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 300 W Fixed / 1	Oct 2013
5458-E5G	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Oct 2013
Central and Eastern Europe (CEE) and Middle East and Africa (MEA)											
5458-EKG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Jul 2014
5458-ELG	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Jul 2014
5458-E2G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 3.5" SS / 4	2x 2TB SATA	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Oct 2013
5458-E4G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 300 W Fixed / 1	Oct 2013
Russia/Commonwealth of Independent States (CIS)											
5458-EJG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Jul 2014
5458-EKG	1x Xeon E3-1241 v3 3.5GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Jul 2014
5458-ELG	1x Xeon E3-1271 v3 3.6GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Jul 2014
5458-E1G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	C100	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 2	None	1x 300 W Fixed / 1	Oct 2013
5458-E4G	1x Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 300 W Fixed / 1	Oct 2013
5458-E5G	1x Xeon E3-1240 v3 3.4GHz 8MB 1600MHz 4C (80W)	None	1x 4GB	H1110	4x 2.5" HS / 4	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Oct 2013
5458-E6G	1x Xeon E3-1270 v3 3.5GHz 8MB 1600MHz 4C (80W)	None	1x 8GB	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	2 / 2	Multiburner	1x 460 W HS / 2	Oct 2013

IBM System x3300 M4

Model[1]	Processor	Second CPU	Memory	RAID	Disk bays	Disks	Onboard Ethernet	Slots (1 CPU / 2 CPUs)	Optical	Power	Announced
7382-A2x	1x E5-2403 4C 1.8GHz 10MB 1066MHz 80W	00D2581	1x 2 GB	C105	4x 3.5" SS / 8[a]	Open	2x GbE / 4	5 / 3[a]	DVD	1x 460 W fixed / 1	Jul 2012
7382-B2x	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	00D2582	1x 4 GB	C105	4x 3.5" HS / 8[a]	Open	2x GbE / 4	5 / 3[a]	DVD	1x 460 W fixed / 1	Jul 2012
7382-C2x	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	00D2583	1x 4 GB	H1110	4x 3.5" HS / 8[a]	Open	2x GbE / 4	5 / 3[a]	DVD	1x 460 W fixed / 1	Jul 2012
7382-D2x	1x E5-2430 6C 2.2GHz 15MB 1333MHz 95W	00D2584	1x 4 GB	H1110	4x 3.5" HS / 8	Open	2x GbE / 4	5 / 3[b]	DVD	1x 550 W HS / 2	Jul 2012
7382-D4x	1x E5-2430 6C 2.2GHz 15MB 1333MHz 95W	00D2584	1x 4 GB	M1115	8x 2.5" HS / 16	Open	2x GbE / 4	5 / 3[b]	DVD	1x 550 W HS / 2	Jul 2012
7382-F2x	1x E5-2440 6C 2.4GHz 15MB 1333MHz 95W	00D2585	1x 4 GB	M1115	8x 2.5" HS / 16	Open	2x GbE / 4	5 / 3[b]	DVD	1x 550 W HS / 2	Jul 2012

   a. In configurations with a 460 W power supply: With 1 CPU, up to 5 PCIe slots usable and 8x 3.5" drive bays usable; With 2 CPUs, up to 3 slots and four 3.5" drive bays usable.
   b. In configurations with 550 W power supplies: With 1 CPU, up to 5 PCIe slots usable; With 2 CPUs, up to 3 slots usable. Drive configurations not affected.

Components	Specification
Form factor	Tower or 4U rack.
Processor	Up to two **Intel Xeon processor E5-2400** product family processors with eight cores (up to 2.3 GHz), six cores (up to 2.4 GHz), or four cores (up to 2.2 GHz), one QPI link up to 8.0 GTps, up to 1600 MHz memory speed, up to 20 MB L3 cache. Intel Xeon processor E5-1400 and Intel Pentium processor 1400 product families also available via CTO.
Chipset	Intel C600
Memory	Up to **12 DDR3 DIMM sockets** (6 DIMMs per processor). RDIMMs and UDIMMs are supported, but memory types cannot be intermixed.
Memory maximums	With RDIMMs: **Up to 192 GB** with 12x 16 GB RDIMMs and two processors. With UDIMMs: Up to 48 GB with 12x 4 GB UDIMMs and two processors.
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), memory mirroring, and sparing.
Disk drive bays	Up to **16x 2.5-inch hot-swap SAS/SATA HDDs or SSDs**, or up to 8x 3.5" hot-swap SAS/SATA HDDs, or up to 8x 3.5" simple-swap SATA HDDs.
Maximum internal storage	**32 TB with 4 TB 3.5" SATA HDDs**, or 19.2 TB with 1.2 TB 2.5" SAS HDDs, or 16 TB with 1 TB 2.5" SATA or NL SAS HDDs or 25.6 TB with 1.6 TB 2.5" SSDs. Intermix of SAS/SATA is supported but not in the same volume.
RAID support	**RAID 0, 1, 10 standard** with the ServeRAID C105 software RAID solution. Optional hardware-based RAID with RAID 0, 1, and 10 support with the ServeRAID H1110, M1115, or M5110. Upgrades to RAID 5 and 50 are available for the M1115. Upgrades to RAID 5 and 50 are available for the M5110 (zero-cache; 512 MB battery-backed cache; 512 MB or 1 GB flash-backed cache). Optional upgrades to RAID 6, 60 available for the M5110 with caches.
Optical drive bay	**One half-height 5.25" bay for optical drive**. DVD-ROM or Multiburner standard (model dependent)
Tape drive bays	One half-height bay for optional USB tape drive or second optical drive.
Network interfaces	Up to **four integrated Gigabit Ethernet** 1000BASE-T RJ-45 ports with the onboard **Intel I350-CM2** controller (two ports are enabled, and an additional two ports require the optional software FoD upgrade to enable them). Port 2 is optional shared with the IMM2 as a management port (dedicated by default)
PCI Expansion slots	Up to six slots but the slots usable depend on the number of processors installed and the power supply used. See the x3300 M4 Product Guide or specifics. ▶ Slot 1: PCIe 3.0 x8; full-height, half-length ▶ Slot 2: PCIe 3.0 x8; full-height, full-length ▶ Slot 3: PCIe 3.0 x8 (x4 wired); full-height, half-length ▶ Slot 4: PCIe 3.0 x16 (x8 wired); full-height, full-length ▶ Slot 5: PCIe 2.0 x4 (x1 wired); full-height, half-length ▶ Slot 6: PCIe 2.0 x8 (x4 wired); full-height, half-length (supports optional PCI-X 64 bit/133 MHz interposer card)
Ports	**Front**: Two USB 2.0 port; **Rear**: Four USB 2.0, one DB-15 video, one DB-9 serial, four RJ-45 GbE network ports; **Internal**: Two internal USB ports (for embedded hypervisor and internal tape drive).
Cooling	IBM Calibrated Vectored Cooling with up to four simple swap fans. Two fans shipped standard on single processor models (fan locations 2 and 4 as shown in Figure 4) and three fans shipped on dual processor models (fan locations 2, 3 and 4). Optional fan in location 1 provides N+1 redundancy.
Power supply	Up to two **redundant hot-swap** 550 W ac or 750 W ac power supplies (80 PLUS Platinum certified), or one 460 W fixed power supply (80 PLUS Bronze certified)
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Hot-swap parts	Hard drives, power supplies (model dependent)
Security	Power-on password, administrator's password, Trusted Platform Module (TPM).
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2), Predictive Failure Analysis, light path diagnostics, automatic server restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional IMM Advanced Upgrade via FoD for remote presence (KVM, virtual media).
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 vSphere 5.
Warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
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	**Tower**: Width: 235 mm (9.25 in), Height: 438 mm (17.1 in), Depth: 678 mm (26.7 in) with stabilizer feet & front bezel. **Rack**: Width: 481 mm (18.9 in), Height: 176 mm (6.9 in) (4U), Depth: 625 mm (24.6 in) excluding bezel (bezel and disk drive handles adds 24 mm)
Weight	Minimum: 22.0 kg (48.5 lb), Maximum: 29.7 kg (65.4 lb)
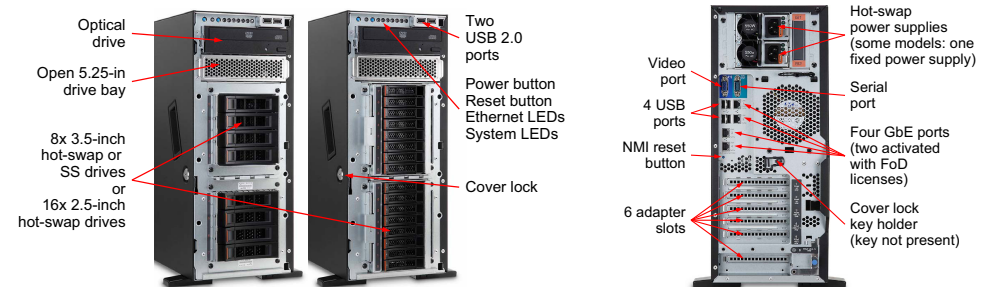
Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1397	8GB (1x8GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
00D2590	IBM System x3300 Simple-Swap SATA Kit 4x3.5"
00D2591	IBM System x3300 3.5" HS Kit for HW/SW RAID
00D2592	IBM System x3300 2nd 2.5" HS Upgrade Kit (with SAS expander on the backplane)
81Y4481	ServeRAID M5110 SAS/SATA Controller
90Y9314	Intel I-350 Embedded Dual Port GbE Activation for IBM System x (FoD)
90Y3901	IBM Integrated Management Module Advanced Upgrade
00D9131	IBM 550W Redundant PSU
00D2593	Redundant System Fan
41Y8298	IBM Blank USB Memory Key for VMware ESXi Downloads

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3300 M4*:
http://www.redbooks.ibm.com/abstracts/tips0904.html?Open

IBM System x3300 M4 Express Models

Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced
North America (NA)										
7382-EAU	1x Xeon E5-2407 4C 2.2GHz 10MB 1066MHz 80W	00D2582	1x 8GB	ServeRAID M1115	4x 3.5" HS / 8	Open	2x GbE	DVD-ROM	1x 460W	Jul 2012
7382-EBU	1x Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	00D2583	1x 8GB	ServeRAID M1115	4x 3.5" HS / 8	Open	2x GbE	DVD-ROM	1x 550W	Jul 2012
7382-ECU	1x Xeon E5-2440 6C 2.4GHz 15MB 1333MHz 95W	00D2585	1x 8GB	ServeRAID M1115	8x 2.5" HS / 16	Open	2x GbE	DVD-ROM	1x 550W	Jul 2012

IBM System x3500 M4 (E5-2600)

Model[1]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced
7383-A2x	1x Xeon E5-2603 4C 1.8 GHz 10 MB 1066 MHz 80 W	90Y5942	1x 4 GB	M1115	8x 2.5" HS / 32	Optional	4x GbE	DVD-ROM	1x 750 W	Mar 2012
7383-B2x	1x Xeon E5-2609 4C 2.4 GHz 10 MB 1066 MHz 80 W	90Y5944	1x 4 GB	M1115	8x 2.5" HS / 32	Optional	4x GbE	DVD-ROM	1x 750 W	Mar 2012
7383-C2x	1x Xeon E5-2620 6C 2.0 GHz 15 MB 1333 MHz 95 W	90Y5945	1x 8 GB	M1115	8x 2.5" HS / 32	Optional	4x GbE	DVD-ROM	1x 750 W	Mar 2012
7383-C4x	1x Xeon E5-2620 6C 2.0 GHz 15 MB 1333 MHz 95 W	90Y5945	1x 8 GB	M1115	8x 3.5" HS / 8	Optional	4x GbE	DVD-ROM	1x 750 W	Mar 2012
7383-D2x	1x Xeon E5-2630 6C 2.3 GHz 15 MB 1333 MHz 95 W	90Y5946	1x 8 GB	M1115	8x 2.5" HS / 32	Optional	4x GbE	DVD-ROM	1x 750 W	Mar 2012
7383-F2x	1x Xeon E5-2640 6C 2.5 GHz 15 MB 1333 MHz 95 W	90Y5947	1x 8 GB	M5110 512-MB Flash	8x 2.5" HS / 32	Optional	4x GbE	DVD-ROM	1x 750 W	Mar 2012
7383-G2x	1x Xeon E5-2650 8C 2.0 GHz 20 MB 1600 MHz 95 W	90Y5948	1x 8 GB	M5110 1 GB Flash	8x 2.5" HS / 32	Optional	4x GbE	DVD-ROM	1x 900 W	Mar 2012
7383-H2x	1x Xeon E5-2670 8C 2.6 GHz 20 MB 1600 MHz 115 W	90Y5955	1x 8 GB	M5110 1 GB Flash	8x 2.5" HS / 32	Optional	4x GbE	DVD-ROM	1x 900 W	Mar 2012
7383-J2x	1x Xeon E5-2680 8C 2.7 GHz 20 MB 1600 MHz 130 W	90Y5950	1x 8 GB	M5110 1 GB Flash	8x 2.5" HS / 32	Optional	4x GbE	DVD-ROM	1x 900 W	Mar 2012

Components	Specification
Form factor	**Tower or 5U rack**.
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight cores (up to 2.9 GHz), six cores (up to 2.9 GHz), or quad-cores (up to 3.3 GHz). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz of memory speed. Up to 20 MB L3 cache.
Chip set	Intel C602J.
Memory	Up to **24 DDR3 DIMM sockets** (12 DIMMs per processor). RDIMMs, UDIMMs, and LRDIMMs supported but memory types cannot be intermixed.
Memory maximums	With LRDIMMs: Up **to 768 GB with 24x 32 GB LRDIMMs** and two processors. With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors. With UDIMMs: Up to 64 GB with 16x 4 GB UDIMMs and two processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	**Up to 32 2.5" hot-swap SAS/SATA HDDs**, up to eight 3.5" hot-swap SAS/SATA HDDs, or up to eight 3.5" Simple Swap SATA HDDs.
Maximum internal storage	28.8 TB with 900 GB 2.5" SAS HDDs, **32 TB with 1 TB 2.5" SATA HDDs**, or 32 TB with 4 TB 3.5" SATA HDDs. Intermix of SAS and SATA is supported.
RAID support	RAID 0, 1, or 10 with M1115 or ServeRAID M5110. Optional upgrade to RAID 5 and 50 available for M1115. Optional upgrades to RAID 5 and 50 are available for M5110 (zero-cache; 512-MB battery-backed cache; 512 MB or 1 GB flash-backed cache). Optional upgrade to RAID 6 and 60 available for M5110.
Optical drive bays	Two 5.25" bays for optical and tape drives. Supports DVD-ROM or multiburner.
Tape drive bays	Two 5.25" bays for optical and tape drives. Support for one RDX or DDS internal USB tape drive. Supports up to two LTO internal SAS tape drives.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45) based on **Intel I350AM4** Quad Port GbE LAN Controller chip.
PCI expansion slots	**Up to eight slots** with two processors and six slots when one processor is installed. All slots are **PCIe 3.0** slots except Slot 1, which is a Gen 2 slot: ▶ Slot 1: PCIe x8 (x4 wired); full height, half length (supports optional PCI-X 64 bit/133 MHz interposer card) ▶ Slot 2: PCIe x8; full height, half length ▶ Slot 3: PCIe x8; full height, full length ▶ Slot 4: PCIe x8 (x4 wired); full height, full length ▶ Slot 5: PCIe x16; full height, full length ▶ Slot 6: PCIe x8 (x4 wired); full height, full length ▶ Slot 7: PCIe x16; full height, full length (requires second processor) ▶ Slot 8: PCIe x16; full height, full length (requires second processor)
Ports	Two USB 2.0 on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports on rear. Two internal USB ports (for embedded hypervisor and internal tape drive).
Cooling	IBM Calibrated Vectored Cooling with up to six simple swap fans (two fans shipped standard on single processor models and three fans shipped on dual processor models) with optional N+N redundancy available.
Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**).
Hot-swap parts	Hard disk drives and power supplies.
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional **IMM Advanced Upgrade** by using Feature on Demand (FoD) for remote presence (graphics, keyboard, mouse, and virtual media).

Components	Specification
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M 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 vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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: 750 mm (29.5 in), height: 440 mm (17.3 in).
Weight	Minimum configuration: 25.0 kg (55.1 lb), maximum: 39.8 kg (87.7lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1397	8GB (1x8GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC 1333 MHz LP RDIMM
49Y1563	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3105	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
94Y5978	Additional 8 x 2.5" Hot-Swap SAS/SATA Upgrade Kit for 16 or 24 HDDs
81Y7010	Additional 8 x 2.5" Hot-Swap SAS/SATA Upgrade Kit for 32 HDDs
49Y2003	IBM 600 GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
95Y3762	Emulex Dual Port 10GbE SFP+ VFA III for IBM System x
81Y7007	Redundant Cooling Upgrade Kit
94Y5974	IBM System x 750W High Efficiency Platinum AC Power Supply
94Y5973	IBM System x 900W High Efficiency Platinum AC Power Supply
90Y3901	IBM Integrated Management Module Advanced Upgrade
81Y7006	Tower to Rack Conversion Kit

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3500 M4*:
http://www.redbooks.ibm.com/abstracts/tips0852.html?Open

IBM System x3500 M4 (E5-2600 v2) (Page 1 of 2)

Model[1]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	Power	Announced
7383-A5x	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W9128	1x 4GB (1333MHz)[a]	M1115	8x 2.5" HS / 32	Open bay	4	8 / 8	DVD-ROM	1x 750W / 2	Sep 2013
7383-B5x	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W9129	1x 4GB (1333MHz)[a]	M1115	8x 2.5" HS / 32	Open bay	4	8 / 8	DVD-ROM	1x 750W / 2	Sep 2013
7383-C5x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M1115	8x 2.5" HS / 32	Open bay	4	8 / 8	DVD-ROM	1x 750W / 2	Sep 2013
7383-C7x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M1115	8x 3.5" HS / 8	Open bay	4	8 / 8	DVD-ROM	1x 750W / 2	Sep 2013
7383-C9x[b]	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M5110 1GB Flash	8x 3.5" HS / 8	Open bay	4	8 / 8	DVD-ROM	1x 750W / 2	Sep 2013
7383-D5x	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W9131	1x 8GB 1600MHz	M1115	8x 2.5" HS / 32	Open bay	4	8 / 8	DVD-ROM	1x 750W / 2	Sep 2013

a. For models A5x and B5x, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed
b. Rack-mount models.

Components	Specification
Form factor	**Tower or 5U rack**.
Processor	Up to two Intel Xeon processor E5-2600 v2 product family CPUs with 12 cores (up to 2.7 GHz) or ten cores (up to 3.0 GHz) or eight cores (up to 3.3 GHz) or six cores (up to 3.5 GHz) or four cores (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. Up to 1866 MHz memory speed. Up to 30 MB L3 cache.
Chip set	Intel C602J.
Memory	Up to **24 DDR3 DIMM sockets** (12 DIMMs per processor). RDIMMs and UDIMMs are supported. Support for LRDIMMs is planned for early in 2014. Memory types cannot be intermixed. **Memory speed up to 1866 MHz**.
Memory maximums	With UDIMMs: Up to 128 GB with 16x 8 GB UDIMMs and two processors. With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With LRDIMMs (planned): Up to 768 GB with 24x 32 GB LRDIMMs and 2 CPUs
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	**Up to 32 2.5" hot-swap SAS/SATA HDDs**, up to eight 3.5" hot-swap SAS/SATA HDDs, or up to eight 3.5" Simple Swap SATA HDDs.
Maximum internal storage	28.8 TB with 900 GB 2.5" SAS HDDs, **32 TB with 1 TB 2.5" SATA HDDs**, or 32 TB with 4 TB 3.5" SATA HDDs. Intermix of SAS and SATA is supported.
RAID support	RAID 0, 1, or 10 with M1115 or ServeRAID M5110. Optional upgrade to RAID 5 and 50 available for M1115. Optional upgrades to RAID 5 and 50 are available for M5110 (zero-cache; 512-MB battery-backed cache; 512 MB or 1 GB flash-backed cache). Optional upgrade to RAID 6 and 60 available for M5110.
Optical drive bays	Two 5.25" bays for optical and tape drives. Supports DVD-ROM or multiburner.
Tape drive bays	Two 5.25" bays for optical and tape drives. Support for one RDX or DDS internal USB tape drive. Supports up to two LTO internal SAS tape drives.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45) based on **Intel I350AM4** Quad Port GbE LAN Controller chip.
PCI expansion slots	**Up to eight slots** with two processors and six slots when one processor is installed. All slots are **PCIe 3.0** slots except Slot 1, which is a Gen 2 slot: ▸ Slot 1: PCIe x8 (x4 wired); full height, half length (supports optional PCI-X 64 bit/133 MHz interposer card) ▸ Slot 2: PCIe x8; full height, half length ▸ Slot 3: PCIe x8; full height, full length ▸ Slot 4: PCIe x8 (x4 wired); full height, full length ▸ Slot 5: PCIe x16; full height, full length ▸ Slot 6: PCIe x8 (x4 wired); full height, full length ▸ Slot 7: PCIe x16; full height, full length (requires second processor) ▸ Slot 8: PCIe x16; full height, full length (requires second processor)
Ports	Two USB 2.0 on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports on rear. Two internal USB ports (for embedded hypervisor and internal tape drive).
Cooling	IBM Calibrated Vectored Cooling with up to six simple swap fans (two fans shipped standard on single processor models and three fans shipped on dual processor models) with optional N+N redundancy available.
Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**).
Hot-swap parts	Hard disk drives and power supplies.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional **IMM Advanced Upgrade** by using Feature on Demand (FoD) for remote presence (graphics, keyboard, mouse, and virtual media).
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 vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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: 750 mm (29.5 in), height: 440 mm (17.3 in).
Weight	Minimum configuration: 25.0 kg (55.1 lb), maximum: 39.8 kg (87.7lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
00D5044	8GB (1x8GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
94Y5978	Additional 8 x 2.5" Hot-Swap SAS/SATA Upgrade Kit for 16 or 24 HDDs
81Y7010	Additional 8 x 2.5" Hot-Swap SAS/SATA Upgrade Kit for 32 HDDs
49Y2003	IBM 600 GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
95Y3762	Emulex Dual Port 10GbE SFP+ VFA III for IBM System x
81Y7007	Redundant Cooling Upgrade Kit
94Y5974	IBM System x 750W High Efficiency Platinum AC Power Supply
94Y5973	IBM System x 900W High Efficiency Platinum AC Power Supply
90Y3901	IBM Integrated Management Module Advanced Upgrade
81Y7006	Tower to Rack Conversion Kit

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3500 M4*: http://www.redbooks.ibm.com/abstracts/tips0852.html?0pen

Model[1]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	Power	Announced
7383-F5x	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W9132	1x 8GB 1600MHz	M5110 512MB Flash	8x 2.5" HS / 32	Open bay	4	8 / 8	DVD-ROM	1x 750W / 2	Sep 2013
7383-G5x	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W9133	2x 4GB 1866MHz	M5110 1GB Flash	8x 2.5" HS / 32	Open bay	4	8 / 8	DVD-ROM	1x 750W / 2	Sep 2013
7383-G9x[a]	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W9133	2x 4GB 1866MHz	M5110 1GB Flash	8x 2.5" HS / 32	Open bay	4	8 / 8	DVD-ROM	1x 750W / 2	Sep 2013
7383-H5x	1x E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	46W9135	2x 4GB 1866MHz	M5110 1GB Flash	8x 2.5" HS / 32	Open bay	4	8 / 8	DVD-ROM	1x 900W / 2	Sep 2013
7383-J5x	1x E5-2680 v2 10C 2.8GHz 25MB 1866MHz 115W	46W9136	2x 4GB 1866MHz	M5110 1GB Flash	8x 2.5" HS / 32	Open bay	4	8 / 8	DVD-ROM	1x 900W / 2	Sep 2013

a. Rack-mount models.

Components	Specification
Form factor	**Tower or 5U rack**.
Processor	Up to two Intel Xeon processor E5-2600 v2 product family CPUs with 12 cores (up to 2.7 GHz) or ten cores (up to 3.0 GHz) or eight cores (up to 3.3 GHz) or six cores (up to 3.5 GHz) or four cores (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. Up to 1866 MHz memory speed. Up to 30 MB L3 cache.
Chip set	Intel C602J.
Memory	Up to **24 DDR3 DIMM sockets** (12 DIMMs per processor). RDIMMs and UDIMMs are supported. Support for LRDIMMs is planned for early in 2014. Memory types cannot be intermixed. **Memory speed up to 1866 MHz**.
Memory maximums	With UDIMMs: Up to 128 GB with 16x 8 GB UDIMMs and two processors. With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With LRDIMMs (planned): Up to 768 GB with 24x 32 GB LRDIMMs and 2 CPUs
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	**Up to 32 2.5" hot-swap SAS/SATA HDDs**, up to eight 3.5" hot-swap SAS/SATA HDDs, or up to eight 3.5" Simple Swap SATA HDDs.
Maximum internal storage	28.8 TB with 900 GB 2.5" SAS HDDs, **32 TB with 1 TB 2.5" SATA HDDs**, or 32 TB with 4 TB 3.5" SATA HDDs. Intermix of SAS and SATA is supported.
RAID support	RAID 0, 1, or 10 with M1115 or ServeRAID M5110. Optional upgrade to RAID 5 and 50 available for M1115. Optional upgrades to RAID 5 and 50 are available for M5110 (zero-cache; 512-MB battery-backed cache; 512 MB or 1 GB flash-backed cache). Optional upgrade to RAID 6 and 60 available for M5110.
Optical drive bays	Two 5.25" bays for optical and tape drives. Supports DVD-ROM or multiburner.
Tape drive bays	Two 5.25" bays for optical and tape drives. Support for one RDX or DDS internal USB tape drive. Supports up to two LTO internal SAS tape drives.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45) based on **Intel I350AM4** Quad Port GbE LAN Controller chip.
PCI expansion slots	**Up to eight slots** with two processors and six slots when one processor is installed. All slots are **PCIe 3.0** slots except Slot 1, which is a Gen 2 slot: ▶ Slot 1: PCIe x8 (x4 wired); full height, half length (supports optional PCI-X 64 bit/133 MHz interposer card) ▶ Slot 2: PCIe x8; full height, half length ▶ Slot 3: PCIe x8; full height, full length ▶ Slot 4: PCIe x8 (x4 wired); full height, full length ▶ Slot 5: PCIe x16; full height, full length ▶ Slot 6: PCIe x8 (x4 wired); full height, full length ▶ Slot 7: PCIe x16; full height, full length (requires second processor) ▶ Slot 8: PCIe x16; full height, full length (requires second processor)
Ports	Two USB 2.0 on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports on rear. Two internal USB ports (for embedded hypervisor and internal tape drive).
Cooling	IBM Calibrated Vectored Cooling with up to six simple swap fans (two fans shipped standard on single processor models and three fans shipped on dual processor models) with optional N+N redundancy available.
Power supply	Up to two redundant hot-swap 550 W ac, 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**).
Hot-swap parts	Hard disk drives and power supplies.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional **IMM Advanced Upgrade** by using Feature on Demand (FoD) for remote presence (graphics, keyboard, mouse, and virtual media).
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 vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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: 750 mm (29.5 in), height: 440 mm (17.3 in).
Weight	Minimum configuration: 25.0 kg (55.1 lb), maximum: 39.8 kg (87.7lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
00D5044	8GB (1x8GB, 2Rx8, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
94Y5978	Additional 8 x 2.5" Hot-Swap SAS/SATA Upgrade Kit for 16 or 24 HDDs
81Y7010	Additional 8 x 2.5" Hot-Swap SAS/SATA Upgrade Kit for 32 HDDs
49Y2003	IBM 600 GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
95Y3762	Emulex Dual Port 10GbE SFP+ VFA III for IBM System x
81Y7007	Redundant Cooling Upgrade Kit
94Y5974	IBM System x 750W High Efficiency Platinum AC Power Supply
94Y5973	IBM System x 900W High Efficiency Platinum AC Power Supply
90Y3901	IBM Integrated Management Module Advanced Upgrade
81Y7006	Tower to Rack Conversion Kit

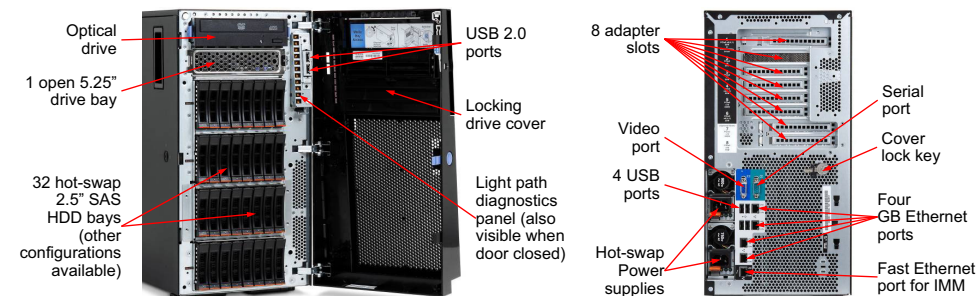For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3500 M4*:
http://www.redbooks.ibm.com/abstracts/tips0852.html?Open

IBM System x3500 M4 (E5-2600 v2) Express Models

Model[1,2]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	GbE	Optical	Power	Announced
United States, Canada, Latin America										
7383-EGU	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W9129	1x 8GB (1333MHz)[a]	M1115	8x 3.5" HS / 8	Open bay	4	Multiburner	1x 750W HS / 2	Sep 2013
7383-EJU	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W9131	1x 8GB 1600MHz	M5110	8x 2.5" HS / 32	Open bay	4	Multiburner	1x 750W HS / 2	Sep 2013
Latin America (Brazil only)										
7914-EPP	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M1115	8x 3.5" HS / 8	2x 500GB NL SATA	4	DVD-ROM	2x 550W HS / 2	Sep 2013
7914-EQP	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M1115	8x 2.5" HS / 32	2x 300GB 10K	4	DVD-ROM	2x 550W HS / 2	Sep 2013
Asia Pacific (China only)										
7383-ELC	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W9128	1x 8GB (1333MHz)[a]	M5110	8x 2.5" HS / 32	1x 300GB 10K	4	DVD-ROM	1x 750W HS / 2	Sep 2013
7383-ERC	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W9129	1x 8GB (1333MHz)[a]	M5110	8x 2.5" HS / 32	1x 300GB 10K	4	DVD-ROM	1x 750W HS / 2	Sep 2013
7383-ESC	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W9129	2x 8GB (1333MHz)[a]	M5110	8x 2.5" HS / 32	Open bay	4	DVD-ROM	2x 900W HS / 2	Sep 2013
7383-ETC	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M5110	8x 2.5" HS / 32	1x 300GB 10K	4	DVD-ROM	1x 750W HS / 2	Sep 2013
Europe Integrated Operating Team (IOT)										
7383-E7G	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W9128	1x 4GB (1333MHz)[a]	M1115	8x 3.5" HS / 8	Open bay	4	Multiburner	1x 550W HS / 2	Sep 2013
7383-E8G	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W9128	1x 4GB (1333MHz)[a]	M1115	8x 2.5" HS / 32	Open bay	4	Multiburner	1x 550W HS / 2	Sep 2013
7383-E9G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M5110 512MB	8x 2.5" HS / 32	Open bay	4	Multiburner	2x 550W HS / 2	Sep 2013
7383-K6G	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W9129	1x 4GB (1333MHz)	M5110 512MB+Flash	8x 2.5" HS / 32	Open bay	4	Multiburner	1x 550W HS / 2	Jan 2014
7383-K7G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M5110 512MB+Flash	8x 2.5" HS / 32	3x 300GB 10K	4	Multiburner	1x 750W HS / 2	Jan 2014
7383-K8G	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W9133	2x 8Gb 1866MHz	M5110 2GB+Flash	8x 2.5" HS / 32	Open bay	4	Multiburner	2x 750W HS / 2	Oct 2014
Central and Eastern Europe (CEE) and Middle East and Africa (MEA)										
7383-K7G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M5110 512MB Flash	8x 2.5" HS / 32	3x 300GB 10K	4	Multiburner	1x 750W HS / 2	Jan 2014
7383-K8G	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W9133	2x 8Gb 1866MHz	M5110 2GB+Flash	8x 2.5" HS / 32	Open bay	4	Multiburner	2x 750W HS / 2	Oct 2014
Russia/Commonwealth of Independent States (CIS)										
7383-E7G	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W9128	1x 4GB (1333MHz)[a]	M1115	8x 3.5" HS / 8	Open bay	4	Multiburner	1x 550W HS / 2	Sep 2013
7383-K6G	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W9129	1x 4GB (1333MHz)	M5110 512MB Flash	8x 2.5" HS / 32	Open bay	4	Multiburner	1x 550W HS / 2	Jan 2014
7383-K7G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W9130	1x 8GB 1600MHz	M5110 512MB Flash	8x 2.5" HS / 32	3x 300GB 10K	4	Multiburner	1x 750W HS / 2	Jan 2014
7383-K8G	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W9133	2x 8Gb 1866MHz	M5110 2GB+Flash	8x 2.5" HS / 32	Open bay	4	Multiburner	2x 750W HS / 2	Oct 2014

a. For these models, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.
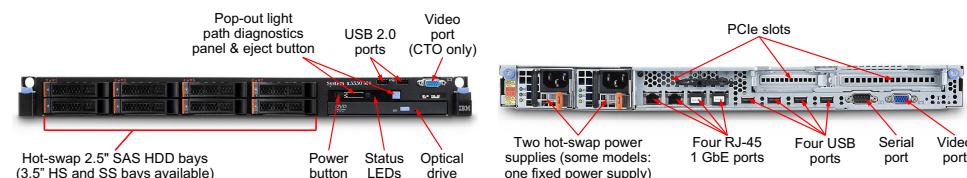
Model[1]	Intel Xeon Processor (2 maximum)	Second CPU	Memory (RDIMMs)	ServeRAID	Disk bays	Disks	Network	Slots	Optical	Power	Announced
7160-A2x	1x E5-2403 4C 1.8GHz 10MB 1066MHz 80W	94Y6380	1x 4 GB (1066 MHz)[a]	C105	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 3	None	1x 460 W Fixed / 1	May 2012
7160-B2x	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	94Y6379	1x 4 GB (1066 MHz)[a]	H1110	4x 3.5" HS / 4	Open	2x GbE / 4	3 / 3	None	1x 460 W Fixed / 1	May 2012
7160-C2x	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	94Y6378	1x 4 GB 1333 MHz	C105	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 3	None	1x 460 W Fixed / 1	May 2012
7160-D2x	1x E5-2430 6C 2.2GHz 15MB 1333MHz 95W	94Y6377	1x 4 GB 1333 MHz	M1115	4x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Optional	1x 460 W HS / 2	May 2012

a. For A2x and B2x, the memory operates at most 1066 MHz, the memory speed of the processor; for G2x, H2x, J2x, memory operates at most 1333 MHz to match the installed DIMM, rather than 1600 MHz

Components	Specification
Form factor	1U rack.
Processor	Up to **two Intel Xeon processor E5-2400** family CPUs with eight cores (up to 2.3 GHz), six cores (up to 2.4 GHz), or four cores (up to 2.2 GHz), one QPI link up to 8.0 GTps, up to 1600 MHz memory speed, up to 20 MB L3 cache are supported; or (CTO only) **one Intel Xeon processor E5-1400** family CPU with four cores at 2.8 GHz, 10 MB L3 cache, and 1333 MHz memory speed; or (CTO only) one **Intel Pentium processor 1400** family CPU with two cores up to 2.8 GHz, 5 MB L3 cache, and 1066 MHz memory speed.
Chipset	Intel C600 series.
Memory	Up to **12 DIMM sockets** (six DIMMs per processor) is supported. LRDIMMs, RDIMMs and UDIMMs are supported, but the memory types cannot be intermixed. Memory DIMM speeds up to **1600 MHz** are supported.
Memory maximums	With LRDIMMs: **Up to 384 GB** with 12x 32 GB RDIMMs and two processors. With RDIMMs: Up to 192 GB with 12x 16 GB RDIMMs and two processors With UDIMMs: Up to 48 GB with 12x 4 GB UDIMMs and two processors
Memory protection	ECC, Chipkill, memory mirroring, and memory rank sparing.
Disk drive bays	Up to **eight 2.5-inch hot-swap** SAS/SATA HDDs, up to eight 2.5-inch simple-swap drive bays, up to **four 3.5-inch hot-swap** SAS/SATA HDDs, or up to four 3.5-inch Simple Swap SATA HDDs is supported.
Maximum internal storage	**Up to 16 TB** with 4 TB 3.5-inch NL SATA HDDs, up to 12.8 TB with 1.6 TB 2.5-inch SAS HDDs, up to 8 TB with 1 TB 2.5-inch NL SAS/SATA HDDs, or up to 6.4 TB with 800 GB 2.5-inch SAS SSDs. Intermix of SAS/SATA is supported.
RAID support	RAID 0 and 1 with C105 is supported. RAID 0, 1, and 10 with the H1110, M1115, or M5110 is supported. Optional upgrades to RAID 5 and 50 are available for the M1115. Optional upgrades to RAID 5 and 50 are available (zero-cache; 512 MB battery-backed cache; 512 MB or 1 GB flash-backed cache) for the M5110. Optional upgrades to RAID 6 and 60 are available for the M5110 with caches.
Optical drive bays	One, for models with 2.5-inch drives. Support for an optional DVD-ROM or multiburner is available.
Tape drive bays	None.
Network interfaces	Up to **four integrated Gigabit Ethernet** 1000BASE-T RJ-45 ports (two ports are enabled, and an additional two ports require the optional software FoD upgrade to enable them). Based on **Intel I350-CM2** chipset.
I/O expansion slots	**Up to three slots**, depending on the riser cards installed. The slots are: ▸ Slot 1: PCIe 3.0 x16 (x8-wired) full-height, half-length, optional PCIe 3.0 x16 (x16-wired) ▸ Slot 2: PCIe 3.0 x16 (x8-wired); low-profile, half-length (not present if an optional x16-wired slot 1 riser is used) ▸ Slot 3: PCIe 3.0 x4 (dedicated slot for ServeRAID adapter); standard on hardware RAID models, optional on software RAID models
Ports	Front: video port (CTO only) and two USB 2.0 ports. Rear: Four USB 2.0 ports, one video port, one DB9 serial port, and four RJ-45 GbE network ports (2 standard, 2 enabled with FoD license). One internal USB port for hypervisor.
Cooling	IBM Calibrated Vectored Cooling with up to **six redundant non-hot-swap fans** (four standard, additional two with second processor) is available. Each fan has two motors.
Power supply	**Up to two redundant hot-swap power supplies**, 460 W AC or 675 W HE AC, or one fixed 460 W AC power supply, or up to two redundant hot-swap 675 W DC power supplies. AC power supplies are 80 PLUS certified.
Hot-swap parts	Hard drives (some models) and power supplies (some models).
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Systems management	UEFI, IBM Integrated Management Module II (IMM2), Predictive Failure Analysis, light path diagnostics (basic standard, advanced optional), Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide. Optional IMM Advanced FOD Upgrade for remote presence (graphics, keyboard and mouse, virtual media).
Security features	Power-on password, administrator's password, and TPM.
Operating systems supported	Microsoft Windows Server 2012, 2008 R2 and 2008, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	Three-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, one-year or two-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 43 mm (1.7 in), width: 447 mm (17.6 in), depth: 673 mm (26.5 in)
Weight	Minimum configuration: 10.4 kg (22.9 lb), maximum: 15.6 kg (34.3 lb)

Pop-out light path diagnostics panel & eject button — USB 2.0 ports — Video port (CTO only) — PCIe slots

Hot-swap 2.5" SAS HDD bays (3.5" HS and SS bays available) — Power button — Status LEDs — Optical drive — Two hot-swap power supplies (some models: one fixed power supply) — Four RJ-45 1 GbE ports — Four USB ports — Serial port — Video port

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3109	8GB (1x8GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y1563	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
94Y6386	4 x 2.5" Hot-Swap SAS upgrade assembling kit
90Y4349	8-pack SATA Enabler for IBM System x
46M0902	UltraSlim Enhanced SATA Multi-Burner
90Y8872	IBM 600GB 10K 6Gbps SAS 2.5" SFF G2HS HDD
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
00D4490	PCIe Riser Card 1 (1 x16 FH/HL Slot) for Graphic card
90Y9314	Intel I-350 Embedded Dual Port GbE Activation for IBM System x (FoD)
95Y3762	Emulex Dual Port 10GbE SFP+ VFA III for IBM System x
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
00D4412	675W Power Supply - HE (Redundant)
00D4413	460W Power Supply (Redundant)
41Y8300	IBM USB Memory Key for VMware vSphere 5.0
90Y3901	IBM Integrated Management Module Advanced Upgrade
90Y6533	Lightpath Upgrade kit

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3530 M4*:
http://www.redbooks.ibm.com/abstracts/tips0888.html?0pen

Model[1]	Intel Xeon Processor (2 maximum)	Second CPU	Memory (RDIMMs)	ServeRAID	Disk bays	Disks	Network	Slots	Optical	Power	Announced
7160-F2x	1x E5-2440 6C 2.4GHz 15MB 1333MHz 95W	94Y6376	1x 4 GB 1333 MHz	M5110 1 GB[a]	8x 2.5" SS / 8	Open	2x GbE / 4	3 / 3	Optional	1x 460 W HS / 2	Nov 2012
7160-G2x	1x E5-2450 8C 2.1GHz 20MB 1600MHz 95W	94Y6375	1x 4 GB 1333 MHz[a]	M5110 512 MB	4x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Optional	1x 675 W HS / 2	May 2012
7160-H2x	1x E5-2470 8C 2.3GHz 20MB 1600MHz 95W	94Y6374	1x 8 GB 1333 MHz[a]	M5110 1 GB[a]	4x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Optional	1x 675 W HS / 2	May 2012
7160-J2x	1x E5-2450L 8C 1.8GHz 20MB 1600MHz 70W	94Y6381	1x 4 GB 1333 MHz[a]	M5110 1 GB[a]	4x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Optional	1x 460 W HS / 2	May 2012

a. The ServeRAID M5110 RAID controller in this model includes flash-backed cache.

Components	Specification
Form factor	1U rack.
Processor	Up to **two Intel Xeon processor E5-2400** family CPUs with eight cores (up to 2.3 GHz), six cores (up to 2.4 GHz), or four cores (up to 2.2 GHz), one QPI link up to 8.0 GTps, up to 1600 MHz memory speed, up to 20 MB L3 cache are supported; or (CTO only) **one Intel Xeon processor E5-1400** family CPU with four cores at 2.8 GHz, 10 MB L3 cache, and 1333 MHz memory speed; or (CTO only) one **Intel Pentium processor 1400** family CPU with two cores up to 2.8 GHz, 5 MB L3 cache, and 1066 MHz memory speed.
Chipset	Intel C600 series.
Memory	Up to **12 DIMM sockets** (six DIMMs per processor) is supported. LRDIMMs, RDIMMs and UDIMMs are supported, but the memory types cannot be intermixed. Memory DIMM speeds up to **1600 MHz** are supported.
Memory maximums	With LRDIMMs: Up to **384 GB** with 12x 32 GB RDIMMs and two processors. With RDIMMs: Up to 192 GB with 12x 16 GB RDIMMs and two processors With UDIMMs: Up to 48 GB with 12x 4 GB UDIMMs and two processors
Memory protection	ECC, Chipkill, memory mirroring, and memory rank sparing.
Disk drive bays	Up to **eight 2.5-inch hot-swap** SAS/SATA HDDs, up to eight 2.5-inch simple-swap drive bays, up to **four 3.5-inch hot-swap** SAS/SATA HDDs, or up to four 3.5-inch Simple Swap SATA HDDs is supported.
Maximum internal storage	**Up to 16 TB** with 4 TB 3.5-inch NL SATA HDDs, up to 12.8 TB with 1.6 TB 2.5-inch SAS HDDs, up to 8 TB with 1 TB 2.5-inch NL SAS/SATA HDDs, or up to 6.4 TB with 800 GB 2.5-inch SAS SSDs. Intermix of SAS/SATA is supported.
RAID support	RAID 0 and 1 with C105 is supported. RAID 0, 1, and 10 with the H1110, M1115, or M5110 is supported. Optional upgrades to RAID 5 and 50 are available for the M1115. Optional upgrades to RAID 5 and 50 are available (zero-cache; 512 MB battery-backed cache; 512 MB or 1 GB flash-backed cache) for the M5110. Optional upgrades to RAID 6 and 60 are available for the M5110 with caches.
Optical drive bays	One, for models with 2.5-inch drives. Support for an optional DVD-ROM or multiburner is available.
Tape drive bays	None.
Network interfaces	Up to **four integrated Gigabit Ethernet** 1000BASE-T RJ-45 ports (two ports are enabled, and an additional two ports require the optional software FoD upgrade to enable them). Based on **Intel I350-CM2** chipset.
I/O expansion slots	**Up to three slots**, depending on the riser cards installed. The slots are: ▶ Slot 1: PCIe 3.0 x16 (x8-wired) full-height, half-length, optional PCIe 3.0 x16 (x16-wired) ▶ Slot 2: PCIe 3.0 x16 (x8-wired); low-profile, half-length (not present if an optional x16-wired slot 1 riser is used) ▶ Slot 3: PCIe 3.0 x4 (dedicated slot for ServeRAID adapter); standard on hardware RAID models, optional on software RAID models
Ports	Front: video port (CTO only) and two USB 2.0 ports. Rear: Four USB 2.0 ports, one video port, one DB9 serial port, and four RJ-45 GbE network ports (2 standard, 2 enabled with FoD license). One internal USB port for hypervisor.
Cooling	IBM Calibrated Vectored Cooling with up to **six redundant non-hot-swap fans** (four standard, additional two with second processor) is available. Each fan has two motors.
Power supply	**Up to two redundant hot-swap power supplies**, 460 W AC or 675 W HE AC, or one fixed 460 W AC power supply, or up to two redundant hot-swap 675 W DC power supplies. AC power supplies are 80 PLUS certified.
Hot-swap parts	Hard drives (some models) and power supplies (some models).
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Systems management	UEFI, IBM Integrated Management Module II (IMM2), Predictive Failure Analysis, light path diagnostics (basic standard, advanced optional), Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide. Optional IMM Advanced FOD Upgrade for remote presence (graphics, keyboard and mouse, virtual media).
Security features	Power-on password, administrator's password, and TPM.
Operating systems supported	Microsoft Windows Server 2012, 2008 R2 and 2008, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	Three-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, one-year or two-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 43 mm (1.7 in), width: 447 mm (17.6 in), depth: 673 mm (26.5 in)
Weight	Minimum configuration: 10.4 kg (22.9 lb), maximum: 15.6 kg (34.3 lb)

Pop-out light path diagnostics panel & eject button — USB 2.0 ports — Video port (CTO only) — PCIe slots

Hot-swap 2.5" SAS HDD bays (3.5" HS and SS bays available) — Power button — Status LEDs — Optical drive — Two hot-swap power supplies (some models: one fixed power supply) — Four RJ-45 1 GbE ports — Four USB ports — Serial port — Video port

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3109	8GB (1x8GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y1563	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
94Y6386	4 x 2.5" Hot-Swap SAS upgrade assembling kit
90Y4349	8-pack SATA Enabler for IBM System x
46M0902	UltraSlim Enhanced SATA Multi-Burner
90Y8872	IBM 600GB 10K 6Gbps SAS 2.5" SFF G2HS HDD
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
00D4490	PCIe Riser Card 1 (1 x16 FH/HL Slot) for Graphic card
90Y9314	Intel I-350 Embedded Dual Port GbE Activation for IBM System x (FoD)
95Y3762	Emulex Dual Port 10GbE SFP+ VFA III for IBM System x
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
00D4412	675W Power Supply - HE (Redundant)
00D4413	460W Power Supply (Redundant)
41Y8300	IBM USB Memory Key for VMware vSphere 5.0
90Y3901	IBM Integrated Management Module Advanced Upgrade
90Y6533	Lightpath Upgrade kit

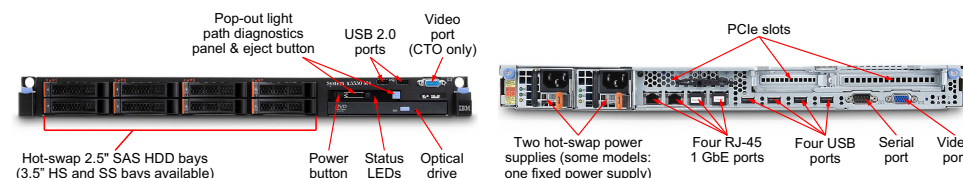For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3530 M4*:
http://www.redbooks.ibm.com/abstracts/tips0888.html?0pen

IBM System x3530 M4 (E5-2400 v2)

Model[1]	Intel Xeon Processor (2 maximum)	2nd CPU	Memory (RDIMMs)	ServeRAID	Disk bays	Disks	Network	Slots	Optical	Power	Announced
7160-A3x	1x E5-2403 v2 4C 1.8GHz 10MB 1333MHz 80W	00J6392	1x 4GB (1333MH)z[a]	C105	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 3	None	1x 460 W Fixed	Jan 2014
7160-A5x	1x E5-2403 v2 4C 1.8GHz 10MB 1333MHz 80W	00J6392	1x 4GB (1333MHz)[a]	C105 8-Pack	8x 2.5" SS / 8	Open bay	2x GbE / 4	2 / 3	Optional	1x 460 W Fixed	Jan 2014
7160-A7x	1x E5-2403 v2 4C 1.8GHz 10MB 1333MHz 80W	00J6392	1x 4GB (1333MHz)[a]	C105	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 3	None	1x 460 W HS / 2	Jan 2014
7160-B3x	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6393	1x 4GB (1333MHz)[a]	C105	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 3	None	1x 460 W Fixed	Jan 2014
7160-B5x	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6393	1x 4GB (1333MHz)[a]	C105 8-Pack	8x 2.5" HS / 8	Open bay	2x GbE / 4	2 / 3	Optional	1x 460 W Fixed	Jan 2014
7160-B7x	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6393	1x 4GB (1333MHz)[a]	C105	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 3	None	1x 460 W HS / 2	Jan 2014
7160-C3x	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6394	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	3 / 3	Optional	1x 460 W HS / 2	Jan 2014
7160-F3x	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6396	1x 4GB 1600MHz	M5110 1GB Flash	8x 2.5" SS / 8	Open bay	2x GbE / 4	3 / 3	Optional	1x 460 W HS / 2	Jan 2014
7160-G3x	1x E5-2450 v2 8C 2.5GHz 20MB 1600MHz 95W	00J6397	1x 8GB 1600MHz	M5110 512MB Flash	8x 2.5" HS / 8	Open bay	2x GbE / 4	3 / 3	Optional	1x 675 W HS / 2	Jan 2014

a. The standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.

Components	Specification
Form factor	1U rack.
Processor	Up to two **Intel Xeon processor E5-2400 v2** product family processors with **10 cores** (up to 2.4 GHz), eight or six cores (up to 2.5 GHz), four cores (up to 2.4 GHz), one QPI link up to 8.0 GTps, **up to 1600 MHz memory speed**, up to 25 MB L3 cache; or Intel Pentium processor 1400 v2 product family processor via CTO only. Intel C600 series chipset.
Memory	Up to **12 DIMM sockets** (six DIMMs per processor). LRDIMMs, RDIMMs, and UDIMMs are supported, but the memory types cannot be intermixed. DIMM speeds up to 1600 MHz.
Memory maximums	With LRDIMMs: **Up to 384 GB** with 12x 32 GB RDIMMs and two processors. With RDIMMs: Up to 192 GB with 12x 16 GB RDIMMs and two processors. With UDIMMs: Up to 96 GB with 12x 8 GB UDIMMs and two processors.
Memory protection	ECC, Chipkill, memory mirroring, and memory rank sparing.
Disk drive bays	Up to eight 2.5-inch hot-swap SAS/SATA drive bays, up to eight 2.5-inch simple-swap drive bays, up to four 3.5-inch hot-swap SAS/SATA drive bays, or up to four 3.5-inch SATA simple-swap drive bays.
Maximum internal storage	Up to 12.8 TB with 1.6 TB 2.5-inch SAS HDDs, up to 8 TB with 1 TB 2.5-inch NL SAS/SATA HDDs, up to 6.4 TB with 800 GB 2.5-inch SAS SSDs, or **up to 16 TB with 4 TB** 3.5-inch NL SAS/SATA HDDs. Intermix of SAS/SATA is supported.
RAID support	**RAID 0 and 1** with the C105. RAID 0, 1, and 10 with the H1110, M1115, or M5110. Upgrades to RAID 5 and 50 are available for the M1115. Upgrades to RAID 5 and 50 are available for the M5110 (zero-cache; 512 MB battery-backed cache; 512 MB or 1 GB flash-backed cache). Optional upgrades to RAID 6 and 60 are available for the M5110 with caches.
Optical drive bays	One, for models with 2.5" drives. Support for optional DVD-ROM or multiburner.
Tape drive bays	None.
Network interfaces	Up to **four integrated Gigabit Ethernet** 1000BASE-T RJ-45 ports with the onboard Intel I350-CM2 controller (two ports are enabled, and an additional two ports require the optional software FoD upgrade to enable them).
I/O expansion slots	**Up to three slots**, depending on the riser cards installed. Slots are as follows: ▶ Slot 1: PCIe 3.0 x16 (x8-wired), optional PCIe 3.0 x16 (x16-wired); full-height, half-length ▶ Slot 2: PCIe 3.0 x16 (x8-wired); low-profile, half-length (not present if an optional x16-wired slot 1 riser is used) ▶ Slot 3: PCIe 3.0 x4 (dedicated slot for ServeRAID adapter); standard on hardware RAID models, optional on software RAID models
Ports	Two USB 2.0 ports and one DB-15 video port (CTO or special bid only, feature code A23Q) on the front. Four USB 2.0 ports, one DB-15 video port, one DB-9 serial port, and four RJ-45 GbE network ports on the rear. One internal USB port (for embedded hypervisor).
Cooling	IBM Calibrated Vectored Cooling with up to **six redundant non-hot-swap fans** (four standard, additional two with second processor). Each fan has two motors.
Power supply	Up to **two redundant hot-swap** 460 W AC or 675 W HE AC power supplies (80 PLUS certification), or one fixed 460 W AC power supply (80 PLUS certification), or up to two redundant hot-swap 675 W DC power supplies.
Hot-swap parts	Hard drives (model dependent) and power supplies (model dependent).
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Systems management	UEFI, IMM2, Predictive Failure Analysis, light path diagnostics (basic standard, advanced optional), Automatic Server Restart, IBM Systems Director and Active Energy Manager, and IBM ServerGuide. Optional IMM Advanced FoD Upgrade for remote presence (graphics, keyboard and mouse, virtual media).
Security features	Power-on password, administrator's password, and TPM.
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, 2008 R2, and 2008 (x64), Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.0, 5.1, and 5.5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePac offerings: 4-hour or 2-hour response time, 8 hours fix time, one-year or two-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 43 mm (1.7 in.), width: 447 mm (17.6 in.), depth: 673 mm (26.5 in.)
Weight	Minimum configuration: 10.4 kg (22.9 lb), maximum: 15.6 kg (34.3 lb)

Pop-out light path diagnostics panel & eject button — USB 2.0 ports — Video port (CTO only) — PCIe slots

Hot-swap 2.5" SAS HDD bays (3.5" HS and SS bays available) — Power button — Status LEDs — Optical drive — Two hot-swap power supplies (some models: one fixed power supply) — Four RJ-45 1 GbE ports — Four USB ports — Serial port — Video port

Popular and system-unique options (see the model table for processor options):

Part	Description
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
94Y6386	4 x 2.5" Hot-Swap SAS upgrade assembling kit
90Y4349	8-pack SATA Enabler for IBM System x
46M0902	UltraSlim Enhanced SATA Multi-Burner
90Y8872	IBM 600GB 10K 6Gbps SAS 2.5" SFF G2HS HDD
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
00D4490	PCIe Riser Card 1 (1 x16 FH/HL Slot) for Graphic card
90Y9314	Intel I350 Embedded Dual Port GbE Activation for IBM System x (FoD)
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
00D4412	675W Power Supply - HE (Redundant)
00D4413	460W Power Supply (Redundant)
90Y3901	IBM Integrated Management Module Advanced Upgrade
90Y6533	Lightpath Upgrade kit

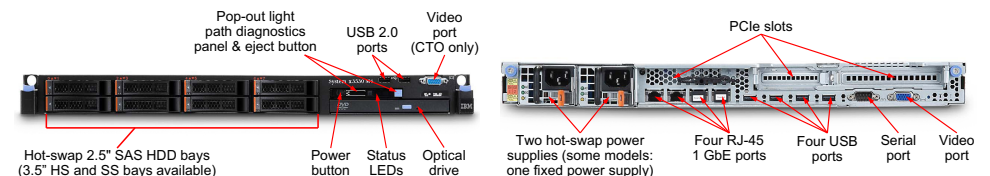For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3530 M4 (E5-2400 v2)*: http://www.redbooks.ibm.com/abstracts/tips1144.html?Open

IBM System x3530 M4 (E5-2400 v2) Express Models

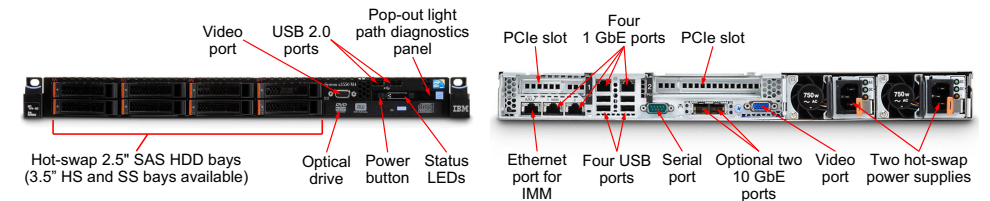| Model[1,2]	Processor	Second CPU	Memory	RAID	Disk bays	Disks	Network	I/O slots	Optical	Power (2 max)	Announced
Europe											
7160-E5G	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6396	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS	Jan 2014
7160-E8G	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6393	1x 8GB (1333MHz)[a]	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS	Jan 2014
Central and Eastern Europe (CEE) and Middle East and Africa (MEA)											
7160-E5G	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6396	1x 8GB 1600MHz	M1115	8x 2.5" HS / 8	Open bay	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS	Jan 2014
7160-E6G	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6393	1x 8GB (1333MHz)[a]	M5110	4x 3.5" SS / 4	Open bay	2x GbE / 4	3 / 3	None	1x 460 W HS	Jan 2014
Russia/Commonwealth of Independent States (CIS)											
7160-E6G	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6393	1x 8GB (1333MHz)[a]	M5110	4x 3.5" SS / 4	Open bay	2x GbE / 4	3 / 3	None	1x 460 W HS	Jan 2014
United States											
7160-EDU	1x E5-2403 v2 4C 1.8GHz 10MB 1333MHz 80W	00J6392	1x 8GB (1333MHz)[a]	C105	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 3	None	1x 460 W HS	Jan 2014
7160-EEU	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6394	1x 8GB 1600MHz	H1110	4x 3.5" SS / 4	Open bay	2x GbE / 4	3 / 3	None	1x 460 W HS	Jan 2014
7160-EFU	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6396	1x 8GB 1600MHz	M5110	8x 2.5" HS / 8	Open bay	2x GbE / 4	3 / 3	Multiburner	2x 460 W HS	Jan 2014
Canada											
7160-EGY	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6393	2x 16GB (1333MHz)[a]	M5110 1GB Flash	8x 2.5" HS / 8	Open bay	2x GbE / 4	3 / 3	Multiburner	2x 460 W HS	Jan 2014
Latin America (Brazil only)											
7160-EQU	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6394	1x 8GB 1600MHz	C105	4x 3.5" SS / 4	2x 1TB 7.2K	2x GbE / 4	2 / 3	None	1x 460 W HS	Jan 2014
7160-ERU	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6394	1x 8GB 1600MHz	H1110	4x 3.5" SS / 4	2x 300GB 15K	2x GbE / 4	2 / 3	None	1x 460 W HS	Jan 2014
7160-ETU	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6396	1x 8GB 1600MHz	C105	4x 3.5" SS / 4	2x 1TB 7.2K	2x GbE / 4	2 / 3	None	1x 460 W HS	Jan 2014
7160-EUU	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6396	1x 8GB 1600MHz	H1110	4x 3.5" SS / 4	2x 300GB 15K	2x GbE / 4	2 / 3	None	1x 460 W HS	Jan 2014
Japan											
7160-EYJ	1x E5-2403 v2 4C 1.8GHz 10MB 1333MHz 80W	00J6392	1x 4GB (1333MHz)[a]	M5110 512MB Flash	8x 2.5" HS / 8	Open bay	2x GbE / 4	3 / 3	Optional	1x 460 W HS	Jan 2014
7160-EZJ	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6393	1x 4GB (1333MHz)[a]	M5110 512MB Flash	8x 2.5" HS / 8	Open bay	2x GbE / 4	3 / 3	Optional	1x 460 W HS	Jan 2014

a. The standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.

IBM System x3550 M4 (E5-2600) (Page 1 of 2)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced
7914-A2x	1x Xeon E5-2603 4C 1.8 GHz 10 MB 1066 MHz 80 W	69Y5672	1x 4 GB	H1110	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-B2x	1x Xeon E5-2609 4C 2.4 GHz 10 MB 1066 MHz 80 W	69Y5674	1x 4 GB	M1115	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-C2x	1x Xeon E5-2620 6C 2.0 GHz 15 MB 1333 MHz 95 W	69Y5675	1x 8 GB	M1115	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-C4x	1x Xeon E5-2620 6C 2.0 GHz 15 MB 1333 MHz 95 W	69Y5675	1x 8 GB	H1110	3x 3.5" HS / 3	Open	4x GbE	Not supported	1x 550 W	Mar 2012
7914-D2x	1x Xeon E5-2630 6C 2.3 GHz 15 MB 1333 MHz 95 W	69Y5676	1x 8 GB	M5110 512-MB Flash	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-F2x	1x Xeon E5-2640 6C 2.5 GHz 15 MB 1333 MHz 95 W	69Y5677	1x 8 GB	M5110 512-MB Flash	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-G2x	1x Xeon E5-2650 8C 2.0 GHz 20 MB 1600 MHz 95 W	69Y5678	1x 8 GB	M5110 1 GB Flash	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-52x	1x Xeon E5-2650L 8C 1.8 GHz 20 MB 1600 MHz 70 W	69Y5685	1x 8 GB	M5110 1 GB Flash	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-H2x	1x Xeon E5-2660 8C 2.2 GHz 20 MB 1600 MHz 95 W	69Y5679	1x 8 GB	M5110 1 GB Flash	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-62x	1x Xeon E5-2665 8C 2.4 GHz 20 MB 1600 MHz 115 W	94Y7547	1x 8 GB	M5110 1 GB Flash	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-J2x	1x Xeon E5-2670 8C 2.6 GHz 20 MB 1600 MHz 115 W	94Y7463	1x 8 GB	M5110 1 GB Flash	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 550 W	Mar 2012
7914-L2x	1x Xeon E5-2680 8C 2.7 GHz 20 MB 1600 MHz 130 W	69Y5680	1x 8 GB	M5110 1 GB Flash	4x 2.5" HS / 8	Open	4x GbE	Optional	1x 750 W	Mar 2012

Components	Specification
Form factor	**1U rack**.
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight cores (up to 2.9 GHz), six cores (up to 2.9 GHz), or quad-cores (up to 3.3 GHz). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz of memory speed. Up to 20 MB L3 cache.
Chip set	Intel C604.
Memory	Up to **24 DDR3 DIMM sockets** (12 DIMMs per processor). RDIMMs, UDIMMs, and LRDIMMs are supported, but memory types cannot be intermixed. **Memory speeds up to 1600 MHz**.
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 64 GB with 16x 4 GB UDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Up to **eight 2.5" hot-swap SAS/SATA HDDs**, or up to three 3.5" hot-swap SAS/SATA HDDs, or up to three 3.5" Simple Swap SATA HDDs.
Maximum internal storage	Up to 7.2 TB with 900 GB 2.5" SAS HDDs, up to 8 TB with 1 TB 2.5" NL SAS/SATA HDDs, or **up to 12 TB with 4 TB 3.5" NL SATA HDDs**. Intermix of SAS and SATA is supported.
RAID support	RAID 0, 1, or 10 with H1110, M1115, or M5110. Optional upgrades to RAID 5 and 50 available for M1115. Optional upgrades to RAID 5 and 50 are available (zero-cache; 512-MB battery-backed cache; 512 -MB or 1 GB flash-backed cache) for M5110. Optional upgrade to RAID 6 and 60 are available for M5110 with caches.
Optical drive bays	One (optional; only for models with 2.5" drives), support for DVD-ROM or multiburner.
Tape drive bays	None.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45); two embedded 10 GbE ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on optional **10 Gb Ethernet mezzanine card** (does not use PCIe slot). **Intel I350AM4** chipset.
PCI expansion slots	**Two slots** depending on the riser cards installed. The slots are as follows (all PCIe slots are **PCIe 3.0** and all PCI-X slots are 64-bit/133 MHz): ▶ Slot 1: PCIe x16; low profile, half length ▶ Slot 2: PCIe x8, optional PCI-X or PCIe x16; full height, half length (requires a second processor) Additional dedicated slot for a ServeRAID adapter.
Ports	Two USB 2.0 (three USB 2.0 for 3.5" HDD models) and one DB-15 video on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. One internal USB ports (for embedded hypervisor).
Cooling	IBM Calibrated Vectored Cooling with up to six N+N redundant hot swap fans (four standard, additional two with second processor). Each fan has two motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac power supplies (**80 PLUS Platinum certification**). -48V dc (750 W) power supply options with CTO.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional **IMM Advanced FOD Upgrade** for remote presence.

Components	Specification
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M 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 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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	Height: 43 mm (1.7 in), width: 429 mm (16.9 in), depth: 734 mm (28.9 in).
Weight	Minimum configuration: 12.7 kg (28 lb), maximum: 15.9 kg (35.1 lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1559	4 GB (1x 4 GB, 1Rx4, 1.5 V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
90Y3109	8 GB (1x 8 GB, 2Rx4,1.5 V) PC3-12800 DDR3-1600 LP RDIMM
49Y1563	16 GB (1x 16 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3105	32 GB (1x 32 Gb, 4Rx4, 1.35 V) PC 3L-10600 CL9 ECC DDR3 1333 MHz LP LRDIMM
81Y6657	x3550 M4 plus 4x 2.5" HDD Assembly Kit
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" Slim-HS HDD
81Y9670	IBM 300GB 15K 6Gbps SAS 2.5" Slim-HS HDD
90Y6456	Emulex Dual Port 10GbE SFP+ Embedded Adapter for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC Power Supply
94Y6669	IBM System x 750W High Efficiency Platinum AC Power Supply
41Y8300	IBM USB Memory Key for VMware vSphere 5.0
90Y3901	IBM Integrated Management Module Advanced Upgrade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3550 M4*:
http://www.redbooks.ibm.com/abstracts/tips0851.html?0pen

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced
7914-32x	1x E5-2643 4C 3.3GHz 10MB 1600MHz 130W	94Y7465	1x 4 GB	M5110	4x 2.5" HS/8	Open	4x GbE	Open	1x 750W	Aug 2012
7914-DDx[a]	2x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	8x 4 GB	M5110 512MB with Battery	4x 2.5" HS/8	2x 600 GB SAS	6x GbE[a]	Multi-burner	2x 550W	Aug 2012
7914-M2x	1x E5-2690 8C 2.9GHz 20MB 1600MHz 135W	94Y7545	1x 4 GB	M5110	4x 2.5" HS/8	Open	4x GbE	Open	1x 750W	Aug 2012

a. Model 7914-DDx is a model optimized as a management node and is preloaded with Windows Server 2008 R2 Standard and IBM Systems Director. DDx also includes Intel Ethernet Dual Port Server Adapter I340-T2 (49Y4230), IBM Integrated Management Module Advanced Upgrade (90Y3901), and Two PCIe x16 slots (features A1HJ and A1HL)

Components	Specification
Form factor	**1U rack.**
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight cores (up to 2.9 GHz), six cores (up to 2.9 GHz), or quad-cores (up to 3.3 GHz). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz of memory speed. Up to 20 MB L3 cache.
Chip set	Intel C604.
Memory	Up to **24 DDR3 DIMM sockets** (12 DIMMs per processor). RDIMMs, UDIMMs, and LRDIMMs are supported, but memory types cannot be intermixed. **Memory speeds up to 1600 MHz**.
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 64 GB with 16x 4 GB UDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Up to **eight 2.5" hot-swap SAS/SATA HDDs**, or up to three 3.5" hot-swap SAS/SATA HDDs, or up to three 3.5" Simple Swap SATA HDDs.
Maximum internal storage	Up to 7.2 TB with 900 GB 2.5" SAS HDDs, up to 8 TB with 1 TB 2.5" NL SAS/SATA HDDs, or **up to 12 TB with 4 TB 3.5" NL SATA HDDs**. Intermix of SAS and SATA is supported.
RAID support	RAID 0, 1, or 10 with H1110, M1115, or M5110. Optional upgrades to RAID 5 and 50 available for M1115. Optional upgrades to RAID 5 and 50 are available (zero-cache; 512-MB battery-backed cache; 512 -MB or 1 GB flash-backed cache) for M5110. Optional upgrade to RAID 6 and 60 are available for M5110 with caches.
Optical drive bays	One (optional; only for models with 2.5" drives), support for DVD-ROM or multiburner.
Tape drive bays	None.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45); two embedded 10 GbE ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on optional **10 Gb Ethernet mezzanine card** (does not use PCIe slot). **Intel I350AM4** chipset.
PCI expansion slots	**Two slots** depending on the riser cards installed. The slots are as follows (all PCIe slots are **PCIe 3.0** and all PCI-X slots are 64-bit/133 MHz): ▶ Slot 1: PCIe x16; low profile, half length ▶ Slot 2: PCIe x8, optional PCI-X or PCIe x16; full height, half length (requires a second processor) Additional dedicated slot for a ServeRAID adapter.
Ports	Two USB 2.0 (three USB 2.0 for 3.5" HDD models) and one DB-15 video on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. One internal USB ports (for embedded hypervisor).
Cooling	IBM Calibrated Vectored Cooling with up to six N+N redundant hot swap fans (four standard, additional two with second processor). Each fan has two motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac power supplies (**80 PLUS Platinum certification**). -48V dc (750 W) power supply options with CTO.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional **IMM Advanced FOD Upgrade** for remote presence.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M 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 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.

Components	Specification
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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	Height: 43 mm (1.7 in), width: 429 mm (16.9 in), depth: 734 mm (28.9 in).
Weight	Minimum configuration: 12.7 kg (28 lb), maximum: 15.9 kg (35.1 lb).

Video port · USB 2.0 ports · Pop-out light path diagnostics panel · Four PCIe slot · 1 GbE ports · PCIe slot

Hot-swap 2.5" SAS HDD bays (3.5" HS and SS bays available) · Optical drive · Power button · Status LEDs · Ethernet port for IMM · Four USB ports · Serial port · Optional two 10 GbE ports · Video port · Two hot-swap power supplies

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1559	4 GB (1x 4 GB, 1Rx4, 1.5 V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
90Y3109	8 GB (1x 8 GB, 2Rx4,1.5 V) PC3-12800 DDR3-1600 LP RDIMM
49Y1563	16 GB (1x 16 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3105	32 GB (1x 32 Gb, 4Rx4, 1.35 V) PC 3L-10600 CL9 ECC DDR3 1333 MHz LP LRDIMM
81Y6657	x3550 M4 plus 4x 2.5" HDD Assembly Kit
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" Slim-HS HDD
81Y9670	IBM 300GB 15K 6Gbps SAS 2.5" Slim-HS HDD
90Y6456	Emulex Dual Port 10GbE SFP+ Embedded Adapter for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC Power Supply
94Y6669	IBM System x 750W High Efficiency Platinum AC Power Supply
41Y8300	IBM USB Memory Key for VMware vSphere 5.0
90Y3901	IBM Integrated Management Module Advanced Upgrade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3550 M4*:
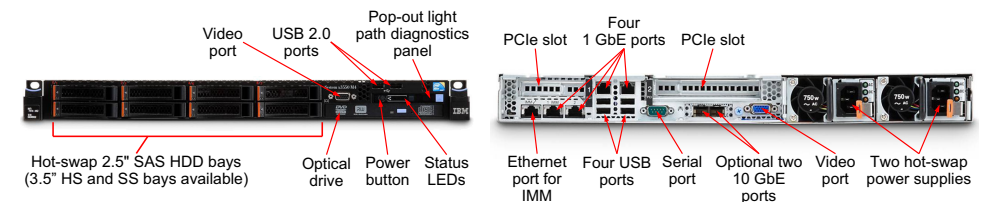http://www.redbooks.ibm.com/abstracts/tips0851.html?Open

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	GbE	Optical	Power	Announced
7914-23x	1x E5-2637 v2 4C 3.5GHz 15MB 1866MHz 130W	46W2846	1x 8GB 1866MHz	M5110	4x 2.5" HS / 8	Open bay	4	Optional	1x 750W / 2	Sep 2013
7914-33x	1x E5-2643 v2 6C 3.5GHz 25MB 1866MHz 130W	46W2847	1x 8GB 1866MHz	M5110	4x 2.5" HS / 8	Open bay	4	Optional	1x 750W / 2	Sep 2013
7914-43x	1x E5-2667 v2 8C 3.3GHz 25MB 1866MHz 130W	46W2848	1x 8GB 1866MHz	M5110	4x 2.5" HS / 8	Open bay	4	Optional	1x 750W / 2	Sep 2013
7914-53x	1x E5-2650L v2 10C 1.7GHz 25MB 1600MHz 70W	46W2850	1x 8GB 1600MHz	M5110 1GB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Sep 2013
7914-73x	1x E5-2695 v2 12C 2.4GHz 30MB 1866MHz 115W	46W2833	1x 8GB 1866MHz	M5110 1GB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 750W / 2	Sep 2013
7914-83x	1x E5-2697 v2 12C 2.7GHz 30MB 1866MHz 130W	46W2834	1x 8GB 1866MHz	M5110 1GB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 750W / 2	Sep 2013
7914-A3x	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W2835	1x 4GB (1333MHz)[a]	H1110	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Sep 2013
7914-B3x	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W2836	1x 4GB (1333MHz)[a]	M1115	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Sep 2013

a. For models A3x and B3x, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.

Components	Specification
Form factor	**1U rack**.
Processor	Up to two **Intel Xeon processor E5-2600 v2** product family CPUs with 12 cores (up to 2.7 GHz) or ten cores (up to 3.0 GHz) or eight cores (up to 3.3 GHz) or six cores (up to 3.5 GHz) or four cores (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. Up to 1866 MHz memory speed. Up to 30 MB L3 cache.
Chip set	Intel C604.
Memory	Up to **24 DDR3 DIMM sockets** (12 DIMMs per processor). RDIMMs are supported. Support for LRDIMMs (Load Reduced DIMMs) is planned for later in 2013. Memory types cannot be intermixed. **Memory speed up to 1866 MHz**.
Memory maximums	With LRDIMMs (planned): **Up to 768 GB** with 24x 32 GB and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Up to **eight 2.5" hot-swap SAS/SATA HDDs**, or up to three 3.5" hot-swap SAS/SATA HDDs, or up to three 3.5" Simple Swap SATA HDDs.
Maximum internal storage	Up to 7.2 TB with 900 GB 2.5" SAS HDDs, up to 8 TB with 1 TB 2.5" NL SAS/SATA HDDs, or **up to 12 TB with 4 TB 3.5" NL SATA HDDs**. Intermix of SAS and SATA is supported.
RAID support	RAID 0, 1, or 10 with H1110, M1115, or M5110. Optional upgrades to RAID 5 and 50 available for M1115. Optional upgrades to RAID 5 and 50 are available (zero-cache; 512-MB battery-backed cache; 512 -MB or 1 GB flash-backed cache) for M5110. Optional upgrade to RAID 6 and 60 are available for M5110 with caches.
Optical drive bays	One (optional; only for models with 2.5" drives), support for DVD-ROM or multiburner.
Tape drive bays	None.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45); two embedded 10 GbE ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on optional **10 Gb Ethernet mezzanine card** (does not use PCIe slot). **Intel I350AM4** chipset.
PCI expansion slots	**Two slots** depending on the riser cards installed. The slots are as follows (all PCIe slots are **PCIe 3.0** and all PCI-X slots are 64-bit/133 MHz): ▶ Slot 1: PCIe x16; low profile, half length ▶ Slot 2: PCIe x8, optional PCI-X or PCIe x16; full height, half length (requires a second processor) Additional dedicated slot for a ServeRAID adapter.
Ports	Two USB 2.0 (three USB 2.0 for 3.5" HDD models) and one DB-15 video on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. One internal USB ports (for embedded hypervisor).
Cooling	IBM Calibrated Vectored Cooling with up to six N+N redundant hot swap fans (four standard, additional two with second processor). Each fan has two motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac power supplies (**80 PLUS Platinum certification**). -48V dc (750 W) power supply options with CTO.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional **IMM Advanced FOD Upgrade** for remote presence.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
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 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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	Height: 43 mm (1.7 in), width: 429 mm (16.9 in), depth: 734 mm (28.9 in).
Weight	Minimum configuration: 12.7 kg (28 lb), maximum: 15.9 kg (35.1 lb).

Video port, USB 2.0 ports, Pop-out light path diagnostics panel, Four 1 GbE ports, PCIe slot, PCIe slot

Hot-swap 2.5" SAS HDD bays (3.5" HS and SS bays available), Optical drive, Power button, Status LEDs, Ethernet port for IMM, Four USB ports, Serial port, Optional two 10 GbE ports, Video port, Two hot-swap power supplies

Popular and system-unique options (see the model table for processor options):

Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
00D5036	8GB (1x8GB, 1Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00D5032	8GB (1x8GB, 1Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
81Y6657	x3550 M4 plus 4x 2.5" HDD Assembly Kit
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" Slim-HS HDD
81Y9670	IBM 300GB 15K 6Gbps SAS 2.5" Slim-HS HDD
90Y6456	Emulex Dual Port 10GbE SFP+ Embedded Adapter for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC Power Supply
94Y6669	IBM System x 750W High Efficiency Platinum AC Power Supply
41Y8300	IBM USB Memory Key for VMware vSphere 5.0
90Y3901	IBM Integrated Management Module Advanced Upgrade

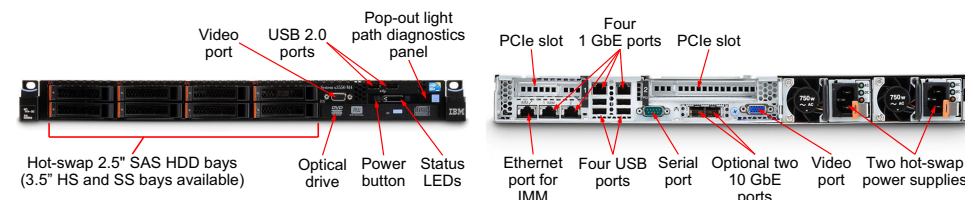For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3550 M4*: http://www.redbooks.ibm.com/abstracts/tips0851.html?Open

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	GbE	Optical	Power	Announced
7914-C3x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W2837	1x 8GB 1600MHz	M1115	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Sep 2013
7914-C5x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W2837	1x 8GB 1600MHz	H1110	3x 3.5" HS / 3	Open bay	4	Not supported	1x 550W / 2	Sep 2013
7914-D3x	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W2838	1x 8GB 1600MHz	M5110 512MB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Sep 2013
7914-F3x	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W2839	1x 8GB 1600MHz	M5110 512MB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Sep 2013
7914-G3x	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W2840	1x 8GB 1866MHz	M5110 1GB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Sep 2013
7914-H3x	1x E5-2660 v2 10C 2.2GHz 25MB 1866MHz 95W	46W2841	1x 8GB 1866MHz	M5110 1GB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Sep 2013
7914-J3x	1x E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	46W2842	1x 8GB 1866MHz	M5110 1GB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Sep 2013
7914-L3x	1x E5-2680 v2 10C 2.8GHz 25MB 1866MHz 115W	46W2843	1x 8GB 1866MHz	M5110 1GB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 750W / 2	Sep 2013
7914-M3x	1x E5-2690 v2 10C 3.0GHz 25MB 1866MHz 130W	46W2844	1x 8GB 1866MHz	M5110	4x 2.5" HS / 8	Open bay	4	Optional	1x 750W / 2	Sep 2013

Components	Specification
Form factor	**1U rack**.
Processor	Up to two **Intel Xeon processor E5-2600 v2** product family CPUs with 12 cores (up to 2.7 GHz) or ten cores (up to 3.0 GHz) or eight cores (up to 3.3 GHz) or six cores (up to 3.5 GHz) or four cores (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. Up to 1866 MHz memory speed. Up to 30 MB L3 cache.
Chip set	Intel C604.
Memory	Up to **24 DDR3 DIMM sockets** (12 DIMMs per processor). RDIMMs are supported. Support for LRDIMMs (Load Reduced DIMMs) is planned for later in 2013. Memory types cannot be intermixed. **Memory speed up to 1866 MHz**.
Memory maximums	With LRDIMMs (planned): **Up to 768 GB** with 24x 32 GB and two processors. With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Up to **eight 2.5" hot-swap SAS/SATA HDDs**, or up to three 3.5" hot-swap SAS/SATA HDDs, or up to three 3.5" Simple Swap SATA HDDs.
Maximum internal storage	Up to 7.2 TB with 900 GB 2.5" SAS HDDs, up to 8 TB with 1 TB 2.5" NL SAS/SATA HDDs, or **up to 12 TB with 4 TB 3.5" NL SATA HDDs**. Intermix of SAS and SATA is supported.
RAID support	RAID 0, 1, or 10 with H1110, M1115, or M5110. Optional upgrades to RAID 5 and 50 available for M1115. Optional upgrades to RAID 5 and 50 are available (zero-cache; 512-MB battery-backed cache; 512 -MB or 1 GB flash-backed cache) for M5110. Optional upgrade to RAID 6 and 60 are available for M5110 with caches.
Optical drive bays	One (optional; only for models with 2.5" drives), support for DVD-ROM or multiburner.
Tape drive bays	None.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45); two embedded 10 GbE ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on optional **10 Gb Ethernet mezzanine card** (does not use PCIe slot). **Intel I350AM4** chipset.
PCI expansion slots	**Two slots** depending on the riser cards installed. The slots are as follows (all PCIe slots are **PCIe 3.0** and all PCI-X slots are 64-bit/133 MHz): ▶ Slot 1: PCIe x16; low profile, half length ▶ Slot 2: PCIe x8, optional PCI-X or PCIe x16; full height, half length (requires a second processor) Additional dedicated slot for a ServeRAID adapter.
Ports	Two USB 2.0 (three USB 2.0 for 3.5" HDD models) and one DB-15 video on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. One internal USB ports (for embedded hypervisor).
Cooling	IBM Calibrated Vectored Cooling with up to six N+N redundant hot swap fans (four standard, additional two with second processor). Each fan has two motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac power supplies (**80 PLUS Platinum certification**). -48V dc (750 W) power supply options with CTO.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional **IMM Advanced FOD Upgrade** for remote presence.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
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 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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	Height: 43 mm (1.7 in), width: 429 mm (16.9 in), depth: 734 mm (28.9 in).
Weight	Minimum configuration: 12.7 kg (28 lb), maximum: 15.9 kg (35.1 lb).

Popular and system-unique options (see the model table for processor options):

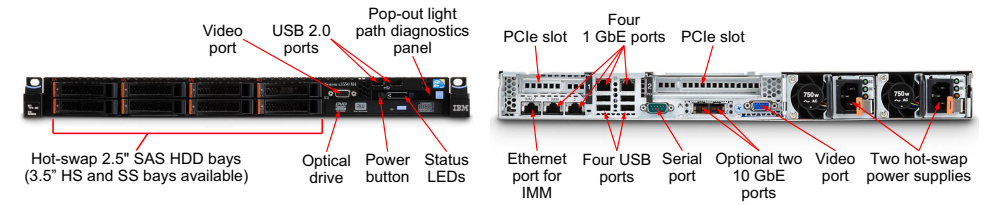| Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
00D5036	8GB (1x8GB, 1Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00D5032	8GB (1x8GB, 1Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
81Y6657	x3550 M4 plus 4x 2.5" HDD Assembly Kit
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" Slim-HS HDD
81Y9670	IBM 300GB 15K 6Gbps SAS 2.5" Slim-HS HDD
90Y6456	Emulex Dual Port 10GbE SFP+ Embedded Adapter for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC Power Supply
94Y6669	IBM System x 750W High Efficiency Platinum AC Power Supply
41Y8300	IBM USB Memory Key for VMware vSphere 5.0
90Y3901	IBM Integrated Management Module Advanced Upgrade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3550 M4*: http://www.redbooks.ibm.com/abstracts/tips0851.html?Open

IBM System x3550 M4 (E5-2600 v2) Express Models

Model[1,2]	Processor	2nd CPU	Memory	ServeRAID controller	Disk bays	Disks	GbE	Optical	Power supplies	Announced
United States, Canada, Latin America										
7914-EHU	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W2837	1x 8GB 1600MHz	M5110	4x 2.5" HS / 8	Open bay	4	Multiburner	1x 550W / 2	Sep 2013
Latin America (Brazil only)										
7914-EPU	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W2837	1x 8GB 1600MHz	M1115	4x 2.5" HS / 8	2x 300GB 10K	4	Multiburner	2x 550W / 2	Sep 2013
7914-EQU	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W2839	2x 8GB 1600MHz	M1115	4x 2.5" HS / 8	2x 300GB 10K	4	Multiburner	2x 550W / 2	Sep 2013
Asia Pacific (China only)										
7914-ELC	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W2835	1x 8GB (1333MHz)[a]	M1115	4x 2.5" HS / 8	2x 300GB 10K	4	Optional	1x 550W / 2	Sep 2013
7914-EOC	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W2835	1x 8GB (1333MHz)[a]	M5110	4x 2.5" HS / 8	2x 300GB 10K	4	Optional	1x 550W / 2	Sep 2013
7914-ESC	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W2836	1x 8GB (1333MHz)[a]	M1115	4x 2.5" HS / 8	2x 300GB 10K	4	Optional	1x 550W / 2	Sep 2013
7914-ETC	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W2836	1x 8GB (1333MHz)[a]	M5110	4x 2.5" HS / 8	2x 300GB 10K	4	Optional	1x 550W / 2	Sep 2013
7914-EVC	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W2837	1x 8GB 1600MHz	M1115	4x 2.5" HS / 8	2x 300GB 10K	4	Optional	1x 550W / 2	Sep 2013
7914-EWC	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W2837	1x 8GB 1600MHz	M5110	4x 2.5" HS / 8	2x 300GB 10K	4	Optional	1x 550W / 2	Sep 2013
Europe Integrated Operating Team (IOT)										
7914-E6G	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W2835	1x 4GB (1333MHz)[a]	M1115	4x 2.5" HS / 8	Open bay	4	Multiburner	1x 550W / 2	Sep 2013
7914-E7G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W2837	1x 8GB 1600MHz	M5110 512MB[b]	8x 2.5" HS / 8	Open bay	4	Multiburner	1x 550W / 2	Sep 2013
7914-E8G	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W2838	1x 8GB 1600MHz	M5110 512MB Flash	4x 2.5" HS / 8	2x 300GB 10K	4	Multiburner	2x 550W / 2	Sep 2013
7914-K6G	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W2840	2x 8GB 1866MHz	M5110 1GB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Dec 2013
7914-K7G	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W2839	1x 8GB 1600MHz	M5110 1GB Flash	8x 2.5" HS / 8	Open bay	4	Multiburner	1x 550W / 2	Jan 2014
Central and Eastern Europe (CEE) and Middle East and Africa (MEA)										
7914-E7G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W2837	1x 8GB 1600MHz	M5110 512MB[b]	8x 2.5" HS / 8	Open bay	4	Multiburner	1x 550W / 2	Sep 2013
7914-E8G	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W2838	1x 8GB 1600MHz	M5110 512MB Flash	4x 2.5" HS / 8	2x 300GB 10K	4	Multiburner	2x 550W / 2	Sep 2013
Russia/Commonwealth of Independent States (CIS)										
7914-E9G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W2837	1x 8GB 1600MHz	M5110 512MB Flash	8x 2.5" HS / 8	Open bay	4	Multiburner	1x 550W / 2	Sep 2013
7914-EFG	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W2838	1x 16GB (1600MHz)[c]	M5110 512MB Flash	8x 2.5" HS / 8	Open bay	4	Multiburner	1x 550W / 2	Sep 2013
7914-K6G	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W2840	2x 8GB 1866MHz	M5110 1GB Flash	4x 2.5" HS / 8	Open bay	4	Optional	1x 550W / 2	Dec 2013
7914-K7G	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W2839	1x 8GB 1600MHz	M5110 1GB Flash	8x 2.5" HS / 8	Open bay	4	Multiburner	1x 550W / 2	Jan 2014

a. For these models, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.
b. The ServeRAID M5110 RAID controller in this model includes cache memory with optional battery backup.
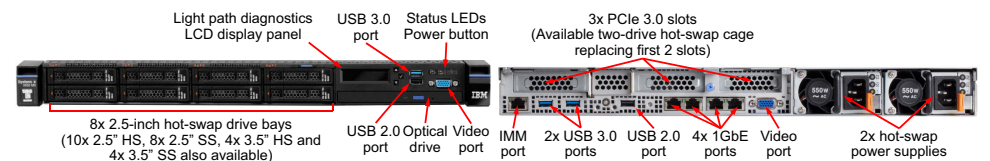c. For model EFG, the standard DIMM is rated at 1866 MHz, but operates at up to 1600 MHz to match the processor memory speed.

IBM System x3550 M5

Model[1]	Intel Xeon Processor (2 maximum)	2nd CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	LCD	Power (HS)	Announced
5463-A2x	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	00KA070	1x 8 GB	M1215	4x 2.5" SS / 8	Open bay	4x GbE	2 / 4	Optional	Optional	1x 550 W HS / 2	Sep 2014
5463-B2x	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00KA071	1x 8 GB	M1215	4x 3.5" SS / 4	Open bay	4x GbE	2 / 4	Optional	None	1x 550 W HS / 2	Sep 2014
5463-C2x	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00KA067	1x 16 GB	M1215	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	Optional	1x 550 W HS / 2	Sep 2014
5463-C4x	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00KA067	1x 16 GB	M1215	4x 3.5" HS / 4	Open bay	4x GbE	2 / 4	Optional	None	1x 550 W HS / 2	Sep 2014
5463-D2x	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00KA068	1x 16 GB	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	Optional	1x 550 W HS / 2	Sep 2014
5463-H2x	1x E5-2630L v3 8C 1.8GHz 20MB 1866MHz 55W	00KA077	1x 16 GB	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	Optional	1x 550 W HS / 2	Sep 2014
5463-F2x	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00KA069	1x 16 GB	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	Optional	1x 550 W HS / 2	Sep 2014
5463-G2x	1x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	00KA072	1x 16 GB	M5210 1GB Flash	10x 2.5" HS / 12	Open bay	4x GbE	2 / 4	None	None	1x 550 W HS / 2	Sep 2014
5463-62x	1x E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	00KA074	1x 16 GB	M5210 2GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	Optional	1x 750 W HS / 2	Sep 2014
5463-J2x	1x E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	00KA075	1x 16 GB	M5210 2GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	Optional	1x 750 W HS / 2	Sep 2014
5463-L2x	1x E5-2690 v3 12C 2.6GHz 30MB 2133MHz 135W	00KA076	1x 16 GB	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	Optional	1x 750 W HS / 2	Sep 2014
5463-M2x	1x E5-2699 v3 18C 2.3GHz 45MB 2133MHz 145W	00KF584	1x 16 GB	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Optional	Optional	1x 900 W HS / 2	Sep 2014

Components	Specification
Form factor	1U Rack.
Processor	Up to two **Intel Xeon processor E5-2600 v3** product family CPUs. Core counts 8 to **18 cores** . Core frequencies up to **2.6 GHz**. L3 cache up to **45 MB**. Two QPI links up to 9.6 GT/s each. Up to **45 MB L3** cache. Intel C612 chipset.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). Four memory channels per processor, 3 DIMMs per channel. **2133 MHz DDR4** DIMM technology. RDIMMs and LRDIMMs supported (64 GB LRDIMMs planned for 1Q/2015). Memory speed up to 2133 MHz depending on the processor and number of DIMMs installed.
Memory maximums	With LRDIMMs: **Up to 1.5 TB** with 24x 64 GB and two processors (planned) With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors
Memory protection	ECC, Chipkill (for x4 DIMMs only), memory mirroring, and memory rank sparing.
Disk drive bays	Up to **12x 2.5" hot-swap bays** (10 front mounted + 2 rear mounted), or Up to 8x 2.5" hot-swap or simple-swap bays (8 front mounted) with LCD panel, or Up to **4x 3.5" hot-swap** or simple-swap bays (4 front mounted) See Product Guide for details. Supports 512e Advanced Format HDDs.
Maximum internal storage	Up to 14.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 12 TB with 1 TB 2.5" NL SAS/SATA HDDs, or up to 11.5 TB with 960 GB 2.5" SATA SSDs, or up to 24 TB with 6 TB 3.5" NL SAS/SATA HDDs. Intermix of SAS/SATA is supported.
Storage controller	**RAID 0, 1, or 10** with either ServeRAID M5210 or M1215 12 Gbps RAID controller standard in **dedicated internal PCIe slot**. M5210 upgrades: RAID 5 or 50 with either zero-cache, 1GB cache (no battery option), 1GB or 2GB or 4GB cache with flash backup; optional RAID 6 and 60; other performance upgrades. M1215 upgrade: RAID 5 with zero-cache.
Optical drive bays	Optional, only for models with 4 or 8 drive bays. Support for DVD-ROM or Multiburner. Models with 10 front bays do not support an internal optical drive.
Tape drive bays	None.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45) using **Broadcom BCM5719** chipset. Supports Mezzanine LOM (ML2) adapters with 1GbE or 10GbE ports; requires riser card with ML2 slot.
PCI Expansion slots	Up to **four PCIe 3.0 slots**: 3 on riser cards **plus a dedicated internal RAID controller slot**. Models with 2 slots have slot 1 and RAID slot standard. Lane widths of slots on riser cards depends on riser card selected. ▶ Slot 1: PCIe 3.0 x16 or ML2; low profile, half-length ▶ Slot 2: PCIe 3.0 x16 or x8; low profile or full-height, half-length (PCIe 3.0 x16 slot requires the second processor to be installed) ▶ Slot 3: PCIe 3.0 x16 or PCIe 3.0 x8; low profile, half-length Use of 2.5" rear drive bays eliminates use of slots 1 & 2. GPU support via CTO.
Ports	*Front*: 1x USB 3.0, 1x USB 2.0 (8x 2.5" drive bay models) or 2x USB 2.0 (4x 3.5" and 10x 2.5" drive bay models), and 1x DB-15 video. *Rear*: 2x USB 3.0, 1x USB 2.0, 1x DB-15 video, 1x RJ-45 systems management, 4x RJ-45 GbE network ports. Optional 1x DB-9 serial port. *Internal*: 1x USB port for hypervisor.
Cooling	IBM Calibrated Vectored Cooling with up to eight redundant hot-swap fans (six standard, two with the second processor or with the x3550 M5 Thermal Solution Kit); dual fan zones with N+1 fan redundancy; each fan has two motors.
Power supply	Up to two redundant hot-swap 550 W, 750 W or 900 W High Efficiency Platinum AC power supplies, or 750 W High Efficiency Titanium AC power supplies.

Components	Specification
Hot-swap parts	Hard drives, power supplies, fans.
Systems management	Front-mounted **LCD status panel** (certain drive configurations only), UEFI, IBM IMM2 using Renesas SH7758, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director, IBM ToolsCenter™. Optional IMM Advanced Upgrade license for remote presence.
Security features	Power-on password, administrator password, and two Trusted Platform Modules (V2.0). Support for SED drive key management with IBM Security Key Lifecycle Manager with FoD license upgrade. Optional lockable front bezel.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Red Hat Enterprise Linux 6 and 7, SUSE Linux Enterprise Server 11, VMware vSphere 5.1 and 5.5.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware & some IBM/third-party applications.
Dimensions	Height: 43 mm (1.7 in), width: 429 mm (16.9 in), depth: 734 mm (28.9 in)
Weight	Minimum configuration: 13.8 kg (30.5 lb), maximum: 19.3 kg (42.7 lb)

Light path diagnostics LCD display panel — USB 3.0 port — Status LEDs Power button — 3x PCIe 3.0 slots (Available two-drive hot-swap cage replacing first 2 slots)

8x 2.5-inch hot-swap drive bays (10x 2.5" HS, 8x 2.5" SS, 4x 3.5" HS and 4x 3.5" SS also available) — USB 2.0 port — Optical drive — Video port — IMM port — 2x USB 3.0 ports — USB 2.0 port — 4x 1GbE ports — Video port — 2x hot-swap power supplies

Popular and system-unique options (see the model table for processor options):

Part	Description
46W0796	16GB TruDDR4™ Memory (2Rx4, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM
46W0800	32GB TruDDR4 Memory (4Rx4, 1.2V) PC417000 CL15 2133MHz LP LRDIMM
00AJ146	IBM 1.2TB 10K 6Gbps SAS 2.5" G3HS HDD
00FN228	IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD
00FK930	System x 550W High Efficiency Platinum AC Power Supply
00FK932	System x 750W High Efficiency Platinum AC Power Supply
00KA062	System x3550 M5 PCIe Riser 2, 1 CPU (2xLP,LP x8 CPU0 + LP x8 CPU0)
00KA161	COM Port Bracket
00KA059	System x3550 M5 Thermal Kit
00KA054	System x Advanced LCD Light path Kit
90Y3901	IBM Integrated Management Module Advanced Upgrade

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3550 M5* at: http://www.redbooks.ibm.com/abstracts/tips1194.html?Open

IBM System x3550 M5 Express Models

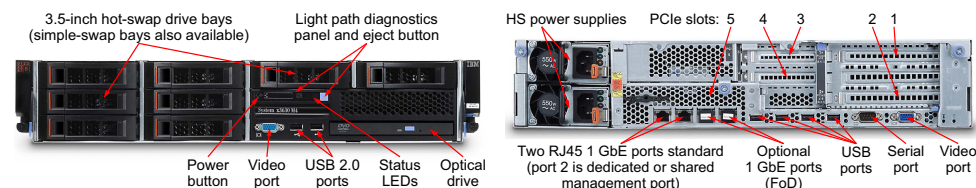| Model[1,2]	Intel Xeon Processor (2 maximum)	2nd CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	LCD	Power (HS)	Announced
United States, Canada												
5463-EAU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00KA071	1x 8 GB	M1215	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	1x 550 W HS / 2	Sep 2014
5463-EBU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00KA067	1x 16 GB	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	1x 550 W HS / 2	Sep 2014
5463-EEU	2x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	Standard	2x 16 GB	M5210 2GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	2x 550 W HS / 2	Sep 2014
5463-ECU	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00KA069	1x 16 GB	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	1x 550 W HS / 2	Sep 2014
5463-EDU	1x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	00KA072	1x 16 GB	M5210	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	1x 750 W HS / 2	Sep 2014
5463-EFU	2x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	Standard	4x 16 GB	M5210 4GB Flash	8x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	2x 550 W HS / 2	Sep 2014
Latin America												
5463-EMU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00KA071	1x 8 GB	M1215	4x 3.5" SS / 4	Open bay	4x GbE	4 / 4	Multi burner	None	1x 550 W HS / 2	Sep 2014
5463-ENU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00KA071	1x 8 GB	M5210 1GB Flash	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	4 / 4	Multi burner	Standard	2x 550 W HS / 2	Sep 2014
5463-ERU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00KA071	1x 8 GB	M1215	4x 2.5" SS / 8	Open bay	4x GbE	4 / 4	Multi burner	Standard	1x 550 W HS / 2	Sep 2014
5463-ESU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00KA067	1x 8 GB	M5210 1GB Flash	4x 2.5" SS / 8	Open bay	4x GbE	4 / 4	Multi burner	Standard	2x 550 W HS / 2	Sep 2014
5463-EOU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00KA067	1x 8 GB	M5210 1GB Flash	4x 3.5" SS / 4	Open bay	4x GbE	4 / 4	Multi burner	None	2x 550 W HS / 2	Sep 2014
5463-EPU	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00KA069	2x 16 GB	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Multi burner	Standard	2x 550 W HS / 2	Sep 2014
5463-EQU	2x E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	Standard	2x 16 GB	M5210 2GB Flash	8x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Multi burner	Standard	2x 750 W HS / 2	Sep 2014
Asia Pacific (Australia and New Zealand only)												
5463-EGM	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00KA071	1x 8 GB	M1215	4x 3.5" SS / 4	Open bay	4x GbE	4 / 4	Multi burner	None	1x 550 W HS / 2	Sep 2014
5463-EHM	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00KA071	1x 8 GB	M5210 1GB Flash	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	4 / 4	Multi burner	Standard	1x 550 W HS / 2	Sep 2014
5463-EIM	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00KA067	2x 8 GB	M1215	4x 3.5" SS / 4	Open bay	4x GbE	4 / 4	Multi burner	None	1x 550 W HS / 2	Sep 2014
5463-EJM	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00KA067	2x 8 GB	M5210 1GB Flash	4x 2.5" HS / 8	2x 300GB 10K	4x GbE	4 / 4	Multi burner	Standard	1x 750 W HS / 2	Sep 2014
5463-EKM	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00KA068	2x 8 GB	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Multi burner	Standard	1x 750 W HS / 2	Sep 2014
5463-ELM	2x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	Standard	2x 16 GB	M5210	8x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Multi burner	Standard	2x 750 W HS / 2	Sep 2014
Japan												
5463-E5J	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	00KA070	1x 8 GB	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Optional	Standard	1x 550 W HS / 2	Sep 2014
5463-E6J	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00KA071	1x 8 GB	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Optional	Standard	1x 550 W HS / 2	Sep 2014
5463-E7J	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00KA067	1x 8 GB	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	4 / 4	Optional	Standard	1x 550 W HS / 2	Sep 2014
Europe, Middle East and Africa												
5463-E1G	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	00KA070	1x 8 GB	M1215	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	1x 550 W HS / 2	Sep 2014
5463-E2G	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00KA067	1x 8 GB	M5210 1GB Flash	8x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	1x 550 W HS / 2	Sep 2014
5463-E3G	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00KA068	1x 8 GB	M5210 1GB Flash	4x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	2x 550 W HS / 2	Sep 2014
5463-E4G	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00KA069	1x 16 GB	M5210 1GB Flash	8x 2.5" HS / 8	Open bay	4x GbE	2 / 4	Multi burner	Standard	1x 550 W HS / 2	Sep 2014

Model[1]	Intel Xeon Processor (2 maximum)	Second CPU	Memory (RDIMMs)	ServeRAID	Disk bays	Disks	Network	Slots	Optical	Power	Announced
7158-A2x	1x E5-2403 4C 1.8GHz 10MB 1066MHz 80W	90Y6367	1x 4 GB 1066 MHz[a]	C105	4x 3.5" SS / 4	Open	2x GbE / 4	2 / 5	N	1x 550 W HS / 2	May 2012
7158-A4x	1x E5-2403 4C 1.8GHz 10MB 1066MHz 80W	90Y6367	1x 4 GB 1066 MHz[a]	C105	8x 3.5" SS / 8	Open	2x GbE / 4	2 / 5	Optional	1x 550 W HS / 2	May 2012
7158-B2x	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	90Y6365	1x 4 GB 1066 MHz[a]	C105	8x 3.5" HS / 8	Open	2x GbE / 4	2 / 5	Optional	1x 550 W HS / 2	May 2012
7158-B4x	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	90Y6365	1x 4 GB 1066 MHz[a]	M1115	12x 3.5" HS / 14	Open	2x GbE / 4	5 / 5	None	1x 750 W HS / 2	May 2012
7158-C2x	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	90Y6364	1x 4 GB 1333 MHz	M1115	8x 3.5" HS / 8	Open	2x GbE / 4	5 / 5	Optional	1x 550 W HS / 2	May 2012
7158-C4x[b]	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	90Y6364	1x 8 GB 1333 MHz	M5110 512 MB	8x 3.5" HS / 8	1x 500GB[b]	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	May 2012
7158-C6x[b]	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	90Y6364	1x 8 GB 1333 MHz	M5110 512 MB	12x 3.5" HS / 14	1x 500GB[b]	2x GbE / 4	5 / 5	None	1x 750 W HS / 2	May 2012

a. For models A2x, A4x, B2x, B4x the memory operates up to 1066 MHz, the memory speed of the processor. For G2x, H2x, J2x, memory operates up to 1333 MHz to match the installed DIMM, rather than 1600 MHz.
b. Models C4x and C6x include Windows Storage Server 2008 R2 Standard preload on a 500GB 7200 RPM SATA disk drive

Components	Specification
Form factor	2U Rack.
Processor	Up to two **Intel Xeon processor E5-2400** product family CPUs with eight cores (up to 2.3 GHz) or six cores (up to 2.4 GHz) or four cores (up to 2.2 GHz), one QPI link up to 8.0 GT/s, up to 1600 MHz memory speed, up to 20 MB L3 cache; Other processors available via CTO: Xeon E5-1400 and Pentium 1400 families.
Chipset	Intel C600 series.
Memory	Up to **12 DIMM sockets** (six DIMMs per processor). LRDIMMs, RDIMMs and UDIMMs supported but memory types cannot be intermixed. Memory DIMM speeds up to 1600 MHz.
Memory maximums	With LRDIMMs: **Up to 384 GB** with 12x 32 GB RDIMMs and two processors. With RDIMMs: Up to 192 GB with 12x 16 GB RDIMMs and two processors. With UDIMMs: Up to 48 GB with 12x 4 GB UDIMMs and two processors
Memory protection	ECC, Chipkill, memory mirroring, and memory rank sparing.
Disk drive bays	Up to eight 3.5" SATA simple-swap drive bays, up to eight 3.5-inch SAS/SATA hot-swap drive bays, or **up to 14x 3.5-inch SAS/SATA hot-swap drive bays** (12 on the front, 2 on the rear of the server).
Maximum internal storage	**Up to 56 TB** with 4 TB 3.5-inch NL SAS/SATA HS HDDs, up to 32 TB with 4 TB 3.5-inch SATA SS HDDs, or up to 11.2 TB with 800 GB 3.5-inch SATA HS SSDs. An intermix of SAS/SATA is supported.
RAID support	**RAID 0, 1 with C105.** RAID 0, 1, 10 with M1115 or M5110. Optional upgrades to RAID 5, 50 available for M1115. Optional upgrades to RAID 5, 50 are available for M5110 (zero-cache; 512 MB battery-backed cache; 512 MB or 1 GB flash-backed cache). Optional upgrade to RAID 6, 60 available for M5110 with caches.
Optical drive bays	One, for models with up to 8x 3.5-inch drive bays. Optional DVD or multiburner.
Tape drive bays	Optional, for models with up to eight 3.5-inch drive bays. **Tape Enablement Kit** is required to support the internal tape drive. Support for an optional DDS5 or DDS6 USB tape drives is available.
Network interfaces	Up to **four integrated Gigabit Ethernet 1000BASE-T RJ-45 ports** (two ports enabled, and an additional two ports require the optional software FoD upgrade). **Intel I350-CM2** chipset.
I/O expansion slots	Up to **five slots** in models with up to 12 drive bays, depending on the riser cards installed. The slots are as follows: ► Slot 1: PCIe 3.0 x16 (x8-wired), full-height, full-length ► Slot 2: PCIe 3.0 x16 (x8-wired); full-height, half-length ► Slot 3: PCIe 3.0 x16 (x8-wired), low-profile, half-length ► Slot 4: PCIe 3.0 x16 (x8-wired); low-profile, half-length ► Slot 5: PCIe 3.0 x8 (x4-wired); dedicated slot for ServeRAID adapter Models with only 2 slots standard have slots 1 and 2 available. Additional slot options are available for CTO configurations. Configuring 14 drives changes the slot locations and numbering.See the IBM Redbooks Product Guide for details.
Cooling	IBM Calibrated Vectored Cooling with **three redundant non-hot-swap fans**; each fan has two rotors.
Power supply	Up to **two redundant hot-swap power supplies**, either 550 W AC or 750 W HE AC or 900 W HE AC power supplies, or up to two redundant hot-swap 750W HE DC power supplies. All AC power supplies are 80 PLUS Platinum certified.
Ports	Front: Two USB 2.0 and one DB-15 video (not available on 12-bay models) Rear: Four USB 2.0, one DB-15 video, one DB-9 serial, and four RJ-45 GbE Internal: Two USB (one for embedded hypervisor, one for internal USB tape)
Hot-swap parts	Hard drives (hot-swap models), power supplies.

Components	Specification
Systems management	UEFI, IBM IMM2, Predictive Failure Analysis, light path diagnostics (basic standard, advanced optional), Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional IMM Advanced FoD Upgrade for remote presence
Security features	Power-on password, administrator's password, Trusted Platform Module (TPM).
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, 2008 R2, and 2008 (x64), Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 11,
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePac offerings: 4-hour or 2-hour response time, 8 hours 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	Height: 86 mm (3.4 in), width: 447 mm (17.6 in), depth: 749 mm (29.5 in)
Weight	Minimum configuration: 16.4 kg (36.2 lb), maximum: 28.2 kg (62.2 lb)

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3105	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
49Y1563	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
00W1301	IBM 512GB SATA 3.5" MLC HS Enterprise Value SSD
00D9034	3.5" Hot Swap Cage Assembly, Rear, 2 x 3.5"
90Y6370	USB Tape Drive Cage assembling kit
46M0902	UltraSlim Enhanced SATA Multi-Burner
81Y4481	ServeRAID M5110 SAS/SATA Controller
90Y9314	Intel I350 Embedded Dual Port GbE Activation for IBM System x (FoD)
95Y3762	Emulex Dual Port 10GbE SFP+ VFA III
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC Power Supply
94Y6669	IBM System x 750W High Efficiency Platinum AC Power Supply
41Y8298	IBM Blank USB Memory Key for VMware ESXi Downloads

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3630 M4*: http://www.redbooks.ibm.com/abstracts/tips0889.html?Open

Model[1]	Intel Xeon Processor (2 maximum)	Second CPU	Memory (RDIMMs)	ServeRAID	Disk bays	Disks	Network	Slots	Optical	Power	Announced
7158-D2x	1x E5-2430 6C 2.2GHz 15MB 1333MHz 95W	90Y6363	1x 4 GB 1333 MHz	M5110 512 MB	12x 3.5" HS / 14	Open	2x GbE / 4	5 / 5	None	1x 750 W HS / 2	May 2012
7158-F2x	1x E5-2440 6C 2.4GHz 15MB 1333MHz 95W	90Y6362	1x 4 GB 1333 MHz	M5110 512 MB[a]	12x 3.5" HS / 14	Open	2x GbE / 4	5 / 5	None	1x 750 W HS / 2	May 2012
7158-F4x	1x E5-2440 6C 2.4GHz 15MB 1333MHz 95W	90Y6362	1x 4 GB 1333 MHz	M5110 512 MB[a]	8x 3.5" HS / 8	Open	2x GbE / 4	5 / 5	Optional	1x 550 W HS / 2	May 2012
7158-G2x	1x E5-2450 8C 2.1GHz 20MB 1600MHz 95W	90Y6361	1x 4 GB 1333 MHz[a]	M5110 1 GB[a]	8x 3.5" HS / 8	Open	2x GbE / 4	5 / 5	Optional	1x 550 W HS / 2	May 2012
7158-H2x	1x E5-2470 8C 2.3GHz 20MB 1600MHz 95W	90Y6356	1x 8 GB 1333 MHz[a]	M5110 1 GB[a]	12x 3.5" HS / 14	Open	2x GbE / 4	5 / 5	None	1x 750 W HS / 2	May 2012
7158-J2x	1x E5-2450L 8C 1.8GHz 20MB 1600MHz 70W	90Y6368	1x 4 GB 1333 MHz[a]	M5110 1 GB[a]	12x 3.5" HS / 14	Open	2x GbE / 4	5 / 5	None	1x 750 W HS / 2	May 2012

a. The ServeRAID M5110 RAID controller in these models include flash-backed cache.

Components	Specification
Form factor	2U Rack.
Processor	Up to two **Intel Xeon processor E5-2400** product family CPUs with eight cores (up to 2.3 GHz) or six cores (up to 2.4 GHz) or four cores (up to 2.2 GHz), one QPI link up to 8.0 GT/s, up to 1600 MHz memory speed, up to 20 MB L3 cache; Other processors available via CTO: Xeon E5-1400 and Pentium 1400 families.
Chipset	Intel C600 series.
Memory	Up to **12 DIMM sockets** (six DIMMs per processor). LRDIMMs, RDIMMs and UDIMMs supported but memory types cannot be intermixed. Memory DIMM speeds up to 1600 MHz.
Memory maximums	With LRDIMMs: **Up to 384 GB** with 12x 32 GB RDIMMs and two processors. With RDIMMs: Up to 192 GB with 12x 16 GB RDIMMs and two processors With UDIMMs: Up to 48 GB with 12x 4 GB UDIMMs and two processors
Memory protection	ECC, Chipkill, memory mirroring, and memory rank sparing.
Disk drive bays	Up to eight 3.5" SATA simple-swap drive bays, up to eight 3.5-inch SAS/SATA hot-swap drive bays, or **up to 14x 3.5-inch SAS/SATA hot-swap drive bays** (12 on the front, 2 on the rear of the server).
Maximum internal storage	**Up to 56 TB with 4 TB 3.5" NL SATA HS HDDs**, or up to 24 TB with 3 TB 3.5" SATA SS HDDs, or up to 7.2 TB with **512 GB 3.5-inch SATA HS SSDs**. Intermix of SAS/SATA is supported.
RAID support	**RAID 0, 1 with C105**. RAID 0, 1, 10 with M1115 or M5110. Optional upgrades to RAID 5, 50 available for M1115. Optional upgrades to RAID 5, 50 are available for M5110 (zero-cache; 512 MB battery-backed cache; 512 MB or 1 GB flash-backed cache). Optional upgrade to RAID 6, 60 available for M5110 with caches.
Optical drive bays	One, for models with up to 8x 3.5-inch drive bays. Optional DVD or multiburner.
Tape drive bays	Optional, for models with up to eight 3.5-inch drive bays. **Tape Enablement Kit** is required to support the internal tape drive. Support for an optional DDS5 or DDS6 USB tape drives is available.
Network interfaces	Up to **four integrated Gigabit Ethernet 1000BASE-T RJ-45 ports** (two ports enabled, and an additional two ports require the optional software FoD upgrade). **Intel I350-CM2** chipset.
I/O expansion slots	Up to **five slots** in models with up to 12 drive bays, depending on the riser cards installed. The slots are as follows: ▶ Slot 1: PCIe 3.0 x16 (x8-wired), full-height, full-length ▶ Slot 2: PCIe 3.0 x16 (x8-wired); full-height, half-length ▶ Slot 3: PCIe 3.0 x16 (x8-wired), low-profile, half-length ▶ Slot 4: PCIe 3.0 x16 (x8-wired); low-profile, half-length ▶ Slot 5: PCIe 3.0 x8 (x4-wired); dedicated slot for ServeRAID adapter Models with only 2 slots standard have slots 1 and 2 available. Additional slot options are available for CTO configurations. Configuring 14 drives precludes use of some slots. See the IBM Redbooks Product Guide for all details.
Cooling	IBM Calibrated Vectored Cooling with **three redundant non-hot-swap fans**; each fan has two rotors.
Power supply	Up to **two redundant hot-swap power supplies**, either 550 W AC or 750 W HE AC or 900 W HE AC power supplies, or up to two redundant hot-swap 750W HE DC power supplies. All AC power supplies are 80 PLUS Platinum certified.
Ports	Front: Two USB 2.0 and one DB-15 video (not available on 12-bay models) Rear: Four USB 2.0, one DB-15 video, one DB-9 serial, and four RJ-45 GbE Internal: Two USB (one for embedded hypervisor, one for internal USB tape)
Hot-swap parts	Hard drives (hot-swap models), power supplies.

Components	Specification
Systems management	UEFI, IBM IMM2, Predictive Failure Analysis, light path diagnostics (basic standard, advanced optional), Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Optional IMM Advanced FoD Upgrade for remote presence
Security features	Power-on password, administrator's password, Trusted Platform Module (TPM).
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Operating systems supported	Microsoft Windows Server 2012, 2008 R2 and 2008, RHEL 5 and 6, SLES 10 and 11, VMware ESX 4.1 and ESXi 4.1, VMware vSphere 5.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePac offerings: 4-hour or 2-hour response time, 8 hours 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	Height: 86 mm (3.4 in), width: 447 mm (17.6 in), depth: 749 mm (29.5 in)
Weight	Minimum configuration: 16.4 kg (36.2 lb), maximum: 28.2 kg (62.2 lb)

3.5-inch hot-swap drive bays (simple-swap bays also available) — Light path diagnostics panel and eject button — HS power supplies — PCIe slots: 5 4 3 2 1

Power button — Video port — USB 2.0 ports — Status LEDs — Optical drive — Two RJ45 1 GbE ports standard (port 2 is dedicated or shared management port) — Optional 1 GbE ports (FoD) — USB ports — Serial port — Video port

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3105	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
49Y1563	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
00W1301	IBM 512GB SATA 3.5" MLC HS Enterprise Value SSD
00D9034	3.5" Hot Swap Cage Assembly, Rear, 2 x 3.5"
90Y6370	USB Tape Drive Cage assembling kit
46M0902	UltraSlim Enhanced SATA Multi-Burner
81Y4481	ServeRAID M5110 SAS/SATA Controller
90Y9314	Intel I-350 Embedded Dual Port GbE Activation for IBM System x (FoD)
95Y3762	Emulex Dual Port 10GbE SFP+ VFA III
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC Power Supply
94Y6669	IBM System x 750W High Efficiency Platinum AC Power Supply
41Y8298	IBM Blank USB Memory Key for VMware ESXi Downloads

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3630 M4*:
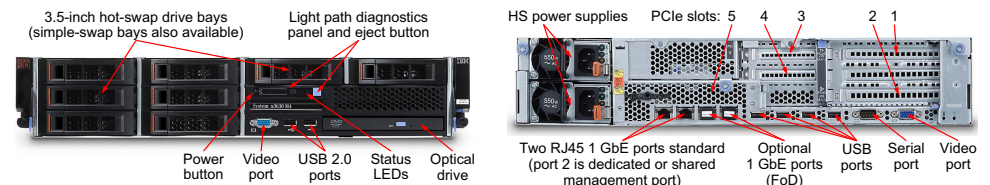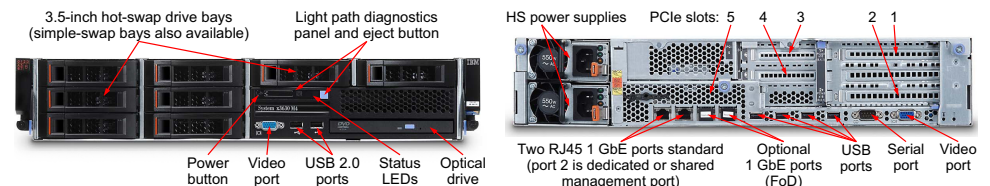http://www.redbooks.ibm.com/abstracts/tips0889.html?Open

IBM System x3630 M4 (E5-2400 v2)

Model[1]	Intel Xeon Processor (2 maximum)	2nd CPU	Memory (RDIMMs)	ServeRAID	Disk bays	Disks	Network	Slots	Optical	Power	Announced
7158-A3x	1x E5-2403 v2 4C 1.8GHz 10MB 1333MHz 80W	00J6381	1x 4GB (1333MHz)[a]	C105	4x 3.5" SS / 4	Open bay	2x GbE / 4	2 / 5	None	1x 550 W HS / 2	Jan 2014
7158-A5x	1x E5-2403 v2 4C 1.8GHz 10MB 1333MHz 80W	00J6381	1x 4GB (1333MHz)[a]	C105 8-Pack	8x 3.5" HS / 8	Open bay	2x GbE / 4	2 / 5	Optional	1x 550 W HS / 2	Jan 2014
7158-B3x	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6382	1x 4GB (1333MHz)[a]	C105 8-Pack	8x 3.5" SS / 8	Open bay	2x GbE / 4	2 / 5	Optional	1x 550 W HS / 2	Jan 2014
7158-B5x	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6382	1x 4GB (1333MHz)[a]	M1115	12x 3.5" HS / 14	Open bay	2x GbE / 4	5 / 5	None	1x 750 W HS / 2	Jan 2014
7158-C3x	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6383	1x 8GB 1600MHz	M5110	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Optional	1x 550 W HS / 2	Jan 2014
7158-D3x	1x E5-2430 v2 6C 2.5GHz 15MB 1600MHz 80W	00J6384	1x 8GB 1600MHz	M5110 512MB Flash	12x 3.5" HS / 14	Open bay	2x GbE / 4	5 / 5	None	1x 750 W HS / 2	Jan 2014
7158-F5x	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6385	1x 8GB 1600MHz	M5110 512MB Flash	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Optional	1x 550 W HS / 2	Jan 2014
7158-G3x	1x E5-2450 v2 8C 2.5GHz 20MB 1600MHz 95W	00J6386	1x 8GB 1600MHz	M5110 1GB Flash	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Optional	1x 750 W HS / 2	Jan 2014

a. The standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.

Components	Specification
Form factor	2U rack.
Processor	Up to two **Intel Xeon processor E5-2400 v2** product family processors with **10 cores** (up to 2.4 GHz), eight or six cores (**up to 2.5 GHz**), four cores (up to 2.4 GHz), one QPI link up to 8.0 GTps, up to **1600 MHz memory speed**, up to 25 MB L3 cache; or or Intel Pentium processor 1400 v2 product family processor via CTO only. Intel C600 series chipset.
Memory	Up to **12 DIMM sockets** (six DIMMs per processor). LRDIMMs, RDIMMs, and UDIMMs are supported, but memory types cannot be intermixed. DIMM speeds are up to 1600 MHz.
Memory maximums	With LRDIMMs: **Up to 384 GB** with 12x 32 GB RDIMMs and two processors. With RDIMMs: Up to 192 GB with 12x 16 GB RDIMMs and two processors. With UDIMMs: Up to 96 GB with 12x 8 GB UDIMMs and two processors
Memory protection	ECC, Chipkill, memory mirroring, and memory rank sparing.
Disk drive bays	Up to eight 3.5-inch SATA simple-swap drive bays, up to eight 3.5-inch SAS/SATA hot-swap drive bays, or **up to 14 3.5-inch SAS/SATA hot-swap drive bays**.
Maximum internal storage	**Up to 56 TB** with 4 TB 3.5-inch NL SAS/SATA HS HDDs, up to 32 TB with 4 TB 3.5-inch SATA SS HDDs, or up to 11.2 TB with 800 GB 3.5-inch SATA HS SSDs. An intermix of SAS/SATA is supported.
RAID support	**RAID 0 and 1 with C105**. RAID 0, 1, and 10 with M1115 or M5110. Upgrades to RAID 5 and 50 are available for M1115. Upgrades to RAID 5 and 50 are available for M5110 (zero-cache; 512 MB battery-backed cache; 512 MB or 1 GB flash-backed cache). RAID 6 or 60 upgrade available for M5110 with caches
Optical drive bays	One, for models with up to eight 3.5-inch drive bays. **Support for optional DVD-ROM or multiburner**.
Tape drive bays	Optional, for models with up to eight 3.5-inch drive bays. Tape Enablement Kit is required to support the internal tape drive. Support for **optional DDS5 or DDS6** USB tape drives is available.
Network interfaces	Up to **four integrated Gigabit Ethernet** 1000BASE-T RJ-45 ports with the onboard Intel I350-CM2 controller (two ports enabled, and an additional two ports require the optional software FoD upgrade to enable them).
Ports	Front: Two USB 2.0 and one DB-15 video (not available on models with 12 or 14 drive bays). Rear: Four USB 2.0, one DB-15 video, one DB-9 serial, and four RJ-45 GbE network ports. Internal: Two USB ports (hypervisor, USB tape drive).
I/O expansion slots	Up to **five slots** in models with up to 12 drive bays, depending on the riser cards installed. The slots are as follows: ► Slot 1: PCIe 3.0 x16 (x8-wired), full-height, full-length ► Slot 2: PCIe 3.0 x16 (x8-wired); full-height, half-length ► Slot 3: PCIe 3.0 x16 (x8-wired), low-profile, half-length ► Slot 4: PCIe 3.0 x16 (x8-wired), low-profile, half-length ► Slot 5: PCIe 3.0 x8 (x4-wired); dedicated slot for ServeRAID adapter Models with only 2 slots standard have slots 1 and 2 available. Additional slot options are available for CTO configurations. Configuring 14 drives changes the slot locations and numbering.See the IBM Redbooks Product Guide for details.
Cooling	IBM Calibrated Vectored Cooling with three redundant non-hot-swap fans; each fan has two motors.
Power supply	Up to **two redundant hot-swap** 550 W HE AC, 750 W HE AC, or 900 W HE AC power supplies (all AC power supplies are 80 PLUS Platinum certified). Up two redundant hot-swap 750 W HE DC power supplies available via CTO.

Components	Specification
Hot-swap parts	Hard drives (hot-swap models), power supplies.
Systems management	UEFI, IBM Integrated Management Module II (IMM2), Predictive Failure Analysis, light path diagnostics (basic standard, advanced optional), Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide. Optional IMM Advanced FoD Upgrade for remote presence (graphics, keyboard and mouse, and virtual media).
Security features	Power-on password, administrator password, Trusted Platform Module (TPM)
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, 2008 R2, and 2008 (x64), Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 11, VMware vSphere (ESXi) 5.0, 5.1, and 5.5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePac offerings: 4-hour or 2-hour response time, 8 hours fix time, one-year or two-year warranty extension, remote technical support for IBM hardware and selected IBM and 3rd-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 86 mm (3.4 in.), width: 447 mm (17.6 in.), depth: 749 mm (29.5 in.)
Weight	Minimum configuration: 16.4 kg (36.2 lb), maximum: 28.2 kg (62.2 lb)

3.5-inch hot-swap drive bays (simple-swap bays also available) — Light path diagnostics panel and eject button — HS power supplies — PCIe slots: 5 4 3 2 1

Power button — Video port — USB 2.0 ports — Status LEDs — Optical drive

Two RJ45 1 GbE ports standard (port 2 is dedicated or shared management port) — Optional 1 GbE ports (FoD) — USB ports — Serial port — Video port

Popular and system-unique options (see the model table for processor options):

Part	Description
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
00AJ475	S3500 800GB SATA 3.5" MLC HS Enterprise Value SSD
00D9034	3.5" Hot Swap Cage Assembly, Rear, 2 x 3.5"
90Y6370	USB Tape Drive Cage assembling kit
46M0902	UltraSlim Enhanced SATA Multi-Burner
81Y4481	ServeRAID M5110 SAS/SATA Controller
90Y9314	Intel I350 Embedded Dual Port GbE Activation for IBM System x (FoD)
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC Power Supply
94Y6669	IBM System x 750W High Efficiency Platinum AC Power Supply

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3630 M4* (E5-2400 v2): http://www.redbooks.ibm.com/abstracts/tips1145.html?Open

IBM System x3630 M4 (E5-2400 v2) Express Models

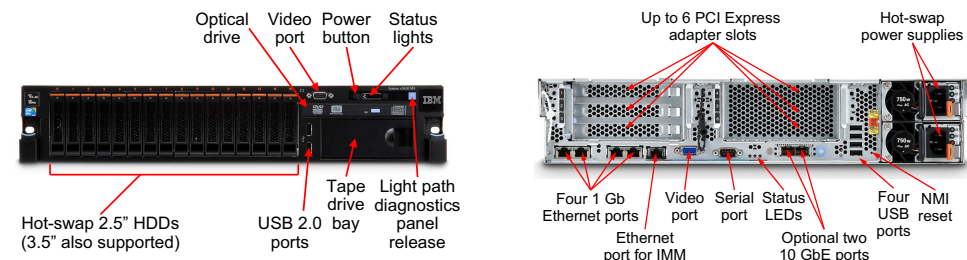| Model[1,2]	Processor	2nd CPU	Memory	RAID	Disk bays	Disks	Network	Slots	Optical	Power	Announced
United States											
7158-EDU	1x E5-2403 v2 4C 1.8GHz 10MB 1333MHz 80W	00J6381	1x 8GB (1333MHz)[a]	M5110	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
7158-EEU	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6383	1x 8GB 1600MHz	M5110	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
7158-EFU	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6385	1x 8GB 1600MHz	M5110 1GB Flash	12x 3.5" HS / 14	Open bay	2x GbE / 4	5 / 5	None	2x 750 W HS / 2	Jan 2014
Canada											
7158-EGx	2x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6385	4x 16GB 1600MHz	M5110 1GB Flash	12x 3.5" HS / 14	Open bay	2x GbE / 4	5 / 5	None	2x 750 W HS / 2	Jan 2014
Europe											
7158-EEG	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6383	1x 8GB 1600MHz	M5110	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
7158-EHG	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6382	1x 8GB (1333MHz)[a]	M5110	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
Central and Eastern Europe (CEE) and Middle East and Africa (MEA)											
7158-EJG	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6382	1x 8GB (1333MHz)[a]	M1115	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
Russia/Commonwealth of Independent States (CIS)											
7158-EEG	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6383	1x 8GB 1600MHz	M5110	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
7158-EHG	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6382	1x 8GB (1333MHz)[a]	M5110	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
Latin America (Brazil only)											
7158-EQU	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6383	1x 8GB 1600MHz	M1115	8x 3.5" HS / 8	2x 1TB 7.2K	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
7158-ERU	1x E5-2420 v2 6C 2.2GHz 15MB 1600MHz 80W	00J6383	1x 8GB 1600MHz	M1115	8x 3.5" HS / 8	2x 600GB 15K	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
7158-ETU	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6385	1x 8GB 1600MHz	M5110	8x 3.5" HS / 8	2x 1TB 7.2K	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
7158-EUU	1x E5-2440 v2 8C 1.9GHz 20MB 1600MHz 95W	00J6385	1x 8GB 1600MHz	M5110	8x 3.5" HS / 8	2x 600GB 15K	2x GbE / 4	5 / 5	Multiburner	1x 550 W HS / 2	Jan 2014
Japan											
7158-EZx	1x E5-2407 v2 4C 2.4GHz 10MB 1333MHz 80W	00J6382	1x 4GB (1333MHz)[a]	M5110 512MB Flash	8x 3.5" HS / 8	Open bay	2x GbE / 4	5 / 5	Optional	1x 550 W HS / 2	Jan 2014

a. The standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.

IBM System x3650 M4 (E5-2600)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Slots	Optical	Power	Announced
7915-A2x	1x Xeon E5-2603 4C 1.8 GHz 10 MB 1066 MHz 80 W	69Y5323	1x 4 GB	M5110e	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 550 W	Mar 2012
7915-B2x	1x Xeon E5-2609 4C 2.4 GHz 10 MB 1066 MHz 80 W	69Y5325	1x 4 GB	M5110e	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 550 W	Mar 2012
7915-C2x	1x Xeon E5-2620 6C 2.0 GHz 15 MB 1333 MHz 95 W	69Y5326	1x 8 GB	M5110e	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 550 W	Mar 2012
7915-C4x	1x Xeon E5-2620 6C 2.0 GHz 15 MB 1333 MHz 95 W	69Y5326	1x 8 GB	M5110e	6x 3.5" HS / 6	Optional	4x GbE	3 / 6	Optional	1x 550 W	Mar 2012
7915-D2x	1x Xeon E5-2630 6C 2.3 GHz 15 MB 1333 MHz 95 W	69Y5327	1x 8 GB	M5110e 512-MB Flash	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 750 W	Mar 2012
7915-F2x	1x Xeon E5-2640 6C 2.5 GHz 15 MB 1333 MHz 95 W	69Y5328	1x 8 GB	M5110e 512-MB Flash	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 750 W	Mar 2012
7915-G2x	1x Xeon E5-2650 8C 2.0 GHz 20 MB 1600 MHz 95 W	69Y5329	1x 8 GB	M5110e 1 GB Flash	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 750 W	Mar 2012
7915-52x	1x Xeon E5-2650L 8C 1.8 GHz 20 MB 1600 MHz 70 W	69Y5336	1x 8 GB	M5110e 1 GB Flash	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 550 W	Mar 2012
7915-H2x	1x Xeon E5-2660 8C 2.2 GHz 20 MB 1600 MHz 95 W	69Y5330	1x 8 GB	M5110e 1 GB Flash	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 750 W	Mar 2012
7915-62x	1x Xeon E5-2665 8C 2.4 GHz 20 MB 1600 MHz 115 W	94Y6687	1x 8 GB	M5110e 1 GB Flash	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 750 W	Mar 2012
7915-J2x	1x Xeon E5-2670 8C 2.6 GHz 20 MB 1600 MHz 115 W	94Y6602	1x 8 GB	M5110e 1 GB Flash	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 750 W	Mar 2012
7915-L2x	1x Xeon E5-2680 8C 2.7 GHz 20 MB 1600 MHz 130 W	69Y5331	1x 8 GB	M5110e 1 GB Flash	8x 2.5" HS / 16	Optional	4x GbE	3 / 6	Optional	1x 900 W	Mar 2012

Components	Specification
Form factor	**2U rack**.
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight cores (up to 2.9 GHz) or six cores (up to 2.9 GHz) or quad-cores (up to 3.3 GHz). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz of memory speed. Up to 20 MB L3 cache.
Chip set	Intel C602J.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). RDIMMs, UDIMMs, HCDIMMs (HyperCloud,) and LRDIMMs supported but memory types cannot be intermixed. **Memory speed up to 1600 MHz**.
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 64 GB with 16x 4 GB UDIMMs and two processors With HCDIMMs: Up to 768 GB with 24x 32 GB HCDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	**Up to 32 1.8" SSD bays**, or **up to 16 2.5" hot-swap SAS/SATA bays** or up to six 3.5" hot-swap SAS/SATA bays, or up to six 3.5" Simple Swap SATA bays.
Maximum internal storage	Up to 14.4 TB with 900 GB 2.5" SAS HDDs, up to 16 TB with 1 TB 2.5" NL SAS/SATA HDDs, or **up to 24 TB with 4 TB 3.5" NL SATA HDDs**.
RAID support	RAID 0, 1, or 10 with integrated ServeRAID M5110e; optional upgrades to RAID 5 and 50 are available (zero-cache; 512-MB battery-backed cache; 512-MB or 1 GB flash-backed cache). Optional upgrade to RAID 6 and 60 is available.
Optical drive bays	One with support for DVD-ROM or multiburner. Separate bay.
Tape drive bays	Optional Tape Enablement Kit is available to support one DDS5, DDS6, or RDX internal USB tape drive.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45). Two embedded 10 GbE ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on an **optional 10 GbE mezzanine card** (does not use a PCIe slot). **Intel I350AM4**.
PCI expansion slots	**Up to six slots** depending on the riser cards installed. The slots are as follows: ▶ Slot 1: PCIe 3.0 x8; full height, full length ▶ Slot 2: PCIe 3.0 x8; full height, half length ▶ Slot 3: PCIe 3.0 x8; full height, half length ▶ Slot 4: Optional, requires second processor and second riser card ▶ Slot 5: Optional, requires second processor and second riser card ▶ Slot 6: Optional, requires second processor and second riser card Optional riser cards available with PCIe x16, PCIe x8 or PCI-X slots.
Ports	Two USB 2.0 and one DB-15 video on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. Two internal USB ports (for embedded hypervisor and internal tape drive).
Cooling	IBM Calibrated Vectored Cooling with up to four N+N redundant hot swap fans (three standard, additional fan with second processor), each fan has 2 motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**), -48V dc (750 W) option for CTO.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IBM IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Hot-swap parts	Hard disk drives, power supplies, and fans.

Components	Specification
Systems management	UEFI, IBM IMM2, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide. Optional IMM Advanced Upgrade software feature for remote presence.
Security features	Power-on password, administrator password, and Trusted Platform Module.
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 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and some IBM and third-party applications.
Dimensions	Height: 86 mm (3.4 in), width: 445 mm (17.5 in), depth: 746 mm (29.4 in).
Weight	Minimum configuration: 25 kg (55 lb), maximum: 30 kg (65 lb).

Optical drive / Video port / Power button / Status lights
Up to 6 PCI Express adapter slots / Hot-swap power supplies
Hot-swap 2.5" HDDs (3.5" also supported)
Tape drive bay / Light path diagnostics panel release
USB 2.0 ports
Four 1 Gb Ethernet ports / Ethernet port for IMM / Video port / Serial port / Status LEDs / Optional two 10 GbE ports / Four USB ports / NMI reset

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1559	4 GB (1x 4 GB, 1Rx4, 1.5 V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
90Y3109	8 GB (1x 8 GB, 2Gb, 2Rx4,1.5V) PC3-12800 DDR3-1600 LP RDIMM
49Y1563	16 GB (1x 16 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3105	32 GB (1x 32 GB, 4Rx4, 1.35 V) PC 3L-10600 CL9 ECC DDR3 1333 MHz LP LRDIMM
69Y5319	x3650 M4 Plus 8x 2.5" HS HDD Assembly Kit with Expander
69Y5320	x3650 M4 Tape Enablement Kit
69Y5321	x3650 M4 PCIe Gen-III Riser Card (1 x8 FH/FL + 2 x8 FH/HL Slots)
90Y6456	Emulex Dual Port 10GbE SFP+ Embedded VFA III for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC power supply
94Y6669	IBM System x 750W High Efficiency Platinum AC power supply
90Y3901	IBM Integrated Management Module Advanced Upgrade

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3650 M4* at:
http://www.redbooks.ibm.com/abstracts/tips0850.html?Open

Model[1]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Slots	Optical	Power	Announced
7915-32x	1x E5-2643 4C 3.3GHz 10MB 1600MHz 130W	94Y6604	1x 4 GB	M5110e	8 / 16 2.5" HS	Open	4	3 / 6	Open	1x 900W	Aug 2012
7915-M2x	1x E5-2690 8C 2.9GHz 20MB 1600MHz 135W	94Y6685	1x 4 GB	M5110e	8 / 16 2.5" HS	Open	4	3 / 6	Open	1x 900W	Aug 2012

Components	Specification
Form factor	**2U rack**.
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight cores (up to 2.9 GHz) or six cores (up to 2.9 GHz) or quad-cores (up to 3.3 GHz). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz of memory speed. Up to 20 MB L3 cache.
Chip set	Intel C602J.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). RDIMMs, UDIMMs, HCDIMMs (HyperCloud,) and LRDIMMs supported but memory types cannot be intermixed. **Memory speed up to 1600 MHz**.
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 64 GB with 16x 4 GB UDIMMs and two processors With HCDIMMs: Up to 768 GB with 24x 32 GB HCDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	**Up to 32 1.8" SSD bays**, or **up to 16 2.5" hot-swap SAS/SATA bays** or up to six 3.5" hot-swap SAS/SATA bays, or up to six 3.5" Simple Swap SATA bays.
Maximum internal storage	Up to 14.4 TB with 900 GB 2.5" SAS HDDs, up to 16 TB with 1 TB 2.5" NL SAS/SATA HDDs, or **up to 24 TB with 4 TB 3.5" NL SATA HDDs**.
RAID support	RAID 0, 1, or 10 with integrated ServeRAID M5110e; optional upgrades to RAID 5 and 50 are available (zero-cache; 512-MB battery-backed cache; 512-MB or 1 GB flash-backed cache). Optional upgrade to RAID 6 and 60 is available.
Optical drive bays	One with support for DVD-ROM or multiburner. Separate bay.
Tape drive bays	Optional Tape Enablement Kit is available to support one DDS5, DDS6, or RDX internal USB tape drive.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45). Two embedded 10 GbE ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on an **optional 10 GbE mezzanine card** (does not use a PCIe slot). **Intel I350AM4**.
PCI expansion slots	**Up to six slots** depending on the riser cards installed. The slots are as follows: ▶ Slot 1: PCIe 3.0 x8; full height, full length ▶ Slot 2: PCIe 3.0 x8; full height, half length ▶ Slot 3: PCIe 3.0 x8; full height, half length ▶ Slot 4: Optional, requires second processor and second riser card ▶ Slot 5: Optional, requires second processor and second riser card ▶ Slot 6: Optional, requires second processor and second riser card Optional riser cards available with PCIe x16, PCIe x8 or PCI-X slots.
Ports	Two USB 2.0 and one DB-15 video on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. Two internal USB ports (for embedded hypervisor and internal tape drive).
Cooling	IBM Calibrated Vectored Cooling with up to four N+N redundant hot swap fans (three standard, additional fan with second processor), each fan has 2 motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**), -48V dc (750 W) option for CTO.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IBM IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Systems management	UEFI, IBM IMM2, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide. Optional IMM Advanced Upgrade software feature for remote presence.
Security features	Power-on password, administrator password, and Trusted Platform Module.
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 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and some IBM and third-party applications.
Dimensions	Height: 86 mm (3.4 in), width: 445 mm (17.5 in), depth: 746 mm (29.4 in).
Weight	Minimum configuration: 25 kg (55 lb), maximum: 30 kg (65 lb).

Popular and system-unique options (see the model table for processor options):

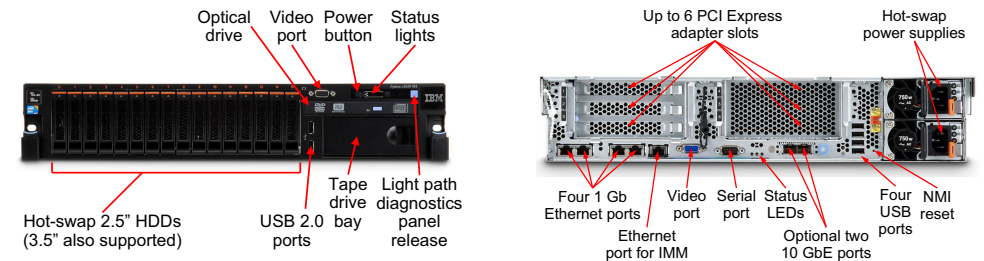| Part	Description
49Y1559	4 GB (1x 4 GB, 1Rx4, 1.5 V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
90Y3109	8 GB (1x 8 GB, 2Gb, 2Rx4,1.5V) PC3-12800 DDR3-1600 LP RDIMM
49Y1563	16 GB (1x 16 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3105	32 GB (1x 32 GB, 4Rx4, 1.35 V) PC 3L-10600 CL9 ECC DDR3 1333 MHz LP LRDIMM
69Y5319	x3650 M4 Plus 8x 2.5" HS HDD Assembly Kit with Expander
69Y5320	x3650 M4 Tape Enablement Kit
69Y5321	x3650 M4 PCIe Gen-III Riser Card (1 x8 FH/FL + 2 x8 FH/HL Slots)
90Y6456	Emulex Dual Port 10GbE SFP+ Embedded VFA III for IBM System x
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC power supply
94Y6669	IBM System x 750W High Efficiency Platinum AC power supply
90Y3901	IBM Integrated Management Module Advanced Upgrade

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3650 M4* at: http://www.redbooks.ibm.com/abstracts/tips0850.html?Open

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	Power	Announced
7915-23x	1x E5-2637 v2 4C 3.5GHz 15MB 1866MHz 130W	46W4362	1x 8GB 1866MHz	M5110e	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 900W / 2	Sep 2013
7915-33x	1x E5-2643 v2 6C 3.5GHz 25MB 1866MHz 130W	46W4371	1x 8GB 1866MHz	M5110e	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 900W / 2	Sep 2013
7915-43x	1x E5-2667 v2 8C 3.3GHz 25MB 1866MHz 130W	46W4372	1x 8GB 1866MHz	M5110e	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 900W / 2	Sep 2013
7915-53x	1x E5-2650L v2 10C 1.7GHz 25MB 1600MHz 70W	46W4375	1x 8GB 1600MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-73x	1x E5-2695 v2 12C 2.4GHz 30MB 1866MHz 115W	46W4373	1x 8GB 1866MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 900W / 2	Sep 2013
7915-83x	1x E5-2697 v2 12C 2.7GHz 30MB 1866MHz 130W	46W4374	1x 8GB 1866MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 900W / 2	Sep 2013
7915-A3x	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W4360	1x 4GB (1333MHz)[a]	M5110e	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-B3x	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W4361	1x 4GB (1333MHz)[a]	M5110e	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 550W / 2	Sep 2013

a. For models A3x and B3x, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed

Components	Specification
Form factor	**2U rack**.
Processor	Up to two **Intel Xeon processor E5-2600 v2** product family CPUs with **12 cores** (up to 2.7 GHz) or ten cores (up to 3.0 GHz) or eight cores (up to 3.3 GHz) or six cores (up to 3.5 GHz) or four cores (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. Up to **1866 MHz memory speed**. Up to 30 MB L3 cache.
Chip set	Intel C602J.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). RDIMMs and UDIMMs are supported. Support for HyperCloud DIMMs and LRDIMMs (Load Reduced DIMMs) is planned for later in 2013. Memory types cannot be intermixed. **Memory speed up to 1866 MHz**.
Memory maximums	With HCDIMMs (planned): **Up to 768 GB** with 24x 32 GB and two processors With LRDIMMs (planned): **Up to 768 GB** with 24x 32 GB and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 128 GB with 16x 8 GB UDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	**Up to 32 1.8" SSD bays**, or **up to 16 2.5" hot-swap SAS/SATA bays** or up to six 3.5" hot-swap SAS/SATA bays, or up to six 3.5" Simple Swap SATA bays.
Maximum internal storage	Up to 14.4 TB with 900 GB 2.5" SAS HDDs, up to 16 TB with 1 TB 2.5" NL SAS/SATA HDDs, or **up to 24 TB with 4 TB 3.5" NL SATA HDDs**.
RAID support	RAID 0, 1, or 10 with integrated ServeRAID M5110e; optional upgrades to RAID 5 and 50 are available (zero-cache; 512-MB battery-backed cache; 512-MB or 1 GB flash-backed cache). Optional upgrade to RAID 6 and 60 is available.
Optical drive bays	One with support for DVD-ROM or multiburner. Separate bay.
Tape drive bays	Optional Tape Enablement Kit is available to support one DDS5, DDS6, or RDX internal USB tape drive.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45). Two embedded 10 GbE ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on an **optional 10 GbE mezzanine card** (does not use a PCIe slot). **Intel I350AM4**.
PCI expansion slots	**Up to six slots** depending on the riser cards installed. The slots are as follows: ▶ Slot 1: PCIe 3.0 x8; full height, full length ▶ Slot 2: PCIe 3.0 x8; full height, half length ▶ Slot 3: PCIe 3.0 x8; full height, half length ▶ Slot 4: Optional, requires second processor and second riser card ▶ Slot 5: Optional, requires second processor and second riser card ▶ Slot 6: Optional, requires second processor and second riser card Optional riser cards available with PCIe x16, PCIe x8 or PCI-X slots.
Ports	Two USB 2.0 and one DB-15 video on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. Two internal USB ports (for embedded hypervisor and internal tape drive).
Cooling	IBM Calibrated Vectored Cooling with up to four N+N redundant hot swap fans (three standard, additional fan with second processor), each fan has 2 motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**), -48V dc (750 W) option for CTO.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IBM IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Hot-swap parts	Hard disk drives, power supplies, and fans.

Components	Specification
Systems management	UEFI, IBM IMM2, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide. Optional IMM Advanced Upgrade software feature for remote presence.
Security features	Power-on password, administrator password, and Trusted Platform Module.
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 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and some IBM and third-party applications.
Dimensions	Height: 86 mm (3.4 in), width: 445 mm (17.5 in), depth: 746 mm (29.4 in).
Weight	Minimum configuration: 25 kg (55 lb), maximum: 30 kg (65 lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
46W0767	32GB (1x32GB,1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP HyperCloud DIMM
69Y5319	x3650 M4 Plus 8x 2.5" HS HDD Assembly Kit with Expander
69Y5320	x3650 M4 Tape Enablement Kit
69Y5321	x3650 M4 PCIe Gen-III Riser Card (1 x8 FH/FL + 2 x8 FH/HL Slots)
90Y6456	Emulex Dual Port 10GbE SFP+ Embedded VFA III for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC power supply
94Y6669	IBM System x 750W High Efficiency Platinum AC power supply
90Y3901	IBM Integrated Management Module Advanced Upgrade

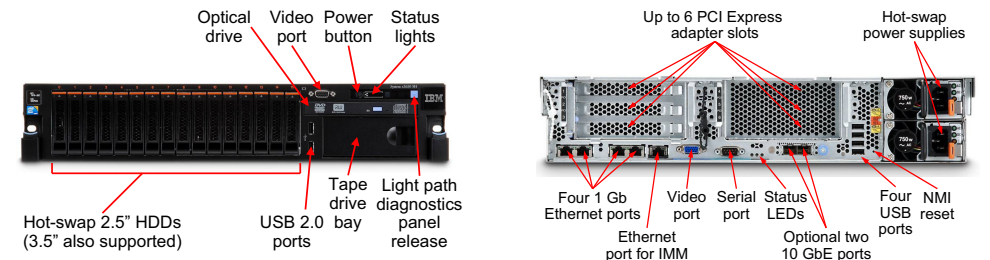For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3650 M4* at: http://www.redbooks.ibm.com/abstracts/tips0850.html?Open

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	Power	Announced
7915-C3x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB 1600MHz	M5110e	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-C5x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB 1600MHz	M5110e	6x 3.5" HS / 6	Open	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-D3x	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W4364	1x 8GB 1600MHz	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-F3x	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W4367	1x 8GB 1600MHz	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-G3x	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W4365	1x 8GB 1866MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 750W / 2	Sep 2013
7915-H3x	1x E5-2660 v2 10C 2.2GHz 25MB 1866MHz 95W	46W4366	1x 8GB 1866MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 750W / 2	Sep 2013
7915-J3x	1x E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	46W4369	1x 8GB 1866MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 750W / 2	Sep 2013
7915-L3x	1x E5-2680 v2 10C 2.8GHz 25MB 1866MHz 115W	46W4370	1x 8GB 1866MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 900W / 2	Sep 2013
7915-M3x	1x E5-2690 v2 10C 3.0GHz 25MB 1866MHz 130W	46W4377	1x 8GB 1866MHz	M5110e	8x 2.5" HS / 16	Open	4	3 / 6	Optional	1x 900W / 2	Sep 2013

Components	Specification
Form factor	**2U rack**.
Processor	Up to two **Intel Xeon processor E5-2600 v2** product family CPUs with **12 cores** (up to 2.7 GHz) or ten cores (up to 3.0 GHz) or eight cores (up to 3.3 GHz) or six cores (up to 3.5 GHz) or four cores (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. Up to **1866 MHz memory speed**. Up to 30 MB L3 cache.
Chip set	Intel C602J.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). RDIMMs and UDIMMs are supported. Support for HyperCloud DIMMs and LRDIMMs (Load Reduced DIMMs) is planned for later in 2013. Memory types cannot be intermixed. **Memory speed up to 1866 MHz**.
Memory maximums	With HCDIMMs (planned): **Up to 768 GB** with 24x 32 GB and two processors With LRDIMMs (planned): **Up to 768 GB** with 24x 32 GB and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 128 GB with 16x 8 GB UDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	**Up to 32 1.8" SSD bays**, or **up to 16 2.5" hot-swap SAS/SATA bays** or up to six 3.5" hot-swap SAS/SATA bays, or up to six 3.5" Simple Swap SATA bays.
Maximum internal storage	Up to 14.4 TB with 900 GB 2.5" SAS HDDs, up to 16 TB with 1 TB 2.5" NL SAS/SATA HDDs, or **up to 24 TB with 4 TB 3.5" NL SATA HDDs**.
RAID support	RAID 0, 1, or 10 with integrated ServeRAID M5110e; optional upgrades to RAID 5 and 50 are available (zero-cache; 512-MB battery-backed cache; 512-MB or 1 GB flash-backed cache). Optional upgrade to RAID 6 and 60 is available.
Optical drive bays	One with support for DVD-ROM or multiburner. Separate bay.
Tape drive bays	Optional Tape Enablement Kit is available to support one DDS5, DDS6, or RDX internal USB tape drive.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45). Two embedded 10 GbE ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on an **optional 10 GbE mezzanine card** (does not use a PCIe slot). **Intel I350AM4**.
PCI expansion slots	**Up to six slots** depending on the riser cards installed. The slots are as follows: ▶ Slot 1: PCIe 3.0 x8; full height, full length ▶ Slot 2: PCIe 3.0 x8; full height, half length ▶ Slot 3: PCIe 3.0 x8; full height, half length ▶ Slot 4: Optional, requires second processor and second riser card ▶ Slot 5: Optional, requires second processor and second riser card ▶ Slot 6: Optional, requires second processor and second riser card Optional riser cards available with PCIe x16, PCIe x8 or PCI-X slots.
Ports	Two USB 2.0 and one DB-15 video on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. Two internal USB ports (for embedded hypervisor and internal tape drive).
Cooling	IBM Calibrated Vectored Cooling with up to four N+N redundant hot swap fans (three standard, additional fan with second processor), each fan has 2 motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**), -48V dc (750 W) option for CTO.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IBM IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Hot-swap parts	Hard disk drives, power supplies, and fans.

Components	Specification
Systems management	UEFI, IBM IMM2, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide. Optional IMM Advanced Upgrade software feature for remote presence.
Security features	Power-on password, administrator password, and Trusted Platform Module.
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 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and some IBM and third-party applications.
Dimensions	Height: 86 mm (3.4 in), width: 445 mm (17.5 in), depth: 746 mm (29.4 in).
Weight	Minimum configuration: 25 kg (55 lb), maximum: 30 kg (65 lb).

Popular and system-unique options (see the model table for processor options):

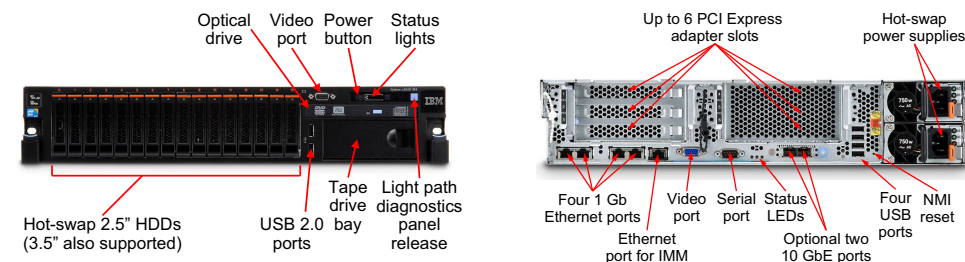| Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
46W0767	32GB (1x32GB,1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP HyperCloud DIMM
69Y5319	x3650 M4 Plus 8x 2.5" HS HDD Assembly Kit with Expander
69Y5320	x3650 M4 Tape Enablement Kit
69Y5321	x3650 M4 PCIe Gen-III Riser Card (1 x8 FH/FL + 2 x8 FH/HL Slots)
90Y6456	Emulex Dual Port 10GbE SFP+ Embedded VFA III for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC power supply
94Y6669	IBM System x 750W High Efficiency Platinum AC power supply
90Y3901	IBM Integrated Management Module Advanced Upgrade

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3650 M4* at:
http://www.redbooks.ibm.com/abstracts/tips0850.html?Open

IBM System x3650 M4 (E5-2600 v2) Express Models

Model[1,2]	Processor	2nd CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	Power	Announced
United States, Canada, Latin America											
7915-EFU	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W4361	1x 8GB (1333MHz)[a]	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Sep 2013
7915-EHU	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W4367	1x 8GB 1600MHz	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Sep 2013
Latin America (Brazil only)											
7915-EPU	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB 1600MHz	M5110e	8x 2.5" HS / 16	2x 300GB 10K	4	3 / 6	Multiburner	2x 550W / 2	Sep 2013
7915-EQU	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W4367	2x 8GB 1600MHz	M5110e	8x 2.5" HS / 16	2x 300GB 10K	4	3 / 6	Multiburner	2x 550W / 2	Sep 2013
Asia Pacific											
7915-ELC	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W4360	1x 8GB (1333MHz)[b]	M5110e	8x 2.5" HS / 16	2x 300GB 10K	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-EOC	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W4360	1x 8GB (1333MHz)[b]	M5110e	8x 2.5" HS / 16	2x 300GB 15K	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-ERC	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W4361	1x 8GB (1333MHz)[b]	M5110e	8x 2.5" HS / 16	2x 300GB 10K	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-ESC	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W4361	1x 8GB (1333MHz)[b]	M5110e	8x 2.5" HS / 16	2x 300GB 15K	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-ETC	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB (1600MHz)[c]	M5110e	8x 2.5" HS / 16	2x 300GB 10K	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-EUC	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB (1600MHz)[c]	M5110e	8x 2.5" HS / 16	2x 300GB 15K	4	3 / 6	Optional	1x 550W / 2	Sep 2013
7915-EWC	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W4365	1x 8GB 1600MHz[d]	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Optional	2x 750W / 2	Sep 2013
Europe Integrated Operating Team (IOT)											
7915-E6G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB 1600MHz	M5110e	8x 2.5" HS / 16	2x 300GB 10K	4	3 / 6	Multiburner	2x 550W / 2	Sep 2013
7915-E7G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB 1600MHz	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Sep 2013
7915-E8G	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W4364	1x 8GB 1600MHz	M5110e 512MB Flash	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Sep 2013
7915-E9G	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W4367	1x 8GB 1600MHz	M5110e 512MB Flash	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 750W / 2	Sep 2013
7915-K9G	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W4365	2x 8GB 1866MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open bay	4	3 / 6	Optional	1x 750W / 2	Dec 2013
7915-KAG	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W4360	1x 4GB (1333MHz)[a]	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Jan 2014
Central and Eastern Europe (CEE) and Middle East and Africa (MEA)											
7915-E6G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB 1600MHz	M5110e	8x 2.5" HS / 16	2x 300GB 10K	4	3 / 6	Multiburner	2x 550W / 2	Sep 2013
7915-E8G	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W4364	1x 8GB 1600MHz	M5110e 512MB Flash	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Sep 2013
7915-E9G	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W4367	1x 8GB 1600MHz	M5110e 512MB Flash	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 750W / 2	Sep 2013
7915-K3G	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W4361	1x 8GB (1333MHz)[a]	M5110e 512MB Flash	8x 2.5" HS / 16	Open bay	4	3 / 6	Optional	1x 550W / 2	Dec 2013
7915-K9G	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W4365	2x 8GB 1866MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open bay	4	3 / 6	Optional	1x 750W / 2	Dec 2013
7915-KAG	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W4360	1x 4GB (1333MHz)[a]	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Jan 2014
Russia/Commonwealth of Independent States (CIS)											
7915-E7G	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB 1600MHz	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Sep 2013
7915-E8G	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W4364	1x 8GB 1600MHz	M5110e 512MB Flash	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Sep 2013
7915-K9G	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W4365	2x 8GB 1866MHz	M5110e 1GB Flash	8x 2.5" HS / 16	Open bay	4	3 / 6	Optional	1x 750W / 2	Dec 2013
7915-KAG	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W4360	1x 4GB (1333MHz)[a]	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	1x 550W / 2	Jan 2014
Australia/New Zealand											
7915-DDM	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W4361	1x 8GB (1333MHz)[a]	M5110e 512MB Flash	8x 2.5" HS / 16	2x 300GB 10K	4	3 / 6	Optional	1x 550W / 2	Jul 2014
7915-FFM	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4363	1x 8GB 1600MHz	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	2x 550W / 2	Jul 2014
7915-GGM	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W4365	1x 16GB 1600MHz	M5110e	8x 2.5" HS / 16	Open bay	4	3 / 6	Multiburner	2x 750W / 2	Jul 2014

a. For these models, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.
b. For these models, the standard DIMM is rated at 1866 MHz, but operates at up to 1333 MHz to match the processor memory speed.
c. For models ETC and EUC, the standard DIMM is rated at 1866 MHz, but operates at up to 1600 MHz to match the processor memory speed.
d. For model EWC, the processor memory speed is rated at 1866 MHz, but operates at up to 1600 MHz to match the rated speed of the installed DIMM.

IBM System x3650 M4 BD

Model[1]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Onboard Ethernet	Slots std/max	DVD	Power (2 max)	Announced
5466-A2x	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	00AL138	1x 8GB (1333MHz)[a]	M5110	12x 3.5" HS / 14	Open	3xGbE, 2x10GbE[b]	3 / 3	None	1x 750W HS	Jan 2014
5466-A4x	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	00AL138	1x 8GB (1333MHz)[a]	M5110	12x 3.5" HS / 14	Open	3x GbE	3 / 3	None	1x 750W HS	Jan 2014
5466-B2x	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	00AL139	1x 8GB (1333MHz)[a]	M5110 512(f)[c]	12x 3.5" HS / 14	Open	3x GbE	3 / 3	None	1x 750W HS	Jan 2014
5466-C2x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	00AL140	1x 8GB 1600MHz	M5110 512(f)[c]	12x 3.5" HS / 14	Open	3xGbE, 2x10GbE[b]	3 / 3	None	1x 750W HS	Jan 2014
5466-C4x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	00AL140	1x 8GB 1600MHz	M5110 512(f)[c]	12x 3.5" HS / 14	Open	3x GbE	3 / 3	None	1x 750W HS	Jan 2014
5466-D2x	1x E5-2630L v2 6C 2.4GHz 15MB 1600MHz 60W	00AL142	1x 8GB 1600MHz	M5110 512(f)[c]	12x 3.5" HS / 14	Open	3xGbE, 2x10GbE[b]	3 / 3	None	1x 750W HS	Jan 2014
5466-F2x	1x E5-2660 v2 10C 2.2GHz 25MB 1866MHz 95W	00AL144	1x 8GB 1600MHz[d]	H1110, N2115	12x 3.5" HS / 14	Open	3xGbE, 2x10GbE[b]	3 / 3	None	1x 900W HS	Jan 2014
5466-F4x	1x E5-2660 v2 10C 2.2GHz 25MB 1866MHz 95W	00AL144	1x 8GB 1600MHz[d]	H1110, N2115	12x 3.5" HS / 14	Open	3x GbE	3 / 3	None	1x 900W HS	Jan 2014
5466-G2x	1x E5-2695 v2 12C 2.4GHz 30MB 1866MHz 115W	00AL147	1x 8GB 1600MHz[d]	M5110 1GB(f)[c]	12x 3.5" HS / 14	Open	3x GbE	3 / 3	None	1x 900W HS	Jan 2014

a. For models A2x, A4x, and B2x, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.
b. Model includes Broadcom NetXtreme 2x10 GbE SFP+ Mezz Adapter for IBM System x, 44T1360
c. ServeRAID M5110 with 512 MB of cache or 1 GB of cache and flash-based backup
d. For models F2x, F4x, and G2x, the processor memory speed is rated at 1866 MHz, but operates at up to 1600 MHz to match the rated speed of the installed DIMM.

Components	Specification
Form factor	2U rack.
Processor	Up to two **Intel Xeon processor E5-2600 v2** product family processors with **12 cores** (up to 2.7 GHz), 10 cores (up to **2.8 GHz**), eight or six cores (up to 2.6 GHz) or four cores (up to 2.5 GHz), one QPI link up to 8.0 GTps, up to **1866 MHz memory speed**, up to **30 MB L3 cache**. Intel C602J chipset.
Memory	Up to **16 DIMM sockets** (eight DIMMs per processor). UDIMMs, RDIMMs, and LRDIMMs are supported, but memory types cannot be intermixed. DIMM speeds are up to **1866 MHz**.
Memory maximums	With UDIMMs: Up to 128 GB with 16x 8 GB UDIMMs and two processors With RDIMMs: Up to 256 GB with 16x 16 GB RDIMMs and two processors With LRDIMMs: **Up to 512 GB** with 16x 32 GB LRDIMMs and two processors
Memory protection	ECC, Chipkill, memory mirroring, and memory rank sparing.
Drive bays	**Up to 14 3.5-inch SAS/SATA hot-swap drive bays**. 12 front accessible, 2 rear. Rear drive bays require optional Rear Backplane.
Maximum internal storage	**Up to 84 TB** with 6 TB 3.5-inch NL SATA HDDs, or up to 13.4 TB with 960 GB 3.5-inch SATA SSDs. An intermix of SAS/SATA is supported.
RAID support	**RAID 0, 1, and 10** with H1110 (rear HDDs only), M1115, M5110, or M5210. Upgrades to RAID 5 and 50 are available for M1115. Upgrades to RAID 5 and 50 are available for M5110 (zero-cache; 512 MB battery-backed cache; 512 MB or 1 GB flash-backed cache) and M5210 (zero-cache; 1 GB cache with no backup; 1 GB or 2 GB flash-backed cache). Upgrade to RAID 6 or 60 is available for M5110 and M5210 with caches.
Optical & tape bays	None.
Network interfaces	**Three integrated Gigabit Ethernet** 1000BASE-T RJ-45 ports (Intel I350-AM4); Separate 1 GbE management port. Other networking options available.
Ports	Front: Two USB 2.0 ports. Rear: Four USB 2.0, one DB-15 video, one DB-9 serial, three RJ-45 GbE, one dedicated GbE management port: Internal: One USB port for Hypervisor.
Cooling	IBM Calibrated Vectored Cooling with three redundant non-hot-swap fans; each fan has two motors. Two additional fans in the rear drive assembly.
Power supply	Up to two **redundant hot-swap** 750 W HE AC or 900 W HE AC power supplies (all AC power supplies are 80 PLUS certified).
Hot-swap parts	Hard drives, power supplies.
I/O expansion slots	**Three slots** in standard models using two riser cards, as follows Slot 1: PCIe 3.0 x8 (x8-wired), full height, half-length Slot 2: PCIe 3.0 x8 (x8-wired); low-profile, half-length Slot 3: PCIe 3.0 x8 (x8-wired); dedicated slot for internal ServeRAID adapter CTO models can replace slots 1 and 2 with a riser with one **PCIe x16** slot FH HL
Systems management	UEFI, IBM Integrated Management Module II (IMM2), Predictive Failure Analysis, basic light path diagnostics, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide. Optional IMM Advanced FoD Upgrade for remote presence (graphics, keyboard and mouse, and virtual media).

Components	Specification
Security features	Power-on password, admin password, and Trusted Platform Module (TPM).
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Operating systems supported	Microsoft Windows 2012 R2, 2012, and 2008 R2, Red Hat Enterprise Linux 5 and 6 (both x86 and x64), SUSE Linux Enterprise Server 11 (x86 and x64), VMware vSphere (ESXi) 5.1 and 5.5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePac offerings: 4-hour or 2-hour response time, 8 hours fix time, one-year or two-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 86 mm (3.4 in.), width: 447 mm (17.6 in.), depth: 749 mm (29.5 in.)
Weight	Minimum configuration: 16.4 kg (36.2 lb), maximum: 29.8 kg (65.7 lb)
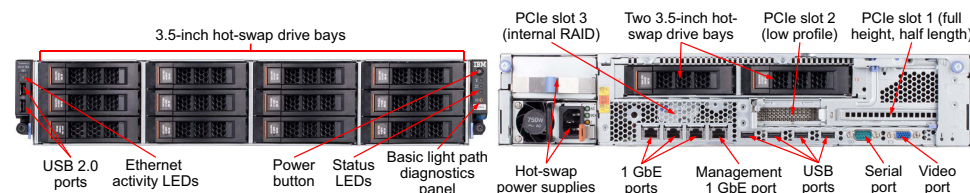
Popular and system-unique options (see the model table for processor options):

Part	Description
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
00D5032	8GB (1x8GB, 1Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
00FK886	Rear Backplane, 2x3.5" HDD Extension To Front Array (14-HDD Array)
00AL184	Rear Backplane, 2x3.5" HDD Separate Array
49Y6210	IBM 4TB 7.2K 6Gbps NL SAS 3.5" G2HS HDD
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
00AL182	1U Riser Card, One PCIe x16 slot
49Y7970	Intel X540-T2 Dual Port 10GBaseT Adapter for IBM System x
00AL742	IBM System x 750W High Efficiency Platinum AC Power Supply
00AL743	IBM System x 900W High Efficiency Platinum AC Power Supply

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3650 M4 BD* :
http://www.redbooks.ibm.com/abstracts/tips1102.html?Open

IBM System x3650 M4 HD Express Models

Model[1,2]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Slots[a]	GbE	Optical	Power	Announced
United States											
5466-EAU	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W 00AL143		1x 16GB 1600MHz	M5110 + 512 MB Flash	12x 3.5" HS / 14	Open	3 / 3	3x GbE	None	2x 900W HS / 2	Jul 2014
Europe Integrated Operating Team (IOT)											
5466-E1x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W 00AL140		1x 8GB 1600MHz	M5110	12x 3.5" HS / 14	Open	3 / 3	3x GbE	None	1x 750W HS / 2	Jan 2014
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)											
5466-E1x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W 00AL140		1x 8GB 1600MHz	M5110	12x 3.5" HS / 14	Open	3 / 3	3x GbE	None	1x 750W HS / 2	Jan 2014
Russia/Commonwealth of Independent States (CIS)											
5466-E1x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W 00AL140		1x 8GB 1600MHz	M5110	12x 3.5" HS / 14	Open	3 / 3	3x GbE	None	1x 750W HS / 2	Jan 2014

a. The PCIe slot counts are: Slots standard / slots available / slots maximum
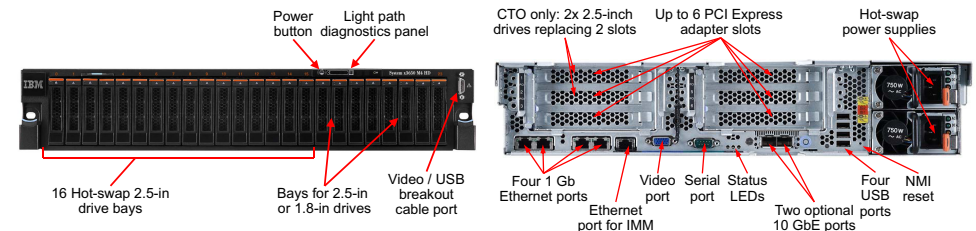
IBM System x3650 M4 HD

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Slots[a]	GbE	Optical	Power	Announced
5460-B3x	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	46W4211	1x 8 GB (1333MHz)[b]	M5210-e	16x 2.5"	Open	3 / 3 / 6	4	None	1x 750W	Sep 2013
5460-C3x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	46W4213	1x 8 GB 1600 MHz	M5210-e	16x 2.5"	Open	3 / 3 / 6	4	None	1x 750W	Sep 2013
5460-D3x	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	46W4214	1x 8 GB 1600 MHz	M5210-e	16x 2.5"	Open	3 / 3 / 6	4	None	1x 750W	Sep 2013
5460-F3x	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W4217	1x 8 GB 1600 MHz	M5210-e	16x 2.5"	Open	3 / 3 / 6	4	None	1x 750W	Sep 2013
5460-G3x	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	46W4215	1x 8 GB 1866 MHz	M5210-e	16x 2.5"	Open	3 / 3 / 6	4	None	1x 750W	Sep 2013
5460-H3x	1x E5-2660 v2 10C 2.2GHz 25MB 1866MHz 95W	46W4216	1x 8 GB 1866 MHz	M5210-e + H1110	16+2x 2.5"	Open	1 / 0 / 4	4	None	1x 750W	Sep 2013
5460-J3x	1x E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	46W4219	1x 16 GB 1866 MHz	M5210-e	16x 2.5"	Open	3 / 3 / 6	4	None	1x 750W	Sep 2013
5460-L3x	1x E5-2680 v2 10C 2.8GHz 25MB 1866MHz 115W	46W4220	1x 16 GB 1866 MHz	M5210-e	16x 2.5"	Open	3 / 3 / 6	4	None	1x 750W	Sep 2013
5460-M3x	1x E5-2690 v2 10C 3.0GHz 25MB 1866MHz 130W	46W4297	1x 16 GB 1866 MHz	M5210-e	16x 2.5"	Open	3 / 3 / 6	4	None	1x 900W	Sep 2013
5460-83x	1x E5-2697 v2 12C 2.7GHz 30MB 1866MHz 130W	46W4224	1x 16 GB 1866 MHz	M5210-e	16x 2.5"	Open	3 / 3 / 6	4	None	1x 900W	Sep 2013

a. The PCIe slot counts are: Slots standard / slots available / slots maximum
b. Model B3x includes a 1600 MHz DIMM standard, however it operates at 1333 MHz to match the installed processor.

Components	Specification
Form factor	2U Rack.
Processor	Up to two Intel Xeon processor E5-2600 v2 product family CPUs. Two QPI links up to 8.0 GT/s each. Up to 1866 MHz memory speed. Intel C602J chipset. 12 cores up to 2.7 GHz and 30 MB L3 cache 10 cores up to 3.0 GHz and 25 MB L3 cache 8 cores up to 3.3 GHz and 25 MB L3 cache 6 cores up to 3.5 GHz and 25 MB L3 cache 4 cores up to 3.5 GHz and 15 MB L3 cache
Memory	Up to 24 DIMM sockets (12 DIMMs per processor). RDIMMs, UDIMMs, and LRDIMMs (Load Reduced DIMMs) supported, but memory types cannot be intermixed. Memory speed up to 1866 MHz.
Memory maximums	With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 128 GB with 16x 8 GB UDIMMs and two processors With LRDIMMs: Up to 768 GB with 24x 32 GB LRDIMMs and two processors (LRDIMMs available 1Q/2014)
Memory protection	ECC, Chipkill, memory mirroring, and memory rank sparing.
Disk drive bays	up to 26x 2.5-inch hot-swap bays supporting HDDs or SSDs (24 bays front accessible and 2 bays rear accessible); or 16x 2.5-inch HDDs/SSDs (front) plus 16x 1.8-inch SSDs (front accessible)
Maximum internal storage	Up to 26 TB with 26x 1 TB NL SAS HDDs; Up to 16 TB HDD storage with 16x 1 TB NL SAS HDDs + 8 TB SSD storage with 16x 512 GB SSDs (24 TB total); Intermix of SAS/SATA is supported.
RAID support	RAID 0, 1, 10 with integrated ServeRAID M5210e. Optional upgrades to RAID 5, 50 are available -- zero-cache; 1 GB cache without battery; or 1 GB, 2 GB, or 4 GB flash-backed cache (4GB cache option available 1Q/2014). Optional upgrade to RAID 6, 60.
Optical/tape bays	None.
Network interfaces	Four integrated Gigabit Ethernet 1000BASE-T ports (RJ-45); two embedded 10 Gb Ethernet ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on optional 10 Gb Ethernet mezzanine card (does not consume PCIe slot).
PCI Expansion slots	Up to six slots depending on the riser cards installed. The slots for the above models are as follows: Slot 1: PCIe 3.0 x8; full-height, full-length Slot 2: PCIe 3.0 x8; full-height, half-length Slot 3: PCIe 3.0 x8; full-height, half-length Slot 4: Optional, requires second processor and second riser card Slot 5: Optional, requires second processor and second riser card Slot 6: Optional, requires second processor and second riser card
Ports	Front: Breakout cable port which offers two USB 2.0 ports and one DB-15 video. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. One internal USB port for embedded hypervisor.
Cooling	IBM Calibrated Vectored Cooling with up to four redundant hot swap fans (all standard; two fan zones with N+1 fan design; each fan has two motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac or 900 W ac power supplies (all 80 PLUS Platinum certification), or -48V 750 W dc power supply.

Components	Specification
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Hot-swap parts	Hard drives, power supplies, and fans.
Systems management	UEFI, IBM Integrated Management Module II (IMM2), Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide. Optional IMM Advanced Upgrade software feature for remote presence.
Security features	Power-on password, administrator's password, Trusted Platform Module (TPM).
Operating systems supported	Microsoft Windows Server 2012, 2008 R2 and 2008, Red Hat Enterprise Linux 6, SUSE Linux Enterprise Server 11, VMware vSphere 5.1
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5 NBD
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8-hour fix time, one-year or 2-year warranty extension, remote technical support for IBM hardware and some IBM & OEM applications.
Dimensions	Height: 86 mm (3.4 in), width: 445 mm (17.5 in), depth: 746 mm (29.4 in)
Weight	Minimum configuration: 25 kg (55 lb), maximum: 30 kg (65 lb)

Power button / Light path diagnostics panel / CTO only: 2x 2.5-inch drives replacing 2 slots / Up to 6 PCI Express adapter slots / Hot-swap power supplies

16 Hot-swap 2.5-in drive bays / Bays for 2.5-in or 1.8-in drives / Video / USB breakout cable port / Four 1 Gb Ethernet ports / Ethernet port for IMM / Video port / Serial port / Status LEDs / Two optional 10 GbE ports / Four USB ports / NMI reset

Popular and system-unique options (see the model table for processor options):

Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
46W4204	x3650 M4 HD Plus 8 x 2.5" HS HDD Assembly Kit with Expander
00Y7658	x3650 M4 HD 3 x 8 2.5" HS HDD Assembly Kit
46W4205	x3650 M4 HD Plus 16 x 1.8" SSD Assembly Kit
46C9110	ServeRAID M5210 SAS/SATA Controller
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
00Y7759	x3650 M4 HD PCIe Riser Card 2 (1 x8 FH/FL + 2 x8 FH/HL Slots)
49Y7990	Intel X540 Dual Port 10GBase-T Embedded Adapter
94Y6669	IBM System x 750W High Efficiency Platinum AC Power Supply

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3650 M4 HD* :
http://www.redbooks.ibm.com/abstracts/tips1049.html?Open

IBM System x3650 M4 HD Express Models

Model[1,2]	Processor	2nd CPU	Memory	RAID controller	Disk bays	Disks	Slots[a]	GbE	Optical	Power	Announced
North America (NA)											
5460-EAU	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W4217	1x 8 GB 1600 MHz	M5210e	16x 2.5"	4x 1TB NL SAS	3 / 3 / 6	4	None	1x 750W	Sep 2012
Latin America (LA)											
5460-EAU	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	46W4217	1x 8 GB 1600 MHz	M5210e	16x 2.5"	4x 1TB NL SAS	3 / 3 / 6	4	None	1x 750W	Sep 2012
Japan											
5460-PAA	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	46W4210	1x 8 GB (1333 MHz)[b]	M5210e + 1GB Flash/R5	16x 2.5"	Open	3 / 3 / 6	4	None	1x 750W	Sep 2012

a. The PCIe slot counts are: Slots standard / slots available / slots maximum
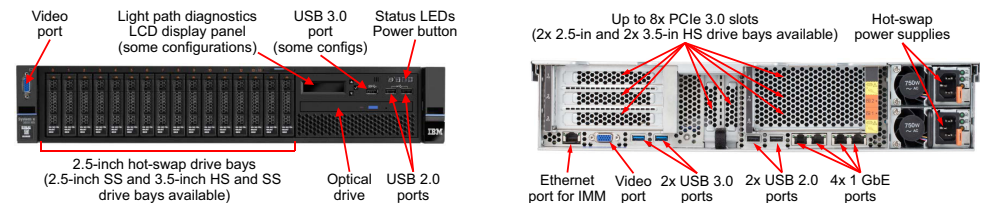b. Japan Express model PAA includes a 1600 MHz DIMM standard, however it operates at 1333 MHz to match the installed processor.

IBM System x3650 M5 (Page 1 of 2)

Model[1]	Intel Xeon Processor (2 maximum)	2nd CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	LCD	Power (HS)	Announced
5462-A2x	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	00FK640	1x 8 GB	Optional	8x 2.5" SS / 16	Open	4x GbE	3 / 9	Optional	Optional	1x 550 W / 2	Sep 2014
5462-B2x	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00FK641	1x 8 GB	Optional	8x 3.5" SS / 8	Open	4x GbE	3 / 9	Optional	Standard	1x 550 W / 2	Sep 2014
5462-C2x	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00FK642	1x 16 GB	M1215	8x 2.5" HS / 18	Open	4x GbE	3 / 9	Optional	Optional	1x 550 W / 2	Sep 2014
5462-C4x	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00FK642	1x 16 GB	M1215	8x 3.5" HS / 10	Open	4x GbE	3 / 9	Optional	Standard	1x 550 W / 2	Sep 2014
5462-D2x	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00FK643	1x 16 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open	4x GbE	3 / 9	Optional	Optional	1x 550 W / 2	Sep 2014
5462-D4x	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00FK643	1x 16 GB	M5210 1GB Flash	12x 3.5" HS / 16	Open	4x GbE	3 / 9	None	None	1x 750 W / 2	Sep 2014
5462-52x	1x E5-2630L v3 8C 1.8GHz 20MB 1866MHz 55W	00FK655	1x 16 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open	4x GbE	3 / 9	Optional	Optional	1x 550 W / 2	Sep 2014

Components	Specification
Form factor	**2U rack**.
Processor	Up to two **Intel Xeon processor E5-2600 v3** product family CPUs. Core counts 8 to **18 cores** . Core frequencies up to **2.6 GHz**. L3 cache up to **45 MB**. Two QPI links up to 9.6 GT/s each. Up to **45 MB L3** cache. Intel C612 chipset.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). Four memory channels per processor, 3 DIMMs per channel. **2133 MHz DDR4** DIMM technology. RDIMMs and LRDIMMs supported (64 GB LRDIMMs planned for 1Q/2015). Memory speed up to 2133 MHz depending on the processor and number of DIMMs installed.
Memory maximums	With LRDIMMs: **Up to 1.5 TB** with 24x 64 GB and two processors (planned) With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Up to 26x 2.5" hot-swap bays (24 front mounted + 2 rear mounted), or Up to 14x 3.5" hot-swap bays (12 front, 2 rear) + 2x 2.5" hot-swap bays (rear), or Up to 16x 2.5" simple-swap bays (front), or 8x 3.5" simple-swap bays (front) See Product Guide for details. Supports 512e Advanced Format HDDs.
Maximum internal storage	*With 3.5" HS drive bays*: **Up to 87.6 TB** using 12x 6TB front SAS/SATA/SED drives + 2x 6TB rear + 2x 1.8TB rear SAS 2.5" rear drives. *With 2.5" HS drive bays*: **Up to 46.8 TB** using 24x 1.8 TB front SAS drives and 2x 1.8 TB rear SAS drives. *With 3.5" SS drive bays*: **Up to 48 TB** using 8x 6TB front SATA drives
RAID support	*Most models* (see model table): **RAID 0, 1, or 10** with either ServeRAID M5210 or M1215 12 Gbps RAID controller standard in **dedicated internal PCIe slot**. *Other models*: Optional hardware RAID; drives are connected on onboard SATA controller. M5210 upgrades: RAID 5 or 50 with either zero-cache, 1GB cache (no battery option), 1GB or 2GB or 4GB cache with flash backup; optional RAID 6 and 60; other performance upgrades. M1215 upgrade: RAID 5 with zero-cache.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45) using **Broadcom BCM5719** chipset. Supports Mezzanine LOM (ML2) adapters with 1GbE or 10GbE ports; requires riser card with ML2 slot.
PCI expansion slots	Up to **nine PCIe 3.0 slots**: 2 vertical PCIe slots, up to 6 PCIe slots on two optional riser cards and a **dedicated internal RAID controller slot**. Models with 3 slots have slots 4 & 5 and RAID slot standard. Lane widths of slots on riser cards depends on riser card selected. ▶ Slot 1 (riser 1): PCIe 3.0 x8 or x16 full height/full length (FH/FL) ▶ Slot 2 (riser 1): PCIe 3.0 x8 FH/FL (not present if slot 1 is a x16 slot) ▶ Slot 3 (riser 1): PCIe 3.0 x8 full height/half length or ML2 ▶ Slot 4 (vertical): PCIe 3.0 x8 low-profile ▶ Slot 4 (vertical): PCIe 3.0 x16 low-profile (requires processor 2) ▶ Slot 6 (riser 2): PCIe 3.0 x8 or 16 FH/FL (requires processor 2) ▶ Slot 7 (riser 2): PCIe 3.0 x8 FH/FL (not present for x16 slot) (req. CPU 2) ▶ Slot 8 (riser 2): PCIe 3.0 x8 full height/half length (requires processor 2) Use of 3.5" rear drive bays eliminates use of slots 6, 7, 8. Use of 2.5" rear drive bays eliminates use of slots 1, 2, 3. GPU support only via CTO.
Optical and tape drive bays	Optional UltraSlim optical drive bay with certain disk drive bay configurations (see model table). Support for DVD-ROM or multiburner. No internal tape bay.
Ports	*Front*: two USB 2.0 ports, one DB-15 video. Models models with LCD panel have a third USB 3.0 port. *Rear*: two **USB 3.0** and two USB 2.0 ports, one DB-15 video, one RJ-45 systems management, four RJ-45 GbE network ports, optional serial port from onboard connector (consumes 1 PCIe slot), optional 10Gb ports using an ML2 adapter. *Internal*: one USB port for for embedded hypervisor.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**), 100-240V AC input. 750 W ac **80 PLUS Titanium** option available via CTO (200-240V only).

Components	Specification
Cooling	IBM Calibrated Vectored Cooling with up to six redundant hot swap fans (four standard, additional two fans with the second processor); two fan zones with N+1 fan redundancy; each fan has two motors.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IBM IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Hot-swap parts	Hard drives, power supplies, and fans.
Systems management	Front-mounted **LCD status panel** (certain drive configurations only), UEFI, IBM IMM2 using Renesas SH7758, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director, IBM ToolsCenter. Optional IMM Advanced Upgrade license for remote presence.
Security features	Power-on password, administrator password, and two Trusted Platform Modules (V2.0). Support for SED drive key management with IBM Security Key Lifecycle Manager with FoD license upgrade. Optional lockable front bezel.
Operating systems supported	Microsoft Windows Server 2008 R2, 2012, 2012 R2, Red Hat Enterprise Linux 6 and 7, SUSE Linux Enterprise Server 11 and 12, VMware vSphere 5.1 and 5.5
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware & some IBM/third-party applications.
Dimensions	Height: 87 mm (3.4 in), width: 446 mm (17.5 in), depth: 800 mm (31.5 in)
Weight	Minimum configuration: 19 kg (42 lb), maximum: 34 kg (75 lb)

Video port — Light path diagnostics LCD display panel (some configurations) — USB 3.0 port (some configs) — Status LEDs Power button — Up to 8x PCIe 3.0 slots (2x 2.5-in and 2x 3.5-in HS drive bays available) — Hot-swap power supplies

2.5-inch hot-swap drive bays (2.5-inch SS and 3.5-inch HS and SS drive bays available) — Optical drive — USB 2.0 ports — Ethernet port for IMM — Video port — 2x USB 3.0 ports — 2x USB 2.0 ports — 4x 1 GbE ports

Popular and system-unique options (see the model table for processor options):

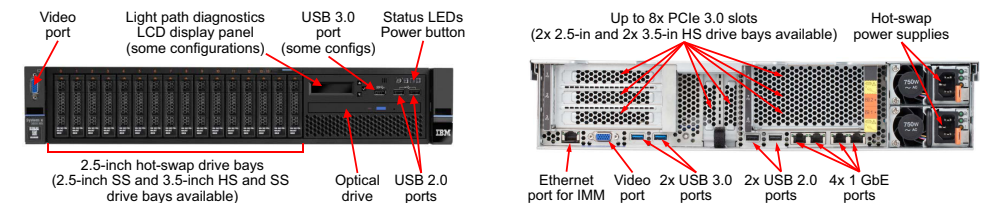| Part	Description
46W0796	16GB TruDDR4 Memory (2Rx4, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM
46W0800	32GB TruDDR4 Memory (4Rx4, 1.2V) PC417000 CL15 2133MHz LP LRDIMM
00NA271	1.8TB 10K 12Gbps SAS 2.5" G3HS 512e HDD
00FN228	6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD
00FK930	System x 550W High Efficiency Platinum AC Power Supply
00FK932	System x 750W High Efficiency Platinum AC Power Supply
00KA498	System x3650 M5 PCIe Riser (2 x8 FH/FL + 1 x8 FH/HL Slots)
00KA519	System x3650 M5 PCIe Riser (2 x8 FH/FL + 1 x8 ML2 Slots)
00KA161	COM Port Bracket
00KA503	System x3650 M5 Advanced LCD Light Path Kit
90Y3901	Integrated Management Module Advanced Upgrade

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3650 M5* at: http://www.redbooks.ibm.com/abstracts/tips1193.html?Open

Model[1]	Intel Xeon Processor (2 maximum)	2nd CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	LCD	Power (HS)	Announced
5462-F2x	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00FK644	1x 16 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open	4x GbE	3 / 9	Optional	Optional	1x 550 W / 2	Sep 2014
5462-F4x	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00FK644	1x 16 GB	M5210 1GB Flash	8x 2.5" HS / 26	Open	4x GbE	3 / 9	None	None	1x 750 W / 2	Sep 2014
5462-G2x	1x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	00FK645	1x 16 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open	4x GbE	3 / 9	Optional	Optional	1x 750 W / 2	Sep 2014
5462-62x	1x E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	00FK647	1x 16 GB	M5210 2GB Flash	8x 2.5" HS / 18	Open	4x GbE	3 / 9	Optional	Optional	1x 750 W / 2	Sep 2014
5462-J2x	1x E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	00FK648	1x 16 GB	M5210 2GB Flash	8x 2.5" HS / 18	Open	4x GbE	3 / 9	Optional	Optional	1x 900 W / 2	Sep 2014
5462-L2x	1x E5-2690 v3 12C 2.6GHz 30MB 2133MHz 135W	00FK649	1x 16 GB	M5210	8x 2.5" HS / 18	Open	4x GbE	3 / 9	Optional	Optional	1x 900 W / 2	Sep 2014
5462-M2x	1x E5-2699 v3 18C 2.3GHz 45MB 2133MHz 145W	00KF372	1x 16 GB	M5210	8x 2.5" HS / 18	Open	4x GbE	3 / 9	Optional	Optional	1x 750 W / 2	Sep 2014

Components	Specification
Form factor	**2U rack**.
Processor	Up to two **Intel Xeon processor E5-2600 v3** product family CPUs. Core counts 8 to **18 cores** . Core frequencies up to **2.6 GHz**. L3 cache up to **45 MB**. Two QPI links up to 9.6 GT/s each. Up to **45 MB L3** cache. Intel C612 chipset.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). Four memory channels per processor, 3 DIMMs per channel. **2133 MHz DDR4** DIMM technology. RDIMMs and LRDIMMs supported (64 GB LRDIMMs planned for 1Q/2015). Memory speed up to 2133 MHz depending on the processor and number of DIMMs installed.
Memory maximums	With LRDIMMs: **Up to 1.5 TB** with 24x 64 GB and two processors (planned) With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Up to 26x 2.5" hot-swap bays (24 front mounted + 2 rear mounted), or Up to 14x 3.5" hot-swap bays (12 front, 2 rear) + 2x 2.5" hot-swap bays (rear), or Up to 16x 2.5" simple-swap bays (front), or 8x 3.5" simple-swap bays (front) See Product Guide for details. Supports 512e Advanced Format HDDs.
Maximum internal storage	*With 3.5" HS drive bays*: **Up to 87.6 TB** using 12x 6TB front SAS/SATA/SED drives + 2x 6TB rear + 2x 1.8TB rear SAS 2.5" rear drives. *With 2.5" HS drive bays*: **Up to 46.8 TB** using 24x 1.8 TB front SAS drives and 2x 1.8 TB rear SAS drives. *With 3.5" SS drive bays*: **Up to 48 TB** using 8x 6TB front SATA drives
RAID support	*Most models* (see model table): **RAID 0, 1, or 10** with either ServeRAID M5210 or M1215 12 Gbps RAID controller standard in **dedicated internal PCIe slot**. *Other models*: Optional hardware RAID; drives are connected on onboard SATA controller. M5210 upgrades: RAID 5 or 50 with either zero-cache, 1GB cache (no battery option), 1GB or 2GB or 4GB cache with flash backup; optional RAID 6 and 60; other performance upgrades. M1215 upgrade: RAID 5 with zero-cache.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45) using **Broadcom BCM5719** chipset. Supports Mezzanine LOM (ML2) adapters with 1GbE or 10GbE ports; requires riser card with ML2 slot.
PCI expansion slots	Up to **nine PCIe 3.0 slots**: 2 vertical PCIe slots, up to 6 PCIe slots on two optional riser cards and a **dedicated internal RAID controller slot**. Models with 3 slots have slots 4 & 5 and RAID slot standard. Lane widths of slots on riser cards depends on riser card selected. ▶ Slot 1 (riser 1): PCIe 3.0 x8 or x16 full height/full length (FH/FL) ▶ Slot 2 (riser 1): PCIe 3.0 x8 FH/FL (not present if slot 1 is a x16 slot) ▶ Slot 3 (riser 1): PCIe 3.0 x8 full height/half length or ML2 ▶ Slot 4 (vertical): PCIe 3.0 x8 low-profile ▶ Slot 4 (vertical): PCIe 3.0 x16 low-profile (requires processor 2) ▶ Slot 6 (riser 2): PCIe 3.0 x8 or 16 FH/FL (requires processor 2) ▶ Slot 7 (riser 2): PCIe 3.0 x8 FH/FL (not present for x16 slot) (req. CPU 2) ▶ Slot 8 (riser 2): PCIe 3.0 x8 full height/half length (requires processor 2) Use of 3.5" rear drive bays eliminates use of slots 6, 7, 8. Use of 2.5" rear drive bays eliminates use of slots 1, 2, 3. GPU support only via CTO.
Optical and tape drive bays	Optional UltraSlim optical drive bay with certain disk drive bay configurations (see model table). Support for DVD-ROM or multiburner. No internal tape bay.
Ports	*Front*: two USB 2.0 ports, one DB-15 video. Models models with LCD panel have a third USB 3.0 port. *Rear*: two **USB 3.0** and two USB 2.0 ports, one DB-15 video, one RJ-45 systems management, four RJ-45 GbE network ports, optional serial port from onboard connector (consumes 1 PCIe slot), optional 10Gb ports using an ML2 adapter. *Internal*: one USB port for for embedded hypervisor.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**), 100-240V AC input. 750 W ac **80 PLUS Titanium** option available via CTO (200-240V only).

Components	Specification
Cooling	IBM Calibrated Vectored Cooling with up to six redundant hot swap fans (four standard, additional two fans with the second processor); two fan zones with N+1 fan redundancy; each fan has two motors.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IBM IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Hot-swap parts	Hard drives, power supplies, and fans.
Systems management	Front-mounted **LCD status panel** (certain drive configurations only), UEFI, IBM IMM2 using Renesas SH7758, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director, IBM ToolsCenter. Optional IMM Advanced Upgrade license for remote presence.
Security features	Power-on password, administrator password, and two Trusted Platform Modules (V2.0). Support for SED drive key management with IBM Security Key Lifecycle Manager with FoD license upgrade. Optional lockable front bezel.
Operating systems supported	Microsoft Windows Server 2008 R2, 2012, 2012 R2, Red Hat Enterprise Linux 6 and 7, SUSE Linux Enterprise Server 11 and 12, VMware vSphere 5.1 and 5.5
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware & some IBM/third-party applications.
Dimensions	Height: 87 mm (3.4 in), width: 446 mm (17.5 in), depth: 800 mm (31.5 in)
Weight	Minimum configuration: 19 kg (42 lb), maximum: 34 kg (75 lb)

Video port / Light path diagnostics LCD display panel (some configurations) / USB 3.0 port (some configs) / Status LEDs Power button / Up to 8x PCIe 3.0 slots (2x 2.5-in and 2x 3.5-in HS drive bays available) / Hot-swap power supplies

2.5-inch hot-swap drive bays (2.5-inch SS and 3.5-inch HS and SS drive bays available) / Optical drive / USB 2.0 ports / Ethernet port for IMM / Video port / 2x USB 3.0 ports / 2x USB 2.0 ports / 4x 1 GbE ports

Popular and system-unique options (see the model table for processor options):

Part	Description
46W0796	16GB TruDDR4 Memory (2Rx4, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM
95Y4812	64GB TruDDR4 Memory (4Rx4,1.2V) PC4-17000 CL15 2133MHz LP LRDIMM
00AJ146	IBM 1.2TB 10K 6Gbps SAS 2.5" G3HS HDD
00FN228	IBM 6TB 7.2K 12Gbps NL SAS 3.5" G2HS 512e HDD
00FK930	System x 550W High Efficiency Platinum AC Power Supply
00FK932	System x 750W High Efficiency Platinum AC Power Supply
00KA498	System x3650 M5 PCIe Riser (2 x8 FH/FL + 1 x8 FH/HL Slots)
00KA519	System x3650 M5 PCIe Riser (2 x8 FH/FL + 1 x8 ML2 Slots)
00KA161	COM Port Bracket
00KA503	System x3650 M5 Advanced LCD Light Path Kit
90Y3901	IBM Integrated Management Module Advanced Upgrade

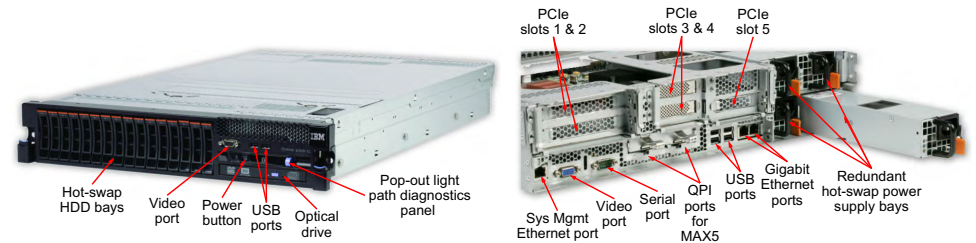For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3650 M5* at: http://www.redbooks.ibm.com/abstracts/tips1193.html?Open

IBM System x3650 M5 Express Models

Model[1,2]	Intel Xeon Processor (2 maximum)	2nd CPU	Memory	RAID controller	Disk bays	Disks	GbE	Slots	Optical	LCD	Power (HS)	Announced
United States, Canada												
5462-EAU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00FK641	1x 8 GB§	M5210	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-EFU	2x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	Standard	2x 16 GB	M5210 2GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	2x 550 W / 2	Sep 2014
5462-EBU	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00FK643	1x 16 GB	M5210	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-ECU	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00FK644	1x 16 GB	M5210	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-EDU	1x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	00FK645	1x 16 GB	M5210	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 750 W / 2	Sep 2014
5462-EGU	2x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	Standard	4x 16 GB	M5210 4GB Flash	16x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	2x 750 W / 2	Sep 2014
5462-EEU	1x E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	00FK647	1x 16 GB	M5210	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 750 W / 2	Sep 2014
Latin America												
5462-ENU	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00FK641	1x 8 GB	M5210	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-EOU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00FK642	1x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-EPU	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00FK642	1x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	2x 300GB 10K	4x GbE	3 / 9	Multiburner	Standard	2x 550 W / 2	Sep 2014
5462-EQU	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00FK643	1x 16 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-ERU	2x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	Standard	2x 16 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	2x 750 W / 2	Sep 2014
5462-ESU	1x E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	00FK647	1x 16 GB	M5210 2GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 750 W / 2	Sep 2014
Asia Pacific (Australia and New Zealand only)												
5462-EHM	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00FK641	1x 8 GB	M1215	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-EIM	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00FK641	1x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	2x 300GB 10K	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-EJM	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00FK642	1x 8 GB	M1215	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-EKM	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00FK642	2x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	2x 300GB 10K	4x GbE	3 / 9	Multiburner	Standard	1x 750 W / 2	Sep 2014
5462-ELM	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00FK643	2x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 750 W / 2	Sep 2014
5462-EMM	2x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	Standard	2x 16 GB	M5210	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	2x 750 W / 2	Sep 2014
Japan												
5462-E7J	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	00FK640	1x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Optional	Standard	1x 550 W / 2	Sep 2014
5462-E8J	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00FK641	1x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Optional	Standard	1x 550 W / 2	Sep 2014
5462-E9J	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00FK642	1x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Optional	Standard	1x 550 W / 2	Sep 2014
Europe, Middle East and Africa												
5462-E1x	1x E5-2603 v3 6C 1.6GHz 15MB 1600MHz 85W	00FK640	1x 8 GB	M5210	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-E2x	1x E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00FK641	1x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Optional	Standard	1x 550 W / 2	Sep 2014
5462-E3x	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00FK642	1x 8 GB	M5210	8x 2.5" HS / 18	2x 300GB 10K	4x GbE	3 / 9	Multiburner	Standard	2x 550 W / 2	Sep 2014
5462-E4x	1x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00FK642	1x 8 GB	M5210	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-E5x	1x E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00FK643	1x 8 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 550 W / 2	Sep 2014
5462-E6x	1x E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00FK644	1x 16 GB	M5210 1GB Flash	8x 2.5" HS / 18	Open bay	4x GbE	3 / 9	Multiburner	Standard	1x 750 W / 2	Sep 2014

IBM System x3690 X5 (7147)

Model[1]	Processor	Second CPU	MAX5™	Memory	Memory mezzanine	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced
7147-A1x	1x Xeon E7-2803 6C 1.73 GHz 18 MB 800 MHz 105 W	88Y5667	Not supported	2x 4 GB	Optional	Optional	Open	Open	2x 1 Gb	Optional	1x 675 W / 4	Apr 2011
7147-A2x	1x Xeon E7-2820 8C 2.00 GHz 18 MB 978 MHz 105 W	88Y5666	Not supported	2x 4 GB	Optional	M1015	4x 2.5" / 16	Open	2x 1 Gb	Optional	2x 675 W / 4	Apr 2011
7147-A3x	1x Xeon E7-2830 8C 2.13 GHz 24 MB 1066 MHz 105 W	88Y5665	Optional	2x 4 GB	Optional	M1015	4x 2.5" / 16	Open	2x 1 Gb	Optional	2x 675 W / 4	Apr 2011
7147-A5x	1x Xeon E7-2850 10C 2.00 GHz 24 MB 1066 MHz 130 W	88Y5720	Optional	2x 4 GB	Optional	M1015	4x 2.5" / 16	Open	2x 1 Gb	Optional	2x 675 W / 4	Apr 2011
7147-A6x	1x Xeon E7-2860 10C 2.26 GHz 24 MB 1066 MHz 130 W	88Y5664	Optional	2x 4 GB	Optional	M1015	4x 2.5" / 16	Open	2x 1 Gb	Optional	2x 675 W / 4	Apr 2011
7147-A7x	1x Xeon E7-2870 10C 2.40 GHz 30 MB 1066 MHz 130 W	88Y5663	Optional	2x 4 GB	Optional	M1015	4x 2.5" / 16	Open	2x 1 Gb	Optional	2x 675 W / 4	Apr 2011
7147-C1x	1x Xeon E7-8837 8C 2.67 GHz 24 MB 1066 MHz 130 W	88Y5657	Optional	2x 4 GB	Optional	M1015	4x 2.5" / 16	Open	2x 1 Gb	Optional	2x 675 W / 4	Apr 2011

Components	Specification
Form factor/height	Rack/2U per chassis; MAX5 adds 1U.
Processor (maximum)	**Intel Xeon E7-2800, E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	One or two standard (model-dependent), two maximum.
Cache (maximum)	**Up to 30 MB**.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	**Up to 64 DIMM sockets**: ▶ 16 on the system board ▶ 32 total with an optional memory mezzanine ▶ 64 total with an optional MAX5 and memory mezzanine
Memory maximums	**Up to 2 TB of RAM** using all 32 GB DIMMs: ▶ 512 GB without the memory mezzanine ▶ 1 TB total with the memory mezzanine populated ▶ 2 TB total with the memory mezzanine and MAX5 populated
Expansion slots	**Up to 5 PCIe 2.0 slots** depending on the riser cards used.
Disk bays	**Up to 16x 2.5-inch** SAS hot-swap bays or **up to 24x 1.8-inch solid-state drive** (SSD) hot-swap bays.
Optical drive	Optional.
Maximum internal storage	**16 TB per chassis** (using 1 TB 2.5-inch NL SAS drives).
Network interface	Two 1 Gb Ethernet ports, **Broadcom5709C** controller. **Emulex 10 GB Virtual Fabric Adapter** with two 10 GB Ethernet ports (standard on some models, optional on the others). One Intel Ethernet Quad Port Server Adapter I340-T4 (standard on some workload-optimized models).
Power supply	Server: Up to four 675 W hot-swap redundant power supplies. MAX5: Two 675 W hot-swap redundant power supplies.
Hot-swap parts	Power supplies, fans, and hard disk drives.
RAID support	Most models: **ServeRAID M1015 controller** standard supporting RAID 0, 1, 10, 5, and 50.
Systems management	Alert on LAN 2, automatic server restart, IBM Director, IBM ServerGuide, integrated management module (IMM), light path diagnostics (independently powered), predictive failure analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, and dynamic system analysis.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Datacenter editions 64-bit), 64-bit Red Hat Enterprise Linux and SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere.
Limited warranty	Three-year customer replaceable unit and on-site limited warranty.
Dimensions	Height: 86 mm (3.5 inches, 2U), depth: 698 mm (27.4 inches), width: 429 mm (16.8 inches).
Weight	31.3 kg (69 lb) when fully configured.

PCIe slots 1 & 2 — PCIe slots 3 & 4 — PCIe slot 5

Hot-swap HDD bays — Video port — Power button — USB ports — Optical drive — Pop-out light path diagnostics panel — Sys Mgmt Ethernet port — Video port — Serial port — QPI ports for MAX5 — USB ports — Gigabit Ethernet ports — Redundant hot-swap power supply bays

Popular and system-unique options (see the model table for processor options):

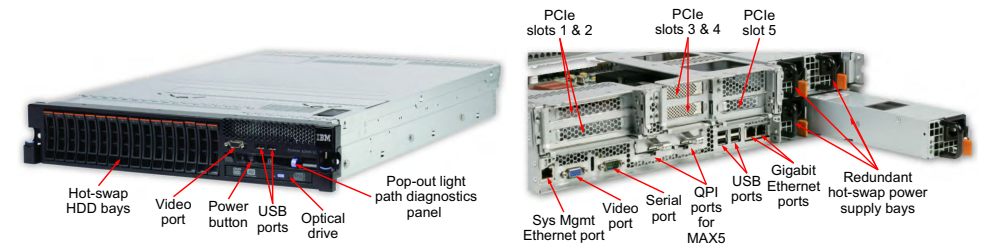| Part	Description
88Y6529	IBM MAX5 V2 for System x
59Y6269	IBM MAX5 to x3690 X5™ Cable Kit
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
46C7483	16GB (1x16GB, 4Rx4, 1.5V) PC3-8500 CL7 ECC DDR3 1066MHz
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM
60Y0339	IBM 4x 2.5" HS SAS HDD Backplane
60Y0381	IBM 8x 2.5" HS SAS HDD Backplane
60Y0360	IBM eXFlash 8x 1.8" HS SAS SSD Backplane
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
49Y2003	IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
43W7746	IBM 200 GB SATA 1.8-inch MLC SSD
46M0902	UltraSlim Enhanced SATA Multi-Burner
60Y0332	IBM High Efficiency 675W Power Supply (use for power supply 2)
60Y0327	IBM 675W Redundant Power Supply Kit (contains 2; use for power supplies 3 and 4)

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3690 X5*:
http://www.redbooks.ibm.com/abstracts/tips0818.html?Open

IBM System x3690 X5 (7147) workload optimized models (page 1)

Model[1]	Processor (2 maximum)	Second CPU	MAX5	Memory	Memory mezzanine	RAID adapters	Disk bays	Disks	Network	Optical	Power (4 max)	Announced
Database workload-optimized models												
7147-D3x	2x Xeon E7-2860 10C 2.26GHz 24 MB 1066 MHz	88Y5664	Optional	16x 4 GB	Optional	2x M5015 (+Perf keys)	16x 1.8" / 24	16x 200 GB SSD	2x 1Gb + 2x 10Gb[a]	Optional	4x 675 W	Feb 2013
7147-D4x	2x Xeon E7-2860 10C 2.26GHz 24 MB 1066 MHz	88Y5664	Optional	16x 4 GB	Optional	2x 6Gb SSD HBA	16x 1.8" / 24	16x 200 GB SSD	2x 1Gb + 2x 10Gb[a]	Optional	4x 675 W	Feb 2013
Virtualization workload-optimized models*												
7147-F1x (VMware)	2x Xeon E7-2860 10C 2.26 GHz 24 MB 1066 MHz	88Y5664	Standard	Server: 32x 4 GB MAX5: 32x 4 GB	Standard	1x M1015	4x 2.5" / 16	No HDDs or SSDs; USB key: ESXi 4.1U1	2x 1Gb + 2x 10Gb[a]	Optional	4x 675 W	Jun 2011
7147-F1x (RHEL)	2x Xeon E7-2860 10C 2.26 GHz 24 MB 1066 MHz	88Y5664	Standard	Server: 32x 4 GB MAX5: 32x 4 GB	Standard	1x M1015	4x 2.5" / 16	None; RHEV license	2x 1Gb + 2x 10Gb[a]	Optional	4x 675 W	Oct 2011

Components	Specification
Form factor/height	Rack/2U per chassis; MAX5 adds 1U.
Processor (maximum)	**Intel Xeon E7-2800, E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	One or two standard (model-dependent), two maximum.
Cache (maximum)	**Up to 30 MB**.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	**Up to 64 DIMM sockets**: ► 16 on the system board ► 32 total with an optional memory mezzanine ► 64 total with an optional MAX5 and memory mezzanine
Memory maximums	**Up to 2 TB of RAM** using all 32 GB DIMMs: ► 512 GB without the memory mezzanine ► 1 TB total with the memory mezzanine populated ► 2 TB total with the memory mezzanine and MAX5 populated
Expansion slots	**Up to 5 PCIe 2.0 slots** depending on the riser cards used.
Disk bays	**Up to 16x 2.5-inch** SAS hot-swap bays or **up to 24x 1.8-inch solid-state drive** (SSD) hot-swap bays.
Optical drive	Optional.
Maximum internal storage	**16 TB per chassis** (using 1 TB 2.5-inch NL SAS drives).
Network interface	Two 1 Gb Ethernet ports, **Broadcom5709C** controller. **Emulex 10 GB Virtual Fabric Adapter** with two 10 GB Ethernet ports (standard on some models, optional on the others). One Intel Ethernet Quad Port Server Adapter I340-T4 (standard on some workload-optimized models).
Power supply	Server: Up to four 675 W hot-swap redundant power supplies. MAX5: Two 675 W hot-swap redundant power supplies.
Hot-swap parts	Power supplies, fans, and hard disk drives.
RAID support	Most models: **ServeRAID M1015 controller** standard supporting RAID 0, 1, 10, 5, and 50.
Systems management	Alert on LAN 2, automatic server restart, IBM Director, IBM ServerGuide, integrated management module (IMM), light path diagnostics (independently powered), predictive failure analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, and dynamic system analysis.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Datacenter editions 64-bit), 64-bit Red Hat Enterprise Linux and SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere.
Limited warranty	Three-year customer replaceable unit and on-site limited warranty.
Dimensions	Height: 86 mm (3.5 inches, 2U), depth: 698 mm (27.4 inches), width: 429 mm (16.8 inches).
Weight	31.3 kg (69 lb) when fully configured.

Components	Specification
* Preinstalled software	Hxx models include SLES for SAP, IBM GPFS, and the SAP HANA software stack preinstalled. F1x model includes VMware ESXi 4.1 Update 1 on an integrated USB key. F2x model includes Red Hat Enterprise Linux with the Red Hat Enterprise. The hypervisor is not preinstalled on any disk.

Popular and system-unique options (see the model table for processor options):

Part	Description
88Y6529	IBM MAX5 V2 for System x
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM
60Y0339	IBM 4x 2.5" HS SAS HDD Backplane
60Y0381	IBM 8x 2.5" HS SAS HDD Backplane
60Y0360	IBM eXFlash 8x 1.8" HS SAS SSD Backplane
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
49Y2003	IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
46M0902	UltraSlim Enhanced SATA Multi-Burner

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3690 X5*:
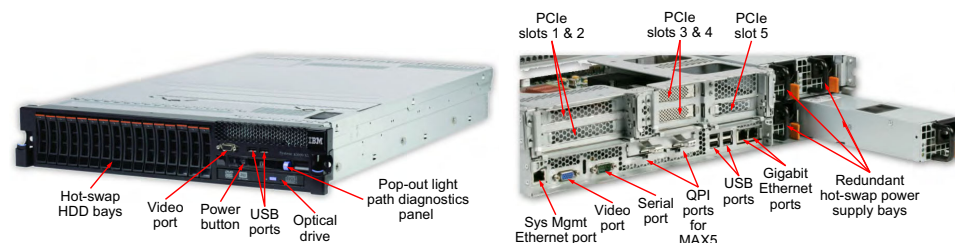http://www.redbooks.ibm.com/abstracts/tips0818.html?Open

IBM System x3690 X5 (7147) workload optimized models (page 2)

Model[1]	Processor (2 maximum)	Second CPU	MAX5	Memory	Memory mezzanine	RAID adapters	Disk bays	Disks	Network	Optical	Power (4 max)	Announced
SAP HANA workload-optimized models*												
7147-HAx	2x Xeon E7-2870 10C 2.40GHz 30MB 1066 MHz	88Y5663	Not supported[a]	8x 16 GB	Standard	2x M5015 (with Perf keys)	16x1.8"/24	10x 200GB SSD	6x 1Gb + 4x 10Gb[b]	Multiburner	4x 675 W	Oct 2012
7147-HBx	2x Xeon E7-2870 10C 2.40GHz 30MB 1066 MHz	88Y5663	Not supported[a]	16x 16 GB	Standard	2x M5015 (with Perf keys)	16x1.8"/24	10x 200GB SSD	6x 1Gb + 4x 10Gb[b]	Multiburner	4x 675 W	Oct 2012

    a. MAX5 is not currently certified for use with SAP HANA and is therefore not supported.
    b. The H models include one Emulex 10GbE Integrated Virtual Fabric Adapter II (with two IBM 10GbE SW SFP+ Transceivers) and one Intel Ethernet Quad Port Server Adapter I340-T4. HAx and HBx models also include an additional Emulex 10GbE Virtual Fabric Adapter II (with two IBM 10GbE SW SFP+ Transceivers).

Components	Specification
Form factor/height	Rack/2U per chassis; MAX5 adds 1U.
Processor (maximum)	**Intel Xeon E7-2800, E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	One or two standard (model-dependent), two maximum.
Cache (maximum)	**Up to 30 MB**.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	**Up to 64 DIMM sockets**: ► 16 on the system board ► 32 total with an optional memory mezzanine ► 64 total with an optional MAX5 and memory mezzanine
Memory maximums	**Up to 2 TB of RAM** using all 32 GB DIMMs: ► 512 GB without the memory mezzanine ► 1 TB total with the memory mezzanine populated ► 2 TB total with the memory mezzanine and MAX5 populated
Expansion slots	**Up to 5 PCIe 2.0 slots** depending on the riser cards used.
Disk bays	**Up to 16x 2.5-inch** SAS hot-swap bays or **up to 24x 1.8-inch solid-state drive** (SSD) hot-swap bays.
Optical drive	Optional.
Maximum internal storage	**16 TB per chassis** (using 1 TB 2.5-inch NL SAS drives).
Network interface	Two 1 Gb Ethernet ports, **Broadcom5709C** controller. **Emulex 10 GB Virtual Fabric Adapter** with two 10 GB Ethernet ports (standard on some models, optional on the others). One Intel Ethernet Quad Port Server Adapter I340-T4 (standard on some workload-optimized models).
Power supply	Server: Up to four 675 W hot-swap redundant power supplies. MAX5: Two 675 W hot-swap redundant power supplies.
Hot-swap parts	Power supplies, fans, and hard disk drives.
RAID support	Most models: **ServeRAID M1015 controller** standard supporting RAID 0, 1, 10, 5, and 50.
Systems management	Alert on LAN 2, automatic server restart, IBM Director, IBM ServerGuide, integrated management module (IMM), light path diagnostics (independently powered), predictive failure analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, and dynamic system analysis.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Datacenter editions 64-bit), 64-bit Red Hat Enterprise Linux and SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere.
Limited warranty	Three-year customer replaceable unit and on-site limited warranty.
Dimensions	Height: 86 mm (3.5 inches, 2U), depth: 698 mm (27.4 inches), width: 429 mm (16.8 inches).
Weight	31.3 kg (69 lb) when fully configured.
* Preinstalled software	Hxx models include SLES for SAP, IBM GPFS, and the SAP HANA software stack preinstalled. F1x model includes VMware ESXi 4.1 Update 1 on an integrated USB key. F2x model includes Red Hat Enterprise Linux with the Red Hat Enterprise. The hypervisor is not preinstalled on any disk.

Popular and system-unique options (see the model table for processor options):

Part	Description
88Y6529	IBM MAX5 V2 for System x
59Y6269	IBM MAX5 to x3690 X5 Cable Kit
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
46C7483	16GB (1x16GB, 4Rx4, 1.5V) PC3-8500 CL7 ECC DDR3 1066MHz
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM
60Y0339	IBM 4x 2.5" HS SAS HDD Backplane
60Y0381	IBM 8x 2.5" HS SAS HDD Backplane
60Y0360	IBM eXFlash 8x 1.8" HS SAS SSD Backplane
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
49Y2003	IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
43W7746	IBM 200 GB SATA 1.8-inch MLC SSD
46M0902	UltraSlim Enhanced SATA Multi-Burner

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3690 X5*:
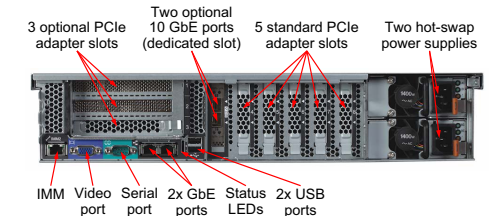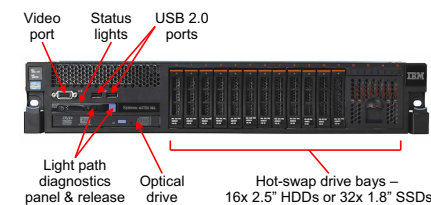http://www.redbooks.ibm.com/abstracts/tips0818.html?Open

IBM System x3750 M4 (E5-4600)

Model[1]	Intel Xeon Processor (4 maximum)	Add'l CPUs	Memory	RAID controller	Disk bays	Disks	PCIe	GbE	Optical	Power	Announced
8722-A1x	2x E5-4617 6C 2.9GHz 15MB 1600MHz 130W	88Y7354	2x 8GB RDIMM 1600 MHz	M5110e	4x 2.5" HS / 16	Open	5 / 8	2	Open	1x 1400W	May 2012
8722-A2x	1x E5-4603 4C 2.0GHz 10MB 1066MHz 95W[a]	88Y7446	1x 8GB RDIMM 1333 MHz	M5110e	Open	Open	5 / 8	2	Open	1x 1400W	May 2012
8722-A3x	2x E5-4607 6C 2.2GHz 12MB 1066MHz 95W	88Y7342	2x 8GB RDIMM 1333 MHz	M5110e	4x 2.5" HS / 16	Open	5 / 8	2	Open	1x 1400W	May 2012
8722-B1x	2x E5-4610 6C 2.4GHz 15MB 1333MHz 95W	88Y7336	2x 8GB RDIMM 1333 MHz	M5110e	4x 2.5" HS / 16	Open	5 / 8	2	Open	1x 1400W	May 2012
8722-B2x	2x E5-4620 8C 2.2GHz 16MB 1333MHz 95W	88Y7330	2x 8GB RDIMM 1333 MHz	M5110e	8x 1.8" HS / 32	Open	8 / 8	2	Open	1x 1400W	May 2012
8722-C1x	2x E5-4640 8C 2.4GHz 20MB 1600MHz 95W	88Y7348	2x 8GB RDIMM 1333 MHz	M5110e + 1 GB[b]	4x 2.5" HS / 16	Open	8 / 8	2	Open	1x 1400W	May 2012
8722-C2x	2x E5-4650 8C 2.7GHz 20MB 1600MHz 130W	88Y7324	2x 8GB RDIMM 1333 MHz	M5110e + 1 GB[b]	4x 2.5" HS / 16	Open	5 / 8	2	Open	1x 1400W	May 2012
8722-D1x	4x E5-4610 6C 2.4GHz 15MB 1333MHz 95W	88Y7336	24x 8GB RDIMM 1333 MHz	M5110e + 1xM5110[b]	16x 1.8" HS / 32	16x 200GB SSD	8 / 8	2	Open	2x 1400W	May 2012
8722-D2x	4x E5-4650 8C 2.7GHz 20MB 1600MHz 130W	88Y7324	24x16GB LRDIMM 1333MHz	M5110e + 3xM5110[b]	32x 1.8" HS / 32	32x 200GB SSD	8 / 8	2	Open	2x 1400W	May 2012

a. All models except for 8722-A2x include the processor and memory expansion tray containing sockets for CPUs 3 and 4 and 24 DIMMs. For model A2x, order part number 88Y7365
b. **Models C1x and C2x** include M5100 Series 1GB Flash/RAID 5 Upgrade (81Y4559). **Model D1x** includes one M5110 RAID adapter. **Model D2x** includes three M5110 RAID adapters. **Both D1x and D2x** also include M5100 Series 512MB Cache/RAID 5 Upgrade (81Y4484), M5100 Series Battery Kit (81Y4508), M5100 Series SSD Performance Key (90Y4273) for each standard RAID controller.

Components	Specification
Form factor	2U Rack.
Processor	Up to **four Intel Xeon processor E5-4600** product family CPUs, each with **eight cores** (up to 2.7 GHz) or six cores (up to 2.9 GHz) or four cores (up to 2.0 GHz). Two processor sockets on system planar and two processors on expansion tray (standard on all models except A2x). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz memory speed. Up to 20 MB L3 cache per CPU.
Chipset	Intel C600 series.
Memory	Up to **48 DIMM sockets** (12 DIMMs per processor). RDIMMs and LRDIMMs (Load Reduced DIMMs) supported, but memory types cannot be intermixed. **Memory speed up to 1600 MHz**. 24 DIMM sockets on system board. Additional 24 DIMM sockets on expansion tray (standard on all models except A2x).
Memory maximums	With RDIMMs: Up to 768 GB with 48x 16 GB RDIMMs and four processors. With LRDIMMs: **Up to 1.5 TB** with 48x 32 GB LRDIMMs and four processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Up to **16 2.5" hot-swap** SAS/SATA bays or up to **32 1.8" hot-swap** solid state drive (SSD) eXFlash bays. Drive bays can be in any combination of four 2.5" drives or eight 1.8" eXFlash SSD drives.
Maximum internal storage	**Up to 25.6 TB** with 1.6 TB SSDs, up to 19.2 TB with 1.2 TB 2.5" SAS HDDs, up to 16 TB with 1 TB 2.5" NL SAS/SATA HDDs. Intermix of SAS/SATA supported.
RAID support	RAID 0, 1, 10 with integrated ServeRAID M5110e with LSI SAS2208 6 Gbps RAID on Chip (ROC) controller; optional upgrades to RAID 5, 50 are available (zero-cache; 512 MB battery-backed cache; 512 MB or 1 GB flash-backed cache). Optional upgrade to RAID 6, 60 is available for 512 MB or 1 GB cache.
Media drive bays	One bay for optional Multiburner drive. No internal tape drive bay.
Network interfaces	**Emulex BE3** controller with two standard integrated Gigabit Ethernet 1000BASE-T ports (RJ-45) and two optional 10Gb ports via an adapter in a dedicated slot. 10 GbE options are 10Base-T (copper) or SFP+ (fiber).
PCI Expansion slots	**Up to eight PCIe 3.0 slots**, five on the system planar, three on an optional riser card. The slots are as follows (Slots 1, 2, and 3 are physically x16 slots): ▶ Slot 1: PCIe 3.0 x8; full-height, half-length (optional with riser card, CPU 2) ▶ Slot 2: PCIe 3.0 x8; full-height, half-length (optional with riser card, CPU 2) ▶ Slot 3: PCIe 3.0 x8; full-height, half-length (optional with riser card, CPU 2) ▶ Slot 4: PCIe 3.0 x8; low profile (requires CPU 2) ▶ Slot 5: PCIe 3.0 x8; low profile (requires CPU 2) ▶ Slot 6: PCIe 3.0 x8; low profile ▶ Slot 7: PCIe 3.0 x8; low profile ▶ Slot 8: PCIe 3.0 x8; low profile
Ports	Front: Two USB 2.0 and one DB-15 video on front. Rear: Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, two RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports. Internal: Two internal USB ports (for embedded hypervisor).
Cooling	IBM Calibrated Vectored Cooling with up to six N+N redundant hot swap fans (all six standard); each fan has two motors.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Hot-swap parts	Hard drives, power supplies, and fans.

Components	Specification
Power supply	Up to **two hot-swap redundant 1400 W** ac power supplies (80 PLUS Platinum certification). Second power supply requires processor expansion tray (88Y7365) or the power interposer card (88Y7367) installed.
Systems management	UEFI, IBM Integrated Management Module II (IMM2), **IMM2 Remote Presence**, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide.
Security features	Power-on password, administrator's password, Trusted Platform Module (TPM).
Operating systems supported	Microsoft Windows Server 2008, 2008 R2, 2012; RHEL 5 and 6; SLES 10 and 11; VMware ESX/ESXi 4.1, 5.0, 5.1
Limited warranty	3 year customer-replaceable unit and on-site limited warranty with 9x5 NBD
Service and support	Optional service upgrades are available through IBM ServicePacs: Four-hour or two-hour response time, eight-hour fix time, 1 or 2 -year warranty extension, remote technical support for IBM hardware and some IBM, OEM applications.
Dimensions	Height: 86 mm (3.4 in), width: 445 mm (17.5 in), depth: 746 mm (29.4 in)
Weight	Minimum configuration: 25 kg (55 lb), maximum: 30 kg (65 lb)

Video port, Status lights, USB 2.0 ports, Light path diagnostics panel & release, Optical drive, Hot-swap drive bays – 16x 2.5" HDDs or 32x 1.8" SSDs

Two optional 10 GbE ports (dedicated slot), 3 optional PCIe adapter slots, 5 standard PCIe adapter slots, Two hot-swap power supplies, IMM, Video port, Serial port, 2x GbE ports, Status LEDs, 2x USB ports

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1397	8GB (1x8GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3105	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
88Y7365	IBM System x3750 M4 processor and memory expansion tray
00D2020	IBM 4x 2.5" HS SAS HDD Backplane
00D2022	IBM 8x 2.5" HS SAS HDD Backplane
00D2011	IBM 8x 2.5" HS SAS HDD Backplane with RAID expansion (SAS expander)
00D2024	IBM eXFlash 8x 1.8" HS SAS SSD Backplane
46M0902	UltraSlim Enhanced SATA Multi-Burner
88Y7371	IBM x3750 M4 PCIe 3 x8 riser
88Y7373	IBM 1400W HE Redundant Power Supply
88Y7367	IBM Power Interposer for Redundant Power Supply

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3750 M4* at: http://www.redbooks.ibm.com/abstracts/tips0881.html?0pen

IBM System x3750 M4 (E5-4600 v2)

Model[1]	Intel Xeon Processor (4 maximum)[a]	Additional CPUs	Memory	RAID controller	Disk bays	Disks	PCIe	GbE[b]	Optical	Power	Announced
8752-A1x	2x E5-4627 v2 8C 3.3GHz 16MB 1866MHz 130W	00D1978	2x 8 GB 1866 MHz	M5210e	4x 2.5" 16 max	Open	5 / 8	4x 1GbE	Optional	1x 900W	Mar 2014
8752-A2x	1x E5-4603 v2 4C 2.2GHz 10MB 1333MHz 95W	00D1948	1x 8 GB[a] (1333 MHz)[c]	M5210e	Open	Open	5 / 8	4x 1GbE	Optional	1x 900W	Mar 2014
8752-A3x	2x E5-4607 v2 6C 2.6GHz 15MB 1333MHz 95W	00D1953	2x 8 GB (1333 MHz)[c]	M5210e	4x 2.5" 16 max	Open	5 / 8	4x 1GbE	Optional	1x 900W	Mar 2014
8752-B1x	2x E5-4610 v2 8C 2.3GHz 16MB 1600MHz 95W	00D1958	2x 8 GB 1600 MHz	M5210e	4x 2.5" 16 max	Open	5 / 8	4x 1GbE	Optional	1x 900W	Mar 2014
8752-B2x	2x E5-4620 v2 8C 2.6GHz 20MB 1600MHz 95W	00D1963	2x 8 GB 1600 MHz	M5210e	8x 1.8" 32 max	Open	8 / 8	4x 1GbE	Optional	1x 900W	Mar 2014
8752-C1x	2x E5-4640 v2 10C 2.2GHz 20MB 1866MHz 95W	00D1968	2x 8 GB 1600 MHz	M5210e 1 GB Flash[d]	8x 2.5" 16 max	Open	8 / 8	4x 1GbE	Optional	1x 900W	Mar 2014
8752-C2x	2x E5-4650 v2 10C 2.4GHz 25MB 1866MHz 95W	00D1973	2x 8 GB 1600 MHz	M5210e 1 GB Flash[d]	4x 2.5" 16 max	Open	5 / 8	2x 10GbE[b]	Optional	1x 900W	Mar 2014

a. All models except for 8752-A2x include the processor and memory expansion tray that contains sockets for processors 3 and 4, and 24 DIMMs. For model A2x, order part number 88Y7365.
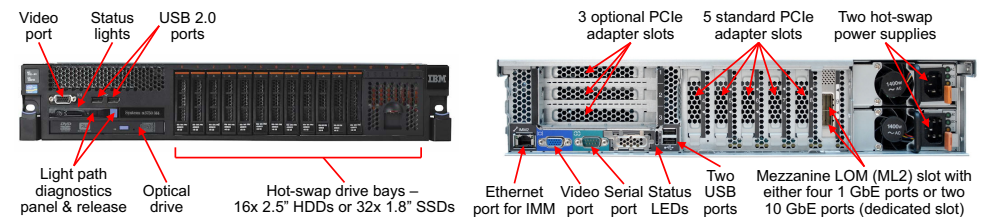b. Model C2x includes the Broadcom NetXtreme II ML2 Dual Port 10GbaseT adapter, 00D2026. All other models include the Intel I350-T4 ML2 Quad Port GbE Adapter, 00D1998
c. For models A2x and A3x, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed
d. Models C1x and C2x include the ServeRAID M5200 Series 1GB Flash/RAID 5 Upgrade (part number 47C8660) which is a 1 GB flash-backed cache with support for RAID 5.

Components	Specification
Form factor	2U Rack.
Processor	Up to four **Intel Xeon E5-4600 v2 processors**, each with **12 cores** (2.4 GHz), 10 cores (up to 2.4 GHz), 8 cores (up to 3.3 GHz), 6 cores (2.6 GHz), or 4 cores (2.2 GHz). Two processor sockets on system planar and two processors on expansion tray (standard on all models except A2x). **Two QPI links** up to 8.0 GT/s each. Up to 30 MB L3 cache per processor. Intel C600 series chipset.
Memory	Up to **48 DIMM sockets** (12 DIMMs per processor). RDIMMs and LRDIMMs (Load Reduced DIMMs) supported, but memory types cannot be intermixed. **Memory speed up to 1866 MHz**. 24 DIMM sockets on system board. Additional 24 DIMM sockets on expansion tray (standard on all models except A2x).
Memory maximums	With RDIMMs: Up to 768 GB with 48x 16 GB RDIMMs and four processors. With LRDIMMs: **Up to 1.5 TB** with 48x 32 GB LRDIMMs and four processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Up to **16 2.5" hot-swap** SAS/SATA bays or up to **32 1.8" hot-swap** solid state drive (SSD) eXFlash bays. Drive bays can be in any combination of four 2.5" drives or eight 1.8" eXFlash SSD drives.
Maximum internal storage	**Up to 25.6 TB** with 1.6 TB 2.5" SSDs, up to 19.2 TB with 1.2 TB 2.5" SAS HDDs, up to 16 TB with 1 TB 2.5" NL SAS/SATA HDDs. Intermix of SAS/SATA supported.
RAID support	RAID 0, 1, 10 with integrated **ServeRAID M5210e** with LSI SAS3108 **RAID** on Chip (ROC) controller. Optional upgrades to RAID 5 and 50 are available (1GB cache no battery, or 1 or 2 GB flash-backed cache). Optional upgrades to RAID 6 and 60.
Media drive bays	One bay for optional Multiburner drive. No internal tape drive bay.
Network interfaces	Dedicated **mezzanine LOM adapter slot** for a choice of 2-port 10 GbE (RJ45 or SFP+) or 4-port 1 GbE controller. One port can optionally be shared with the IMM2 management processor. Standard models include Intel I350-T4 ML2 Quad Port GbE Adapter (I350 based) except model C2x which includes Broadcom NetXtreme II ML2 Dual Port 10GbaseT (BRCM57810 based)
PCI Expansion slots	**Up to eight PCIe 3.0 slots**, five on the system planar, three on an optional riser card. The slots are as follows (Slots 1, 2, and 3 are physically x16 slots; alternative riser 2-slot with one x16 and one x8 slot also available): ▸ Slot 1: PCIe 3.0 x8; full-height, half-length (optional with riser card, CPU 2) ▸ Slot 2: PCIe 3.0 x8; full-height, half-length (optional with riser card, CPU 2) ▸ Slot 3: PCIe 3.0 x8; full-height, half-length (optional with riser card, CPU 2) ▸ Slot 4: PCIe 3.0 x8; low profile (requires CPU 2) ▸ Slot 5: PCIe 3.0 x8; low profile (requires CPU 2) ▸ Slot 6: PCIe 3.0 x8; low profile ▸ Slot 7: PCIe 3.0 x8; low profile ▸ Slot 8: PCIe 3.0 x8; low profile
Ports	Front: Two USB 2.0 and one DB-15 video on front. Rear: Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management ports, ML2 adapter with either four 1 GbE network ports or two 10 GbE (RJ-45 or SFP+) network ports in dedicated slot. Internal: Two internal USB ports (hypervisor).
Cooling	IBM Calibrated Vectored Cooling with up to six N+N redundant hot swap fans (all six standard); each fan has two motors.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Hot-swap parts	Hard drives, power supplies, and fans.
Power supply	Up to **two hot-swap redundant** AC power supplies (80 PLUS Platinum certification). Standard models use 900W supplies; available 1400W AC and 750W DC options. Second power supply requires processor expansion tray (88Y7365) or the power interposer card (88Y7367) installed.
Systems management	UEFI, IBM Integrated Management Module II (IMM2), **IMM2 Remote Presence**, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide.
Security features	Power-on password, administrator's password, Trusted Platform Module (TPM).
Operating systems supported	Microsoft Windows Server 2008 R2, 2012, 2012 R2; RHEL 6 x64; SLES 11 x64; VMware vSphere 5.1, 5.5
Limited warranty	3 year customer-replaceable unit and on-site limited warranty with 9x5 NBD
Service and support	Optional service upgrades are available through IBM ServicePacs: Four-hour or two-hour response time, eight-hour fix time, 1 or 2 -year warranty extension, remote technical support for IBM hardware and some IBM, OEM applications.
Dimensions	Height: 86 mm (3.4 in), width: 445 mm (17.5 in), depth: 746 mm (29.4 in)
Weight	Minimum configuration: 25 kg (55 lb), maximum: 30 kg (65 lb)

Video port / Status lights / USB 2.0 ports / Light path diagnostics panel & release / Optical drive / Hot-swap drive bays – 16x 2.5" HDDs or 32x 1.8" SSDs / 3 optional PCIe adapter slots / 5 standard PCIe adapter slots / Two hot-swap power supplies / Ethernet port for IMM / Video port / Serial port / Status LEDs / Two USB ports / Mezzanine LOM (ML2) slot with either four 1 GbE ports or two 10 GbE ports (dedicated slot)

Popular and system-unique options (see the model table for processor options):

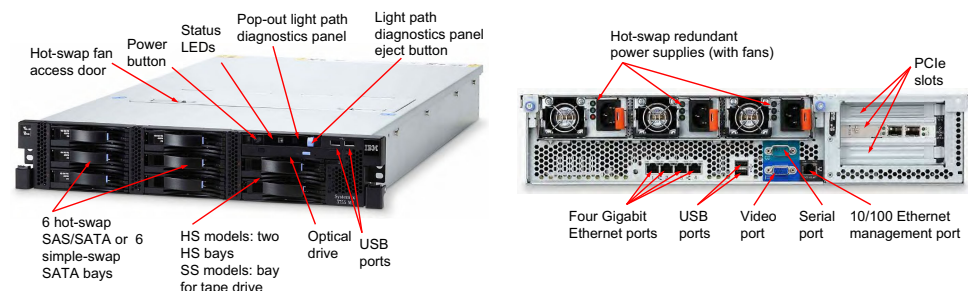| Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
88Y7365	IBM System x3750 M4 processor and memory expansion tray
00D2020	IBM 4x 2.5" HS SAS HDD Backplane
00D2022	IBM 8x 2.5" HS SAS HDD Backplane
00D2011	IBM 8x 2.5" HS SAS HDD Backplane with RAID expansion (SAS expander)
00D2024	IBM eXFlash 8x 1.8" HS SAS SSD Backplane
46M0902	UltraSlim Enhanced SATA Multi-Burner
88Y7371	IBM x3750 M4 PCIe 3 x8 riser
44X4152	IBM 1400W HE Redundant Power Supply
88Y7367	IBM Power Interposer for Redundant Power Supply

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3750 M4 (E5-4600 v2)* at: http://www.redbooks.ibm.com/abstracts/tips1159.html?Open

IBM System x3755 M3 (AMD Opteron 6300)

Model[1]	AMD Opteron processors (4 maximum)	Additional CPUs	Memory	RAID adapter	Disk bays	Disks	Network	Optical	Power supply	Announced
7164-F3x	2x AMD Opteron 6380 16C 2.5 GHz 16MB 115W	00AM123	4x 8 GB	M5015 +Battery	8x 3.5" HS / 8	Open	4x GbE	Optional	1x 1100W HS / 3	Nov 2013

Components	Specification
Form factor	2U rack.
Processor	Up to four **AMD Opteron 6300 processors**. Either 16 cores (up to 2.8 GHz) or 12 cores (up to 2.8 GHz) or 8 cores (up to 3.2 GHz) or 4 cores (3.5 GHz), HyperTransport 3 technology up to 6.4 GT/s, and up to 1600 MHz memory speed.
Memory cache	Up to 16 MB L3.
Chip set	AMD SB5790 and SP5100
Memory sockets	**Up to 32 DIMM sockets** (eight DIMMs per processor).
Memory	Supports RDIMMs With RDIMMs: **Up to 512 GB** using 16 GB DDR3 RDIMMs and four processors.
Memory protection	ECC, Chipkill (for x4-based and x8-based memory DIMMs), memory sparing.
Disk drive bays	Up to six 3.5" simple-swap (SS) SATA HDD bays (CTO only), or **up to eight 3.5" hot-swap** (HS) SAS/SATA HDD bays.
Maximum internal storage	**Up to 32.0 TB** with 4 TB 3.5" HS NL SATA HDDs Up to 4.8 TB with 600 GB 3.5" HS SAS HDDs Up to 18.0 TB with 3 TB 3.5" SS SATA HDDs (CTO only) Intermix of SAS and SATA is supported.
RAID support	**RAID 0, 1, or 1E with ServeRAID M1015** with optional RAID 5; **RAID 0, 1, 5, 10, or 50 with ServeRAID M5015**. Optional upgrade to RAID 6 and 60 is available for M5015. BR10ilV2 and M5014 also available (CTO only).
Optical drive bays	One with support for optional UltraSlim DVD-ROM or multiburner.
Tape drive bays	None in standard models with hot-swap HDDs. One optional in CTO models with simple-swap HDDs.
Network interfaces	**Four integrated Gigabit Ethernet ports** using two dual-port **Broadcom 5709C** Ethernet controllers.
PCI expansion slots	The server offers **four PCI Express slots** (with one reserved for the RAID controller): ▶ Slot 1: PCIe 2.0 x16, full height, full length ▶ Slot 2: PCIe 2.0 x8, low profile, half length ▶ Slot 3: PCIe 2.0 x8 (x4 wired), low profile, half length ▶ Slot 4: PCIe 2.0 x8, low profile, half length (internal only, reserved for RAID controller)
External ports	Two USB 2.0 on front. Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 network ports on rear. One internal USB port for embedded hypervisor.
Cooling	**Five hot swap fans** with **N+1 redundancy** (standard models) or five non-hot swap non-redundant fans (only available by using CTO).
Power supply	Up to **three redundant hot-swap** 1100 W ac power supplies with N+N or N+1 redundancy depending on the configuration.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Systems management	UEFI, Integrated Baseboard Management Controller (iBMC) with standard remote presence (graphics, keyboard, mouse, and virtual media), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director versions 6.2.1 and 6.3, and IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Aspeed AST2050 with 8 MB of memory integrated into iBMC. Maximum resolution is 1280x1024 at 100 Hz with 64 K colors.
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 11, VMware vSphere 5.1 or 5.5 embedded hypervisor.
Limited warranty	Three-year customer-replaceable unit and on-site 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.

Components	Specification
Dimensions	Width: 446 mm (17.6 in), depth: 728 mm (28.6 in), height: 87 mm (3.4 in).
Weight	Minimum configuration: 22 kg (48.6 lb), maximum configuration: 33 kg (72.7 lb).

Popular and system-unique options:

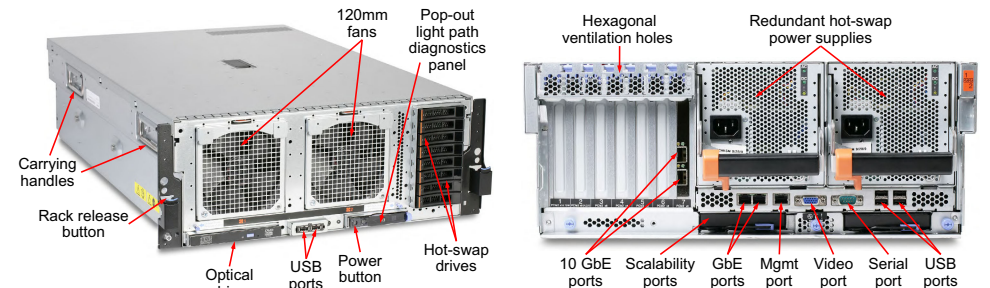| Part	Description
46W0779	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0771	8GB (1x8GB, 1Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
44W2244	IBM 600GB 15K 6Gbps SAS 3.5" Hot-Swap HDD
44W2239	IBM 450GB 15K 6Gbps SAS 3.5" Hot-Swap HDD
49Y6205	IBM 4TB 7.2K 6Gbps NL SAS 3.5" HS HDD
81Y9758	IBM 3TB 7.2K 6Gbps NL SAS 3.5" HS HDD
49Y6185	IBM 4TB 7.2K 6Gbps NL SATA 3.5" HS HDD
81Y9774	IBM 3TB 7.2K 6Gbps NL SATA 3.5" HS HDD
46M0902	IBM UltraSlim Enhanced SATA Multi-Burner
49Y7342	1100W Redundant Power Supply

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3755 M3*:
http://www.redbooks.ibm.com/abstracts/tips0838.html?Open

IBM System x3850 X5 (7143)

Model[1]	Processor	Scale to 2-node without MAX5	Scale to 2-node with MAX5	MAX5	Memory (standard cards)	RAID adapter	Disk bays	Disks	Network	Optical	Power (2 max.)	Announced
7143-B1x	2x Xeon E7-4807 6C 1.86 GHz 18 MB 800 MHz	No	Yes	Optional	2x 4 GB (1)	Optional	0 / 8 (2.5" HDD)	Open	2x 1 Gb	Optional	1x 1975 W	Apr 2011
7143-B2x	2x Xeon E7-4820 8C 2.00 GHz 18 MB 978 MHz	No	Yes	Optional	4x 4 GB (2)	M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011
7143-B3x	2x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz	No	Yes	Optional	4x 4 GB (2)	M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011
7143-B5x	2x Xeon E7-4850 10C 2.00 GHz 24 MB 1066 MHz	No	Yes	Optional	4x 4 GB (2)	M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011
7143-B6x	2x Xeon E7-4860 10C 2.26 GHz 24 MB 1066 MHz	No	Yes	Optional	4x 4 GB (2)	M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011
7143-B7x	2x Xeon E7-4870 10C 2.40 GHz 30 MB 1066 MHz	No	Yes	Optional	4x 4 GB (2)	M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011
7143-C1x	2x Xeon E7-8850 10C 2.00 GHz 24 MB 1066 MHz	Yes	Yes	Optional	4x 4 GB (2)	M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011
7143-C2x	2x Xeon E7-8860 10C 2.26 GHz 24 MB 1066 MHz	Yes	Yes	Optional	4x 4 GB (2)	M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011
7143-C3x	2x Xeon E7-8870 10C 2.40 GHz 30 MB 1066 MHz	Yes	Yes	Optional	4x 4 GB (2)	M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011

Components	Specification
Form factor/height	Rack/4U per chassis; MAX5 adds 1U.
Scalability	The x3850 X5, type 7143, supports **system scalability** as follows: One server (4U rack-mounted complex) One server with MAX5 memory expansion unit (5U rack-mounted complex) Two servers (8U rack-mounted complex) Two servers with two MAX5 memory expansion units (10U rack-mounted complex) Some processors limit the scalability options. For details, see the *IBM System x3850 X5 Product Guide*.
Processor type	**Intel Xeon E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor. **Up to eight processors** when scaled to two servers.
Number of processors	Most models: two standard (some have four processors as standard); four maximum.
Cache (maximum)	**Up to 30 MB**.
Memory DIMM sockets	Up to eight memory cards (In the model table, the Memory column lists the standard number of memory cards in parentheses.) Each memory card has eight DIMM sockets (**64 DIMM sockets total**). **MAX5 adds 32 DIMM sockets**.
Memory maximums	Machine type 7143: **Up to 2.0 TB** using 32 GB DIMMs Up to 3.0 TB with the addition of MAX5
Expansion slots	**Eight PCIe 2.0 slots total**: Seven PCIe 2.0 slots (one used by a 10 GB Ethernet card, if included). One PCIe 2.0 slot for supported RAID card.
Disk bays	**Eight 2.5" hot-swap** SAS or **sixteen 1.8" solid-state drives** (SSD).
Maximum internal storage	**8 TB per chassis** (using eight 1 TB 2.5" NL SAS HDDs).
Network interface	Two 1 Gb Ethernet ports. **Broadcom 5709C** controller. **Emulex 10 GB Virtual Fabric Adapter standard** on most models with two 10 Gb Ethernet ports.
Power supply	Up to two hot-swap redundant 1975-W power supplies.
Hot-swap parts	Power supplies, fans, hard disk drives, and solid-state-drives.
RAID support	7143: Integrated RAID 0 or RAID 1 with ServeRAID M1015 in dedicated PCIe slot. Optional RAID 5, 6, 10, 50, or 60.
External ports	Rear: Scalability ports, one Ethernet for systems management, one serial port, four USB 2.0, one VGA, two Gb Ethernet cards, two 10 GB Ethernet cards (most models). Front: Two USB 2.0. Internal: One USB 2.0 port for **Embedded Hypervisor**.
Systems management	Alert on LAN 2, Automatic Server Restart, IBM Systems Director, IBM ServerGuide, integrated management module (IMM), **light path diagnostics**, Predictive Failure Analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, Dynamic System Analysis™, and QPI Faildown.

Components	Specification
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Data Center Editions 64-bit), 64-bit Red Hat Enterprise Linux, 64-bit SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere Hypervisor.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.
Dimensions	Width: 440 mm (17.3 inches), depth: 712 mm (28.0 inches), height: 173 mm (6.8 inches) or 4 rack units (4U).
Weight	Minimum configuration: 35.4 kg (78 lb), maximum configuration: 49.9 kg (110 lb).

Popular and system-unique options:

Part	Description
88Y6529	IBM MAX5 V2 for System x
59Y6267	IBM MAX5 to x3850 X5 Cable Kit (four cables)
46M0072	IBM x3850 X5 and x3950 X5 QPI Scalability Kit (four cables)
59Y6271	IBM eX5™ MAX5 2-Node EXA Scalability Kit (for machine type 7143 only)
69Y1888	IBM x3850 X5 and x3950 X5 Memory Expansion Card (machine type 7143 only)
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
46C7483	16GB (1x16GB, 4Rx4, 1.5V) PC3-8500 CL7 ECC DDR3 1066MHz
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
59Y6213	IBM eXFlash 8x 1.8-inch HS SAS SSD Backplane - supports eight 1.8" drives
59Y6135	IBM 2.5" Hot Swap SAS Hard Disk Drive Backplane - supports four 2.5-inch drives
59Y6139	IBM 1975 W Power Supply (x3850 X5)

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3850 X5*: http://www.redbooks.ibm.com/abstracts/tips0817.html?0pen

IBM System x3950 X5 (7143) database optimized models

Model[1]	Processor	Scale to 2-node without MAX5	Scale to 2-node with MAX5	MAX5	Memory (standard cards)	RAID adapter	Disk bays	Disks	Network	DVD	Power (2 max.)	Announced
Database workload-optimized models												
7143-D3x	4x Xeon E7-4850 10C 2.00 GHz 24 MB 1066 MHz	No	Yes	Optional	32x 4 GB (8)	2x 6 Gb SSD HBA	16 / 16 (1.8" SSD)	16x 200 GB	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Feb 2013
7143-D4x	4x Xeon E7-4860 10C 2.26 GHz 24 MB 1066 MHz	No	Yes	Optional	32x 4 GB (8)	4x M5015 + perf keys	16 / 16 (1.8" SSD)	16x 200 GB	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Feb 2013

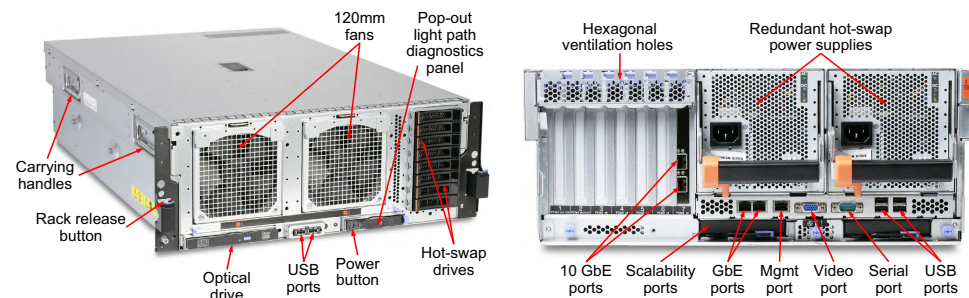| Components	Specification
Form factor/height	Rack/4U per chassis; MAX5 adds 1U.
Scalability	The x3950 X5, type 7143, supports **system scalability** as follows: ▶ One server (4U rack-mounted complex) ▶ One server with MAX5 memory expansion unit (5U rack-mounted complex) ▶ Two servers (8U rack-mounted complex) ▶ Two servers with two MAX5 memory expansion units (10U rack-mounted complex) Some processors limit the scalability options. For details, see the *IBM System x3850 X5 Product Guide*.
Processor type	Machine type 7143: **Intel Xeon E7-8800 and E7-4800 families**, up to 10 cores.
Processors	Most models: two standard (some have four processors as standard); four maximum.
Cache (maximum)	**Up to 30 MB**.
Memory DIMM sockets	Up to eight memory cards (In the model table, the Memory column lists the standard number of memory cards in parentheses.) Each memory card has eight DIMM sockets (**64 DIMM sockets total**). **MAX5 adds 32 DIMM sockets**.
Memory maximums	Machine type 7143: ▶ **Up to 2.0 TB** using 32 GB DIMMs ▶ **Up to 3.0 TB with the addition of MAX5**
Expansion slots	**Eight PCIe 2.0 slots total**: ▶ Seven PCIe 2.0 slots (one used by 10 GB Ethernet card, if included). ▶ One PCIe 2.0 slot for supported RAID card.
Disk bays	**Eight 2.5" hot-swap** SAS or **sixteen 1.8" solid-state drives** (SSD).
Maximum internal storage	**8 TB per chassis** (using eight 1 TB 2.5" NL SAS HDDs).
Network interface	Two 1 Gb Ethernet ports. Broadcom 5709C controller. **Emulex 10 GB Virtual Fabric Adapter standard** on most models with two 10 Gb Ethernet ports.
Power supply	Up to two hot-swap redundant 1975-W power supplies.
Hot-swap parts	Power supplies, fans, hard disk drives, and solid-state-drives.
RAID support	7143: Integrated RAID 0 or RAID 1 with ServeRAID M1015 in dedicated PCIe slot. Optional RAID 5, 6, 10, 50, or 60.
External ports	Rear: Scalability ports, one Ethernet for systems management, one serial port, four USB 2.0, one VGA, two Gb Ethernet cards, two 10 GB Ethernet cards (most models). Front: Two USB 2.0. Internal: One USB 2.0 port for **Embedded Hypervisor**.
Systems management	Alert on LAN 2, Automatic Server Restart, IBM Systems Director, IBM ServerGuide, integrated management module (IMM), **light path diagnostics**, Predictive Failure Analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, Dynamic System Analysis, and QPI Faildown.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Data Center Editions 64-bit), 64-bit Red Hat Enterprise Linux, 64-bit SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere Hypervisor.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.
Dimensions	Width: 440 mm (17.3 inches), depth: 712 mm (28.0 inches), height: 173 mm (6.8 inches) or 4 rack units (4U).
Weight	Minimum configuration: 35.4 kg (78 lb), maximum configuration: 49.9 kg (110 lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
88Y6529	IBM MAX5 V2 for System x
59Y6267	IBM MAX5 to x3850 X5 Cable Kit (four cables)
46M0072	IBM x3850 X5 and x3950 X5 QPI Scalability Kit (four cables)
59Y6271	IBM eX5 MAX5 2-Node EXA Scalability Kit (for machine type 7143 only)
69Y1888	IBM x3850 X5 and x3950 X5 Memory Expansion Card (machine type 7143 only)
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
46C7483	16GB (1x16GB, 4Rx4, 1.5V) PC3-8500 CL7 ECC DDR3 1066MHz
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
59Y6213	IBM eXFlash 8x 1.8-inch HS SAS SSD Backplane - supports eight 1.8" drives
59Y6135	IBM 2.5" Hot Swap SAS Hard Disk Drive Backplane - supports four 2.5-inch drives

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3850 X5*:
http://www.redbooks.ibm.com/abstracts/tips0817.html?Open

IBM System x3950 X5 (7143) virtualization optimized models

Model[1]	Processor	Scale to 2-node without MAX5	Scale to 2-node with MAX5	MAX5	Memory (standard cards)	RAID adapter	Disk bays	Disks	Network	DVD	Power (2 max.)	Announced / Withdrawn
Virtualization workload-optimized models												
7143-F1x (ESX)	4x Xeon E7-4860 10C 2.26 GHz 24 MB 1066 MHz	No	Yes	Standard (V2)	Server: 64x 4 GB (8) MAX5: 32x 4 GB	1x M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011
7143-F2x (RH)	4x Xeon E7-4860 10C 2.26 GHz 24 MB 1066 MHz	No	Yes	Standard (V2)	Server: 64x 4 GB (8) MAX5: 32x 4 GB	1x M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011
7143-B9x (ESX)	4x Xeon E7-4807 6C 1.86GHz 18MB 800MHz	No	Yes	Standard (V2)	Server: 64x 4 GB (8) MAX5: 32x 4 GB	1x M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011

Components	Specification
Form factor/height	Rack/4U per chassis; MAX5 adds 1U.
Scalability	The x3950 X5, type 7143, supports **system scalability** as follows: ▶ One server (4U rack-mounted complex) ▶ One server with MAX5 memory expansion unit (5U rack-mounted complex) ▶ Two servers (8U rack-mounted complex) ▶ Two servers with two MAX5 memory expansion units (10U rack-mounted complex) Some processors limit the scalability options. For details, see the *IBM System x3850 X5 Product Guide*.
Processor type	Machine type 7143: **Intel Xeon E7-8800 and E7-4800 families**, up to 10 cores.
Processors	Most models: two standard (some have four processors as standard); four maximum.
Cache (maximum)	**Up to 30 MB**.
Memory DIMM sockets	Up to eight memory cards (In the model table, the Memory column lists the standard number of memory cards in parentheses.) Each memory card has eight DIMM sockets (**64 DIMM sockets total**). **MAX5 adds 32 DIMM sockets**.
Memory maximums	Machine type 7143: ▶ **Up to 2.0 TB** using 32 GB DIMMs ▶ **Up to 3.0 TB with the addition of MAX5**
Expansion slots	**Eight PCIe 2.0 slots total**: ▶ Seven PCIe 2.0 slots (one used by 10 GB Ethernet card, if included). ▶ One PCIe 2.0 slot for supported RAID card.
Disk bays	**Eight 2.5" hot-swap** SAS or **sixteen 1.8" solid-state drives** (SSD).
Maximum internal storage	**8 TB per chassis** (using eight 1 TB 2.5" NL SAS HDDs).
Network interface	Two 1 Gb Ethernet ports. Broadcom 5709C controller. **Emulex 10 GB Virtual Fabric Adapter standard** on most models with two 10 Gb Ethernet ports.
Power supply	Up to two hot-swap redundant 1975-W power supplies.
Hot-swap parts	Power supplies, fans, hard disk drives, and solid-state-drives.
RAID support	7143: Integrated RAID 0 or RAID 1 with ServeRAID M1015 in dedicated PCIe slot. Optional RAID 5, 6, 10, 50, or 60.
External ports	Rear: Scalability ports, one Ethernet for systems management, one serial port, four USB 2.0, one VGA, two Gb Ethernet cards, two 10 GB Ethernet cards (most models). Front: Two USB 2.0. Internal: One USB 2.0 port for **Embedded Hypervisor**.
Systems management	Alert on LAN 2, Automatic Server Restart, IBM Systems Director, IBM ServerGuide, integrated management module (IMM), **light path diagnostics**, Predictive Failure Analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, Dynamic System Analysis, and QPI Faildown.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Data Center Editions 64-bit), 64-bit Red Hat Enterprise Linux, 64-bit SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere Hypervisor.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.
Dimensions	Width: 440 mm (17.3 inches), depth: 712 mm (28.0 inches), height: 173 mm (6.8 inches) or 4 rack units (4U).
Weight	Minimum configuration: 35.4 kg (78 lb), maximum configuration: 49.9 kg (110 lb).

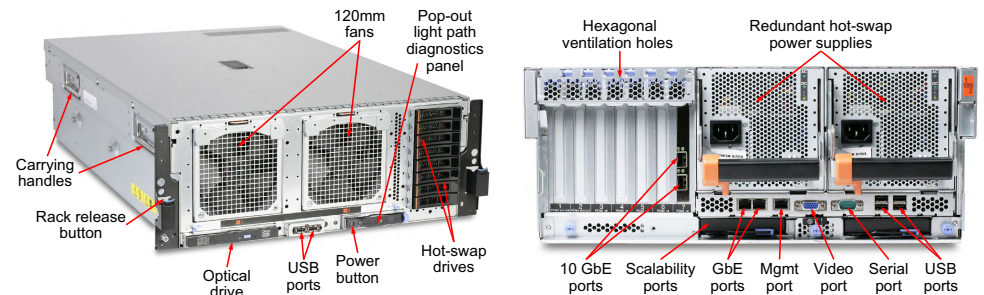**Popular and system-unique options (see the model table for processor options):**

Part	Description
88Y6529	IBM MAX5 V2 for System x
59Y6267	IBM MAX5 to x3850 X5 Cable Kit (four cables)
46M0072	IBM x3850 X5 and x3950 X5 QPI Scalability Kit (four cables)
59Y6271	IBM eX5 MAX5 2-Node EXA Scalability Kit (for machine type 7143 only)
69Y1888	IBM x3850 X5 and x3950 X5 Memory Expansion Card (machine type 7143 only)
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
46C7483	16GB (1x16GB, 4Rx4, 1.5V) PC3-8500 CL7 ECC DDR3 1066MHz
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
59Y6213	IBM eXFlash 8x 1.8-inch HS SAS SSD Backplane - supports eight 1.8" drives
59Y6135	IBM 2.5" Hot Swap SAS Hard Disk Drive Backplane - supports four 2.5-inch drives

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3850 X5*:
http://www.redbooks.ibm.com/abstracts/tips0817.html?Open

IBM System x3950 X5 (7143) SAP HANA workload-optimized models

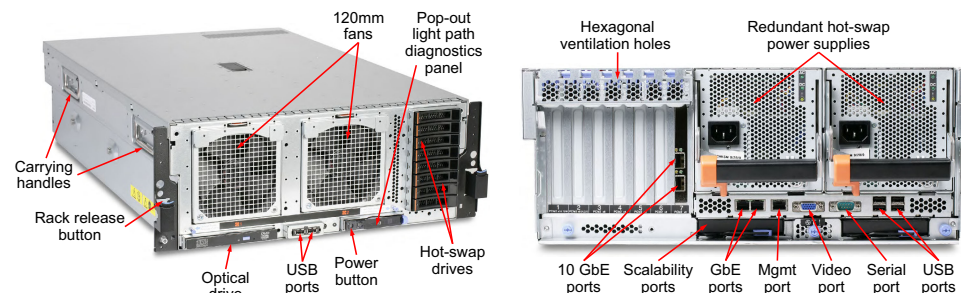| Model[1]	Processor	Scale to 2-node	Use of MAX5	Memory (standard cards)	RAID adapter	Disk bays	Disks	Network	Optical	Power (2 max.)	Announced
SAP HANA workload-optimized models											
7143-HAx	2x Xeon E7-8870 10C 2.40 GHz 30 MB 1066 MHz	Yes	Not supported[a]	16x 16 GB (4)	1x M5015 + battery	8 / 8 (2.5" HDD)	8x 900 GB 10K SAS 1x 1.2TB GB PCIe	6x 1 Gb + 4x 10 Gb[b]	Multiburner	2x 1975 W	Oct 2012
7143-HBx	4x Xeon E7-8870 10C 2.40 GHz 30 MB 1066 MHz	Yes	Not supported[a]	32x 16 GB (8)	1x M5015 + battery	8 / 8 (2.5" HDD)	8x 900 GB 10K SAS 1x 1.2TB GB PCIe	6x 1 Gb + 4x 10 Gb[b]	Multiburner	2x 1975 W	Oct 2012
7143-HCx	4x Xeon E7-8870 10C 2.40 GHz 30 MB 1066 MHz	Yes[c]	Not supported[a]	32x 16 GB (8)	1x M5015 + battery	8 / 8 (2.5" HDD)	8x 900 GB 10K SAS 1x 1.2TB GB PCIe	6x 1 Gb + 4x 10 Gb[b]	Optional	2x 1975 W	Oct 2012
7143-HDx	4x Xeon E7-8870 10C 2.40 GHz 30 MB 1066 MHz	Yes	Not supported[a]	32x 32 GB (8)	1x M5015 + battery	8 / 8 (2.5" HDD)	8x 900 GB 10K SAS 1x 1.2TB GB PCIe	6x 1 Gb + 4x 10 Gb[b]	Multiburner	2x 1975 W	Jun 2013
7143-HEx	4x Xeon E7-8870 10C 2.40 GHz 30 MB 1066 MHz	Yes[c]	Not supported[a]	32x 32 GB (8)	1x M5015 + battery	8 / 8 (2.5" HDD)	8x 900 GB 10K SAS 1x 1.2TB GB PCIe	6x 1 Gb + 4x 10 Gb[b]	Optional	2x 1975 W	Jun 2013

a. MAX5 is not currently certified for use with SAP HANA and is therefore not supported.
b. The H models include one Emulex 10GbE Integrated Virtual Fabric Adapter (with two IBM 10GbE SW SFP+ Transceivers), one Emulex 10GbE Virtual Fabric Adapter II (with two IBM 10GbE SW SFP+ Transceivers), and one Intel Ethernet Quad Port Server Adapter I340-T4 for a total of four 10Gb ports and six 1Gb ports.
c. Models HCx and HEx include the QPI Scalability Kit (four cables), part number 46M0072. Use model HCx plus HBx or HDx plus HEx to form a 2-node scaled complex.

Components	Specification
Form factor/height	Rack/4U per chassis; MAX5 adds 1U.
Scalability	The SAP HANA models support **system scalability** as follows: ▸ One server (4U rack-mounted complex) ▸ Two servers (8U rack-mounted complex) MAX5 is not currently certified for use with SAP HANA and is not supported.
Processor type	**Intel Xeon E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity t up to 6.4 Gbps with four SMI links per processor. **Up to eight processors** when with two servers.
Number of processors	SAP HANA workload optimized models have either two or four processors standard; four maximum.
Cache (maximum)	**Up to 30 MB**.
Memory DIMM sockets	Up to eight memory cards (In the model table, the Memory column lists the standard number of memory cards in parentheses.) Each memory card has eight DIMM sockets (**64 DIMM sockets total**). **MAX5 adds 32 DIMM sockets**.
Memory maximums	Machine type 7143: ▸ **Up to 2.0 TB** using 32 GB DIMMs ▸ **Up to 3.0 TB with the addition of MAX5**
Expansion slots	**Eight PCIe 2.0 slots total**: ▸ Seven PCIe 2.0 slots (one used by 10 GB Ethernet card, if included). ▸ One PCIe 2.0 slot for supported RAID card.
Disk bays	**Eight 2.5" hot-swap** SAS or **sixteen 1.8" solid-state drives** (SSD).
Maximum int. disk	**8 TB per chassis** (using eight 1 TB 2.5" NL SAS HDDs).
Network interface	Two 1 Gb Ethernet ports. Broadcom 5709C controller. **Emulex 10 GB Virtual Fabric Adapter standard** on most models with two 10 Gb Ethernet ports.
Power supply	Up to two hot-swap redundant 1975-W power supplies.
Hot-swap parts	Power supplies, fans, hard disk drives, and solid-state-drives.
RAID support	7143: Integrated RAID 0 or RAID 1 with ServeRAID M1015 in dedicated PCIe slot. Optional RAID 5, 6, 10, 50, or 60.
External port	Rear: Scalability ports, one Ethernet for systems management, one serial port, four USB 2.0, one VGA, two Gb Ethernet cards, two 10 GB Ethernet cards (most models). Front: Two USB 2.0. Internal: One USB 2.0 port for **Embedded Hypervisor**.
Systems management	Alert on LAN 2, Automatic Server Restart, IBM Systems Director, IBM ServerGuide, integrated management module (IMM), **light path diagnostics**, Predictive Failure Analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, Dynamic System Analysis, and QPI Faildown.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Data Center Editions 64-bit), 64-bit Red Hat Enterprise Linux, 64-bit SUSE Linux Enterprise Server and Advanced Server, VMware vSphere Hypervisor.

Components	Specification
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.
Dimensions	Width: 440 mm (17.3 inches), depth: 712 mm (28.0 inches), height: 173 mm (6.8 inches) or 4 rack units (4U).
Weight	Minimum configuration: 35.4 kg (78 lb), maximum configuration: 49.9 kg (110 lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
46M0072	IBM x3850 X5 and x3950 X5 QPI Scalability Kit (four cables)
69Y1888	IBM x3850 X5 and x3950 X5 Memory Expansion Card (machine type 7143 only)
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
59Y6213	IBM eXFlash 8x 1.8-inch HS SAS SSD Backplane - supports eight 1.8" drives
59Y6135	IBM 2.5" Hot Swap SAS Hard Disk Drive Backplane - supports four 2.5-inch drives
59Y6139	IBM 1975 W Power Supply (x3850 X5)

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3850 X5*:
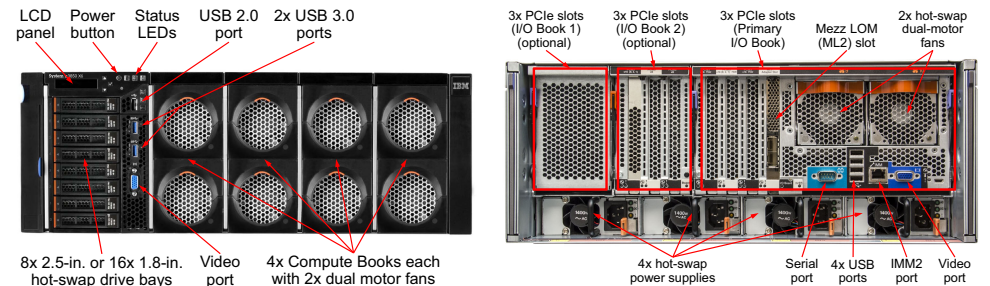http://www.redbooks.ibm.com/abstracts/tips0817.html?Open

IBM System x3850 X6

Model[1]	Intel Xeon Processor (installed in a Compute Book)	Additional Compute Books	Memory	eXFlash DIMMs	RAID	Drive bays (std/max)	Drives	Ethernet (ML2 slot)[a]	I/O slots (std / max)[b]	Power supplies (std/max)	Announced
3837-A4x	1x E7-4809 v2 6C 1.9GHz 12MB 1066MHz 105W	44X3961	2x 8GB	Not supported	Optional	Optional	Optional	4x 1 GbE	6 / 12	1x 900W HS / 4	Feb 2014
3837-B1x	2x E7-4820 v2 8C 2.0GHz 16MB 1333MHz 105W	44X3966	4x 8GB	Not supported	1x M5210	4x 2.5" HS / 8	Open bay	4x 1 GbE	6 / 12	2x 900W HS / 4	Feb 2014
3837-B3x	2x E7-4850 v2 12C 2.3GHz 24MB 1333MHz 105W	44X3976	4x 8GB	Not supported	1x M5210	4x 2.5" HS / 8	Open bay	2x 10 GbE[a]	6 / 12	2x 900W HS / 4	Feb 2014
3837-C1x	2x E7-4860 v2 12C 2.6GHz 30MB 1600MHz 130W	44X3981	4x 8GB	Optional	1x M5210	4x 2.5" HS / 8	Open bay	4x 1 GbE	6 / 12	2x 900W HS / 4	Feb 2014
3837-C4x	2x E7-4890 v2 15C 2.8GHz 37.5MB 1600MHz 155W	44X3996	4x 8GB	Optional	1x M5210	4x 2.5" HS / 8	Open bay	4x 1 GbE	6 / 12	2x 900W HS / 4	Feb 2014

a. Model B3x includes the Broadcom NetXtreme II ML2 Dual Port 10GbE SFP+ adapter (BCM57810S based). All other models include Intel I350-T4 ML2 Quad Port GbE Adapter adapter (I350-AM4 based).
b. Models with 6 slots have the Primary I/O Book (4 slots) and Storage Book (2 slots) standard. Models with 9 slots also include one Half-length I/O Book.

Components	Specification
Form factor	4U rack
Processor	One, two or **four Intel Xeon E7-4800 v2 or E7-8800 v2 processors**, each in a Compute Book. Each processor either **15 cores** (up to 2.8 GHz) or 12 cores (up to 2.6 GHz) or 10 cores (up to 2.2 GHz) or eight core (up to 2.0 GHz) or six cores (up to 3.4 GHz). Three QPI links up to 8.0 GT/s each. Up to **1600 MHz memory** speed. Up to 37.5 MB L3 cache. Intel C602J chipset.
Memory	Up to **96 DIMM sockets** (24 DIMMs per processor, installed in the Compute Book). RDIMMs and LRDIMMs (Load Reduced DIMMs) are supported, but memory types cannot be intermixed. Memory speed up to 1600 MHz.
Memory maximums	With RDIMMs: Up to 1.5 TB with 96x 16 GB RDIMMs and four processors With LRDIMMs: **Up to 6 TB** with 96x 64 GB LRDIMMs and four processors
Memory protection	ECC, Chipkill, RBS, memory mirroring, and memory rank sparing
Memory-channel storage	Standard on some models. **eXFlash DIMMs** are installed in memory DIMM slots but are seen by the OS as storage devices. Memory channels with eXFlash DIMM(s) must also have at least one RDIMM. Cannot bemixed with LRDIMMs. Maximum 32 eXFlash DIMMs can be installed. **With 32x 400GB, max. 12.8 TB**
Disk drive bays	**Up to 16 1.8" eXFlash SSD bays**, or up to 8 2.5" hot-swap SAS/SATA bays.
Maximum internal storage	**Up to 12.8 TB** with 1.6 TB 2.5" SAS SSDs, or up to 9.6 TB with 1.2 TB 2.5" SAS HDDs, up to 8 TB with 1 TB 2.5" NL SAS/SATA HDDs, up to 6.4 TB with 400 GB 1.8" SATA SSDs.
RAID support	**12 Gb SAS/SATA RAID 0, 1, 10** with M5210; optional upgrades to RAID 5, 50 are available (zero-cache; 1 GB non-backed cache; 1 GB or 2 GB flash-backed cache). Upgrade to RAID 6, 60 available for M5210 with 1 GB or 2 GB upgrades.
Optical & tape bays	None
Network interfaces	**Mezzanine LOM (ML2) slot** for dual-port 10 GbE cards with SFP+ or RJ-45 connectors or quad-port GbE cards with RJ-45 connectors. See model table.
PCI Expansion slots	Up to **12 PCI Express** (PCIe) slots. The slots are as follows: ▶ Two PCIe 3.0 x8 slots for internal RAID controllers (Storage Book) ▶ Two PCIe 3.0 x16 slots (x16-wired), half length, full height (Primary I/O Book) ▶ One PCIe 3.0 x16 (x8-wired), half length, full height (Primary I/O Book) ▶ One ML2 slot for network adapter (PCIe 3.0 x8) (Primary I/O Book) ▶ Two optional I/O Books, each with three slots, all full height (use of these I/O Books requires 4 processors). Optional books are hot-swap capable. Optional I/O Books can be either of: ▶ Half-length I/O Book: two PCIe 3.0 x8 slots, one PCIe 3.0 x16 slot ▶ Full-length I/O Book: two PCIe 3.0 x16, one PCIe 2.0 x4 slot; two aux power connectors: 150W & 75W; supports 1 **double-wide GPU** up to 300W
Ports	Front: **Two USB 3.0**, one USB 2.0, and one DB-15 video ports Rear: Four USB 2.0, one DB-15 video, one DB-9 serial, and one 1 GbE RJ-45 systems management. Internal: USB 2.0 port for embedded hypervisor.
Cooling	IBM Calibrated Vectored Cooling. Up to **ten redundant hot-swap fan packs**; five fan zones with N+1 fan redundancy. Each fan pack includes two counter-rotated dual-motor fans.
Power supply	Up to **four redundant hot-swap 900 W AC or 1400 W AC power supplies** (all 80 PLUS Platinum certified), -48V 750 W DC power supplies available via CTO.
Hot-swap parts	Drives, power supplies, fans, optional I/O Books.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Security features	Power-on password, admin password, two Trusted Platform Modules (TPMs).

Components	Specification
Systems management	UEFI, IBM Integrated Management Module II (IMM2) with remote presence feature, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Red Hat Enterprise Linux 6, SUSE Linux Enterprise Server 11, VMware vSphere ESXi 5.1 and 5.5
Limited warranty	Three-year customer-replaceable unit (CRU) and on-site limited warranty with 9x5 next business day (NBD).
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 some IBM / OEM applications.
Dimensions	Height: 173 mm (6.8 in), width: 482 mm (19.0 in), depth: 804 mm (31.6 in),
Weight	Minimum configuration: 35.9 kg (79.2 lb), maximum: 54.7 kg (120 lb)

LCD panel | Power button | Status LEDs | USB 2.0 port | 2x USB 3.0 ports | 3x PCIe slots (I/O Book 1) (optional) | 3x PCIe slots (I/O Book 2) (optional) | 3x PCIe slots (Primary I/O Book) | Mezz LOM (ML2) slot | 2x hot-swap dual-motor fans

8x 2.5-in. or 16x 1.8-in. hot-swap drive bays | Video port | 4x Compute Books each with 2x dual motor fans | 4x hot-swap power supplies | Serial port | 4x USB ports | IMM2 port | Video port

Popular and system-unique options:

Part	Description
46W0741	64GB (4Gb, 8Rx4, 1.35V) PC3-10600 DDR3 1333MHz LP LRDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00FE005	IBM eXFlash 400GB DDR3 Storage DIMM
00FE000	IBM eXFlash 200GB DDR3 Storage DIMM
44X4049	X6 Half-length I/O Book
44X4051	X6 Full-length I/O Book
44X4106	IBM 8x 1.8" HS 12Gb SAS HDD Backplane
44X4132	IBM 900W Power Supply
49Y7970	Intel X540-T2 Dual Port 10GBaseT Adapter for IBM System x

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3850 X6*:
http://www.redbooks.ibm.com/abstracts/tips1084.html?Open

IBM System x3850 X6 SAP HANA Workload Optimized Solution

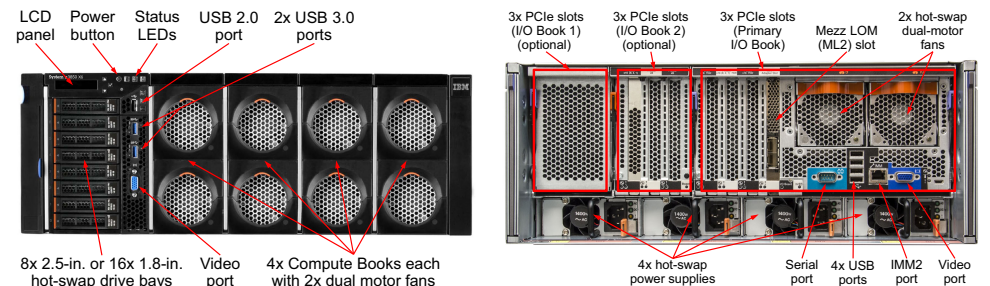| Model[1]	Intel Xeon Processor (includes Compute Book)	Additional Compute Books	Memory 1600 MHz	ServeRAID RAID controllers	Drive bays	Drives	Ethernet and InfiniBand	I/O slots (std / max)[a]	Power supplies	Announced
3837-H2x	2x E7-8880 v2 15C 2.5GHz 37.5MB 1600 MHz 130W	44X4016	128 GB (16x 8 GB) RDIMMs	1x M5210 + upgrades[b]	8x 2.5" HS 8 maximum	6x 1.2 TB SAS HDD 2x 400 GB S3700 SSD	1x 4x1GbE ML2 + 2x Mellanox 10GbE[c]	6 / 12	4x 1400W 4 maximum	Apr 2014
3837-H3x	2x E7-8880 v2 15C 2.5GHz 37.5MB 1600 MHz 130W	44X4016	256 GB (16x 16 GB) RDIMMs	1x M5210 + upgrades[b]	8x 2.5" HS 8 maximum	6x 1.2 TB SAS HDD 2x 400 GB S3700 SSD	1x 4x1GbE ML2 + 2x Mellanox 10GbE[c]	6 / 12	4x 1400W 4 maximum	Apr 2014
3837-H4x	2x E7-8880 v2 15C 2.5GHz 37.5MB 1600 MHz 130W	44X4016	512 GB (16x 32 GB) LRDIMMs	1x M5210 + upgrades[b]	8x 2.5" HS 8 maximum	6x 1.2 TB SAS HDD 2x 400 GB S3700 SSD	1x 4x1GbE ML2 + 2x Mellanox 10GbE[c]	6 / 12	4x 1400W 4 maximum	Apr 2014
3837-H5x	4x E7-8880 v2 15C 2.5GHz 37.5MB 1600 MHz 130W	None - All standard	512 GB (32x 16 GB) RDIMMs	1x M5210 + upgrades[b]	8x 2.5" HS 8 maximum	6x 1.2 TB SAS HDD 2x 400 GB S3700 SSD	1x 4x1GbE ML2 + 2x Mellanox 10GbE[c]	12 / 12	4x 1400W 4 maximum	Apr 2014
3837-H6x	4x E7-8880 v2 15C 2.5GHz 37.5MB 1600 MHz 130W	None - All standard	1024 GB (32x 32 GB) LRDIMMs	1x M5210 + upgrades 1x M5120 + upgrades[b]	8x 2.5" HS 8 maximum	6x 1.2 TB SAS HDD 2x 400 GB S3700 SSD	1x 4x1GbE ML2 + 2x Mellanox 10GbE[c]	12 / 12	4x 1400W 4 maximum	Apr 2014

a. Models with 6 slots have the Primary I/O Book (4 slots) and Storage Book (2 slots) standard. Models with 12 slots include two Half-length I/O Books.

b. All SAP HAHA models include a ServeRAID M5210 controller with 2GB cache upgrade with flash backup (46C9110), plus Performance Accelerator (47C8710) and SSD Caching Enabler (90Y4318). Model 3837-H6x also includes a ServeRAID M5120 RAID controller for external connectivity, with 1GB cache upgrade with flash backup (81Y4478) plus Performance Accelerator (90Y4273) and SSD Caching Enabler (90Y4318).

c. All x3850 X6 SAP HANA models include Intel I350-T4 ML2 Quad Port GbE Adapter adapter (00D1998) and two Mellanox ConnectX-3 40GbE / FDR IB VPI Adapters (00D9550) with 10GbE SFP+ optics

Components	Specification
Form factor	4U rack
Processor	Up to **four Intel Xeon E7-8800 v2 processors**, each in a Compute Book. Each processor contains **15 cores** at 2.5 GHz. Three QPI links up to 8.0 GT/s each. Up to **1600 MHz memory** speed. Up to 37.5 MB L3 cache. Intel C602J chipset.
Memory	Up to **96 DIMM sockets** (24 DIMMs per processor, installed in the Compute Book). RDIMMs and LRDIMMs (Load Reduced DIMMs) are supported, but memory types cannot be intermixed. Memory speed up to 1600 MHz.
Memory maximums	With RDIMMs: Up to 1.5 TB with 96x 16 GB RDIMMs and four processors With LRDIMMs: **Up to 6 TB** with 96x 64 GB LRDIMMs and four processors
Memory protection	ECC, Chipkill, RBS, memory mirroring, and memory rank sparing
Memory-channel storage	IBM eXFlash DIMMs not supported on SAP HANA models.
Disk drive bays	SAP HANA models have **eight 2.5" hot-swap SAS/SATA bays**.
Maximum internal storage	**Up to 12.8 TB** with 1.6 TB 2.5" SAS SSDs, or up to 9.6 TB with 1.2 TB 2.5" SAS HDDs, up to 8 TB with 1 TB 2.5" NL SAS/SATA HDDs, up to 6.4 TB with 400 GB 1.8" SATA SSDs.
RAID support	**12 Gb SAS/SATA RAID 0, 1, 10** with M5210; SAP HANA models include RAID and performance upgrades as listed in the model table.
Optical & tape bays	None
Network interfaces	**Mezzanine LOM (ML2) slot** with quad-port GbE adapter. See model table. SAP HANA models also include Mellanox ConnectX-3 40GbE / FDR IB VPI Adapters
PCI Expansion slots	Up to **12 PCI Express** (PCIe) slots. The slots are as follows: ▶ Two PCIe 3.0 x8 slots for internal RAID controllers (Storage Book) ▶ Two PCIe 3.0 x16 slots (x16-wired), half length, full height (Primary I/O Book) ▶ One PCIe 3.0 x16 (x8-wired), half length, full height (Primary I/O Book) ▶ One ML2 slot for network adapter (PCIe 3.0 x8) (Primary I/O Book) ▶ Two optional I/O Books, each with three slots, all full height (use of these I/O Books requires 4 processors). Optional books are hot-swap capable. Additional optional I/O Books (standard on some HANA models) can be either: ▶ Half-length I/O Book: two PCIe 3.0 x8 slots, one PCIe 3.0 x16 slot ▶ Full-length I/O Book: two PCIe 3.0 x16, one PCIe 2.0 x4 slot; two aux power connectors: 150W & 75W; supports 1 **double-wide GPU** up to 300W
Ports	Front: **Two USB 3.0**, one USB 2.0, and one DB-15 video ports Rear: Four USB 2.0, one DB-15 video, one DB-9 serial, and one 1 GbE RJ-45 systems management. Internal: USB 2.0 port for embedded hypervisor.
Cooling	IBM Calibrated Vectored Cooling. Up to **ten redundant hot-swap fan packs**; five fan zones with N+1 fan redundancy. Each fan pack includes two counter-rotated dual-motor fans.
Power supply	**Four redundant hot-swap 1400 W AC power supplies** (80 PLUS Platinum)
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Hot-swap parts	Drives, power supplies, fans, optional I/O Books.
Security features	Power-on password, admin password, two Trusted Platform Modules (TPMs).
Systems management	UEFI, IBM Integrated Management Module II (IMM2) with remote presence feature, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Red Hat Enterprise Linux 6, SUSE Linux Enterprise Server 11, VMware vSphere ESXi 5.1 and 5.5
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5 NBD
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 some IBM / OEM applications.
Dimensions	Height: 173 mm (6.8 in), width: 482 mm (19.0 in), depth: 804 mm (31.6 in),
Weight	Minimum configuration: 35.9 kg (79.2 lb), maximum: 54.7 kg (120 lb)

LCD panel   Power button   Status LEDs   USB 2.0 port   2x USB 3.0 ports

8x 2.5-in. or 16x 1.8-in. hot-swap drive bays   Video port   4x Compute Books each with 2x dual motor fans

3x PCIe slots (I/O Book 1) (optional)   3x PCIe slots (I/O Book 2) (optional)   3x PCIe slots (Primary I/O Book)   Mezz LOM (ML2) slot   2x hot-swap dual-motor fans

4x hot-swap power supplies   Serial port   4x USB ports   IMM2 port   Video port

Popular and system-unique options:

Part	Description
00D5036	8GB (1x8GB, 1Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
46W0676	32GB (1x32GB, 4Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP LRDIMM
44X4049	X6 Half-length I/O Book
44X4051	X6 Full-length I/O Book
49Y7970	Intel X540-T2 Dual Port 10GBaseT Adapter for IBM System x

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3850 X6*:
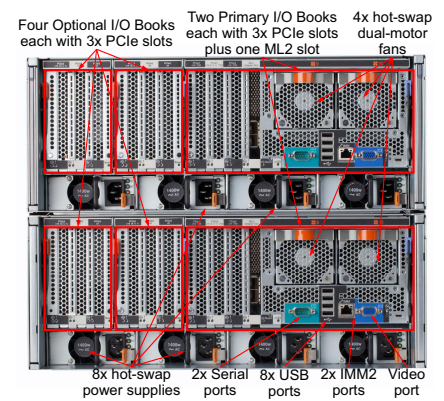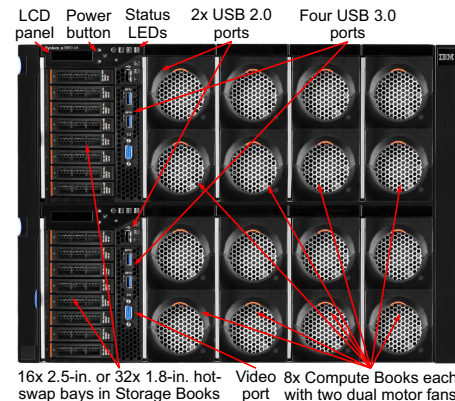http://www.redbooks.ibm.com/abstracts/tips1084.html?Open

IBM System x3950 X6

Model[1]	Intel Xeon Processors (installed in a Compute Book)	Additional Compute Books	Memory (1600 MHz)	eXFlash DIMMs	RAID	Drive bays (std/max)	Drives	Ethernet (ML2 slot)[a]	I/O slots (std / max)[b]	Power supplies (std/max)	Ann'd
3837-BAx	4x E7-8850 v2 12C 2.3GHz 24MB 1333MHz 105W	44X4001	8x 8GB	Not supported	1x M5210	4x 2.5" HS / 16	Open bay	4x 1 GbE	12 / 24	4x 900W HS / 8	Feb 2014
3837-CAx	4x E7-8870 v2 15C 2.3GHz 30MB 1600MHz 130W	44X4011	8x 8GB	Optional	1x M5210	4x 2.5" HS / 16	Open bay	4x 1 GbE	12 / 24	4x 900W HS / 8	Feb 2014
3837-CCx	4x E7-8890 v2 15C 2.8GHz 37.5MB 1600MHz 155W	44X4021	8x 8GB	Optional	1x M5210	4x 2.5" HS / 16	Open bay	4x 1 GbE	12 / 24	4x 900W HS / 8	Feb 2014

a. All x3950 X6 models include one Intel I350-T4 ML2 Quad Port GbE Adapter adapter (I350-AM4 based)
b. Models with 12 slots have the two Primary I/O Books (4 slots each) and two Storage Books (2 slots each) standard.

Components	Specification
Form factor	8U rack
Processor	Four, six or **eight Intel Xeon E7-8800 v2 processors**, each in a Compute Book. Each processor either **15 cores** (up to 2.8 GHz) or 12 cores (up to 3.0 GHz) or 10 cores (up to 3.2 GHz) or six cores (up to 3.4 GHz). 3 QPI links up to 8.0 GT/s each. Up to 1600 MHz memory speed. Up to 37.5 MB L3 cache.
Chipset	Intel C602J chipset.
Memory	Up to **192 DIMM sockets** (24 DIMMs per processor, installed in the Compute Book). RDIMMs and LRDIMMs (Load Reduced DIMMs) are supported, but memory types cannot be intermixed. Memory speed up to 1600 MHz.
Memory maximums	With RDIMMs: Up to **3.0 TB** with 192x 16 GB RDIMMs and eight processors. With LRDIMMs: **Up to 12 TB** with 192x 64 GB LRDIMMs and eight processors
Memory protection	ECC, Chipkill, RBS, memory mirroring, and memory rank sparing
Memory-channel storage	Optional **eXFlash DIMMs** are installed in memory DIMM slots but are seen by the OS as storage devices. Memory channels with eXFlash DIMM(s) must also have at least one RDIMM. Cannot bemixed with LRDIMMs. Maximum 32 eXFlash DIMMs can be installed. **With 32x 400GB, maximum 12.8 TB**
Disk drive bays	**Up to 32 1.8" eXFlash SSD bays**, or up to 16 2.5" hot-swap SAS/SATA bays.
Maximum internal storage	**Up to 25.6 TB** with 1.6 TB 2.5" SAS SSDs, or up to 19.2 TB with 1.2 TB 2.5" SAS HDDs, up to 16 TB with 1 TB 2.5" NL SAS/SATA HDDs, up to 12.8 TB with 400 GB 1.8" SATA SSDs.
RAID support	**12 Gb SAS/SATA RAID 0, 1, 10** with ServeRAID M5210; optional upgrades to RAID 5, 50 are available (zero-cache; 1 GB non-backed cache; 1 GB or 2 GB flash-backed cache). Upgrade to RAID 6, 60 available with 1 or 2 GB upgrades.
Optical & tape bays	None
Network interfaces	Two **Mezzanine LOM (ML2) slots**, one with quad-port GbE card with RJ-45 connectors. Available Dual-port 10 GbE cards with SFP+ or RJ-45 connectors.
PCI Expansion slots	Up to **24 PCI Express** (PCIe) slots. The slots are as follows: ▶ Four PCIe 3.0 x8 slots for internal RAID controllers (Storage Books) ▶ Four PCIe 3.0 x16 slots (x16-wired), half length, full height (Primary I/O Books) ▶ Two PCIe 3.0 x16 (x8-wired), half length, full height (Primary I/O Books) ▶ Two ML2 slots for network adapter (PCIe 3.0 x8) (Primary I/O Books) ▶ Four optional I/O Books, each with three slots, all full height (use of 2 requires 6 processors; use of 4 requires 8). Optional books are hot-swap capable. Optional I/O Books can be either of: ▶ Half-length I/O Book: two PCIe 3.0 x8 slots, one PCIe 3.0 x16 slot ▶ Full-length I/O Book: two PCIe 3.0 x16, one PCIe 2.0 x4 slot; two aux power connectors: 150W & 75W; supports 1 **double-wide GPU** up to 300W
Ports	*Front*: Four **USB 3.0**, two USB 2.0, and one DB-15 video ports *Rear*: Eight USB 2.0, one DB-15 video, one DB-9 serial, and one 1 GbE RJ-45 IMM2 systems management. *Internal*: two USB 2.0 port for embedded hypervisor. The second video, IMM2 and internal USB hypervisor ports are only used when the server is partitioned into two four-socket servers.
Cooling	IBM Calibrated Vectored Cooling. Up to **20 redundant hot-swap fan packs**; ten fan zones with N+1 fan redundancy. Each fan pack includes two counter-rotated dual-motor fans.
Power supply	Up to **eight redundant hot-swap 900 W AC or 1400 W AC power supplies** (all 80 PLUS Platinum certified), -48V 750 W DC supplies available via CTO.
Hot-swap parts	Drives, power supplies, fans, optional I/O Books.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Systems management	UEFI, IBM Integrated Management Module II (IMM2) with remote presence feature, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide
Security features	Power-on password, admin password, 4x Trusted Platform Modules (TPMs).
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Red Hat Enterprise Linux 6, SUSE Linux Enterprise Server 11, VMware vSphere ESXi 5.1 and 5.5
Limited warranty	Three-year customer-replaceable unit (CRU) and on-site limited warranty with 9x5 next business day (NBD).
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 some IBM / OEM applications.
Dimensions	Height: 351 mm (13.7 in), width: 482 mm (19.0 in), depth: 804 mm (31.6 in), depth with Full-length I/O Book installed: 903 mm (35.5")
Weight	Minimum configuration: 84.5 kg (186.3 lb), maximum: 110.0 kg (242.6 lb)

16x 2.5-in. or 32x 1.8-in. hot-swap bays in Storage Books   Video port   8x Compute Books each with two dual motor fans

8x hot-swap power supplies   2x Serial ports   8x USB ports   2x IMM2 ports   Video port

Popular and system-unique options:

Part	Description
46W0741	64GB (4Gb, 8Rx4, 1.35V) PC3-10600 DDR3 1333MHz LP LRDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00FE005	IBM eXFlash 400GB DDR3 Storage DIMM
00FE000	IBM eXFlash 200GB DDR3 Storage DIMM
44X4049	X6 Half-length I/O Book
44X4051	X6 Full-length I/O Book
44X4106	IBM 8x 1.8" HS 12Gb SAS HDD Backplane
49Y7970	Intel X540-T2 Dual Port 10GBaseT Adapter for IBM System x

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3950 X6*:
http://www.redbooks.ibm.com/abstracts/tips1132.html?Open

IBM System x3950 X6 SAP HANA Workload Optimized Solution

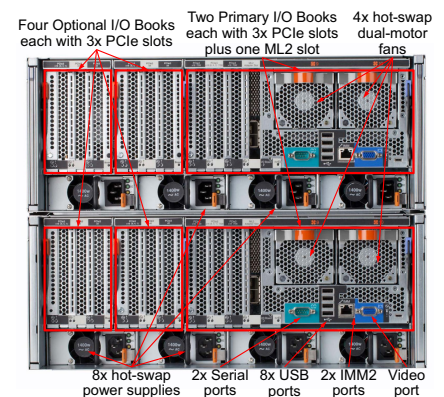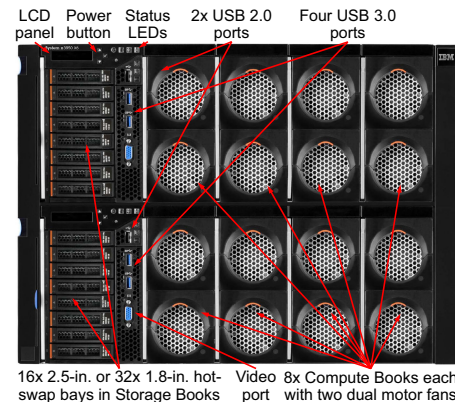| Model[1]	Intel Xeon Processors (includes Compute Book)	Additional Compute Books	Memory (1600 MHz)	ServeRAID RAID controllers	Drive bays (std/max)	Drives	Ethernet and InfiniBand	I/O slots (std / max)	Power supplies	Announced
3837-HBx	4x E7-8880 v2 15C 2.5GHz 37.5MB 1600 MHz 130W	44X4016	512 GB (32x 16 GB) RDIMMs	1x M5210 + upgrades[a]	8x 2.5" HS	6x 1.2 TB SAS HDD 2x 400 GB S3700 SSD	2x 4x1GbE ML2 + 2x Mellanox 10Gb[b]	12 / 24[c]	8x 1400W 8 maximum	Apr 2014
3837-HCx	4x E7-8880 v2 15C 2.5GHz 37.5MB 1600 MHz 130W	44X4016	1024 GB (32x 32 GB) LRDIMMs	2x M5210 + upgrades[a]	16x 2.5" HS	12x 1.2 TB SAS HDD 4x 400 GB S3700 SSD	2x 4x1GbE ML2 + 2x Mellanox 10Gb[b]	12 / 24[c]	8x 1400W 8 maximum	Apr 2014
3837-HDx	8x E7-8880 v2 15C 2.5GHz 37.5MB 1600 MHz 30W	None - All standard	2048 GB (64x 32 GB) LRDIMMs	2x M5210 + upgrades[a]	16x 2.5" HS	12x 1.2 TB SAS HDD 4x 400 GB S3700 SSD	2x 4x1GbE ML2 + 2x Mellanox 10Gb[b]	18 / 24[c]	8x 1400W 8 maximum	Apr 2014

a. All SAP HANA models include a ServeRAID M5210 controller with 2GB cache upgrade with flash backup (46C9110), plus RAID6/60 support (47C8706), Performance Accelerator (47C8710) and SSD Caching Enabler (90Y4318). Model 3837-H6x also includes a ServeRAID M5120 RAID controller for external connectivity, with 1GB cache upgrade with flash backup (81Y4478) plus Performance Accelerator (90Y4273) and SSD Caching Enabler (90Y4318).
b. All x3950 X6 SAP HANA models include two Intel I350-T4 ML2 Quad Port GbE Adapter adapters (00D1998) and two Mellanox ConnectX-3 40GbE / FDR IB VPI Adapters (00D9550) with 10GbE SFP+ optics
c. Models with 12 slots have the two Primary I/O Books (4 slots each) and two Storage Books (2 slots each) standard. Models with 18 slots also have two Half-length I/O Books installed.

Components	Specification
Form factor	8U rack
Processor	Up to **eight Intel Xeon E7-8800 v2 processors**, each in a Compute Book. Each processor contains **15 cores** at 2.5 GHz. Three QPI links up to 8.0 GT/s each. Up to **1600 MHz memory** speed. Up to 37.5 MB L3 cache. Intel C602J chipset.
Memory	Up to **192 DIMM sockets** (24 DIMMs per processor, installed in the Compute Book). RDIMMs and LRDIMMs (Load Reduced DIMMs) are supported, but memory types cannot be intermixed. Memory speed up to 1600 MHz.
Memory maximums	With RDIMMs: Up to **3.0 TB** with 192x 16 GB RDIMMs and eight processors With LRDIMMs: **Up to 12 TB** with 192x 64 GB LRDIMMs and eight processors
Memory protection	ECC, Chipkill, RBS, memory mirroring, and memory rank sparing
Memory-channel storage	IBM eXFlash DIMMs not supported on SAP HANA models.
Disk drive bays	SAP HANA models have 8 or 16 2.5" hot-swap SAS/SATA bays.
Maximum internal storage	**Up to 25.6 TB** with 1.6 TB 2.5" SAS SSDs, or up to 19.2 TB with 1.2 TB 2.5" SAS HDDs, up to 16 TB with 1 TB 2.5" NL SAS/SATA HDDs, up to 12.8 TB with 400 GB 1.8" SATA SSDs.
RAID support	**12 Gb SAS/SATA RAID 0, 1, 10** with M5210; SAP HANA models include RAID and performance upgrades as listed in the model table.
Optical & tape bays	None
Network interfaces	**Two Mezzanine LOM (ML2) slots** with quad-port GbE adapters. HANA models also include Mellanox ConnectX-3 40GbE / FDR IB VPI Adapters
PCI Expansion slots	Up to **24 PCI Express** (PCIe) slots. The slots are as follows: ► Four PCIe 3.0 x8 slots for internal RAID controllers (Storage Books) ► Four PCIe 3.0 x16 slots (x16-wired), half length, full height (Primary I/O Books) ► Two PCIe 3.0 x16 (x8-wired), half length, full height (Primary I/O Books) ► Two ML2 slots for network adapter (PCIe 3.0 x8) (Primary I/O Books) ► Four optional I/O Books, each with three slots, all full height (use of 2 requires 6 processors; use of 4 requires 8). Optional books are hot-swap capable. Optional I/O Books can be either of: ► Half-length I/O Book: two PCIe 3.0 x8 slots, one PCIe 3.0 x16 slot ► Full-length I/O Book: two PCIe 3.0 x16, one PCIe 2.0 x4 slot; two aux power connectors: 150W & 75W; supports 1 **double-wide GPU** up to 300W
Ports	*Front*: Four **USB 3.0**, two USB 2.0, and one DB-15 video ports *Rear*: Eight USB 2.0, one DB-15 video, one DB-9 serial, and one 1 GbE RJ-45 IMM2 systems management. *Internal*: two USB 2.0 port for embedded hypervisor. The second video, IMM2 and internal USB hypervisor ports are only used when the server is partitioned into two four-socket servers.
Cooling	IBM Calibrated Vectored Cooling. Up to **20 redundant hot-swap fan packs**; ten fan zones with N+1 fan redundancy. Each fan pack includes two counter-rotated dual-motor fans.
Power supply	**Four redundant hot-swap 1400 W AC power supplies** (80 PLUS Platinum)
Systems management	UEFI, IBM Integrated Management Module II (IMM2) with remote presence feature, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide
Hot-swap parts	Drives, power supplies, fans, optional I/O Books.

Components	Specification
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Security features	Power-on password, admin password, 4x Trusted Platform Modules (TPMs).
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, and 2008 R2, Red Hat Enterprise Linux 6, SUSE Linux Enterprise Server 11, VMware vSphere ESXi 5.1 and 5.5
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5 NBD
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 some IBM / OEM applications.
Dimensions	Height: 351 mm (13.7 in), width: 482 mm (19.0 in), depth: 804 mm (31.6 in), depth with Full-length I/O Book installed: 903mm (35.5")
Weight	Minimum configuration: 84.5 kg (186.3 lb), maximum: 110.0 kg (242.6 lb)

LCD panel, Power button, Status LEDs, 2x USB 2.0 ports, Four USB 3.0 ports

Four Optional I/O Books each with 3x PCIe slots, Two Primary I/O Books each with 3x PCIe slots plus one ML2 slot, 4x hot-swap dual-motor fans

16x 2.5-in. or 32x 1.8-in. hot-swap bays in Storage Books — Video port — 8x Compute Books each with two dual motor fans

8x hot-swap power supplies, 2x Serial ports, 8x USB ports, 2x IMM2 ports, Video port

Popular and system-unique options:

Part	Description
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
46W0676	32GB (1x32GB, 4Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP LRDIMM
44X4049	X6 Half-length I/O Book
44X4051	X6 Full-length I/O Book
49Y7970	Intel X540-T2 Dual Port 10GBaseT Adapter for IBM System x

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3950 X6*: http://www.redbooks.ibm.com/abstracts/tips1132.html?Open

IBM NeXtScale System

IBM NeXtScale System® is a new HPC offering from IBM. This new dense offering is based on our experience with IBM iDataPlex® and IBM BladeCenter along with a tight focus on emerging and future client requirements.

The NeXtScale n1200 enclosure and NeXtScale servers are designed to optimize density and performance within typical data center infrastructure limits. The 6U NeXtScale n1200 enclosure fits in a standard 19-inch rack and up to twelve NeXtScale servers can be installed into the enclosure.

With more computing power per watt and the latest Intel Xeon processors, you can reduce costs while maintaining speed and availability.

Figure 1   The NeXtScale n1200 Enclosure with twelve compute nodes installed

IBM NeXtScale n1200 Enclosure

Model[1]	Server bays	Fan and Power Controller	Power supplies (6 maximum)	Fans (10 maximum)	Announced
5456-A2x	12	Standard	6 x 900 W	10 x 80mm	Sep 2013
5456-A3x	12	Standard	2 x 1300 W	10 x 80mm	Apr 2014
5456-A4x	12	Standard	6 x 1300 W	10 x 80mm	Apr 2014

Components	Specification
Form factor	**6U rack-mounted chassis**.
Maximum number of servers supported	**Up to 12 servers** in 12 bays. Chassis is 6 bays high and 2 bays across. Also supports double-high servers -- servers with either a GPU Tray or Storage Tray mounted on top of the server.
Systems supported	All IBM NeXtScale servers. Optional GPU Trays or Storage Trays attached to the servers.
Nodes per 42U rack	Up to **72 servers in six 6U chassis** (36U total, leaving space for top-of-rack switches, UPS units, etc)
Midplane	Passive midplane provides connections to the 12 servers in the front to the power supplies and fans at the rear. Provides signals to control fan speed, power consumption, and node throttling as needed.
Fan and Power Controller	The **Fan and Power Controller** (FPC) module is the management device for the chassis. Provides provides **integrated systems management** functions and controls the power and cooling features of the enclosure. Hot-swappable. Browser and CLI-based user interfaces for remote acces via the **dedicated 10/100 Mbps Ethernet port**. Internal USB memory key for logging and configuration data.
Ports	RJ45 port on the rear of the chassis for 10/100 Ethernet connectivity to the Fan and Power Controller for power and cooling management. Each server has RJ45 Ethernet connectors as well as a KVM connector for USB, video and serial connections.
I/O architecture	None integrated. Use top-of-rack networking and storage switches.
Power supplies	Up to **six hot-swap power supplies** either 900 W or 1300 W. 900 W power supplies can operate at 200V-240V or 100-127V. 1300 W power supplies operat at 200V-240V only. Power supplies installed at the rear of the chassis. Single power domain supplies power to all servers. Optional redundancy (N+1 or N+N) and oversubscription. Integrated 2500 RPM fan. 80 PLUS Platinum certified. Built-in overload and surge protection.
Fans	**10 hot-swap 80 mm fans** standard and maximum. Dual-rotor design for high efficiency and high reliability. Air flow is front-to-back. Two logical cooling zones.
System LEDs	Fan and Power Controller LEDs: Power, Activity, Locator, System error log, Ethernet port LEDs. Power supply LEDs: AC power, DC power, Fault LEDs. Fans: Fault LED. Servers have additional LEDs.
Security features	Login password for remote connection. Secure Sockets Layer (SSL) security for remote management access. Supports LDAP for authorization. Trusted and signed firmware.
Declared sound level	7.5 bels
Temperature	Operating air temperature **ASHRAE class A3** environment: 5°C - 40°C (41°F - 104°F) Derate maximum allowable temperature 1°C/175 m above 950 m.
Electrical power	1300 W power supplies: 200-240 V ac input (nominal), 50 or 60 Hz 900 W power supplies: 100-127V or 200-240 V ac input (nominal), 50 or 60 Hz
Power consumption	7,800 watts maximum
Power cords	One AC power cord for each power supply, 1.5m 10A, IEC320 C14 to C13
Dimensions	► Height: 263.3 mm (10.4 in.) ► Depth: 914.5 mm (36 in.) ► Width: 447 mm (17.6 in.)
Weight	Fully configured (stand-alone): Approximately 112 kg (247 lbs.) Empty chassis: approximately 28 kg (62 lbs.)
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension.

6U high chassis (shown with removable handles)

12 server bays – sample combinations:
- 12 1-bay servers (as shown)
- 6 servers with GPU Trays
- 6 servers with Storage Trays
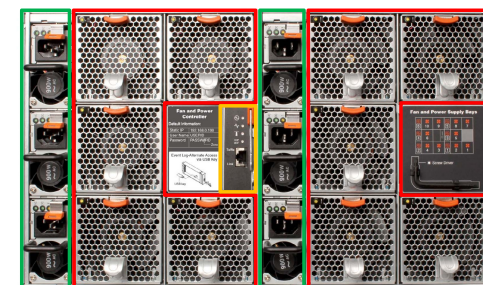
6x Power supplies | Fan and Power Controller | 10x Fan Modules

Popular and system-unique options:

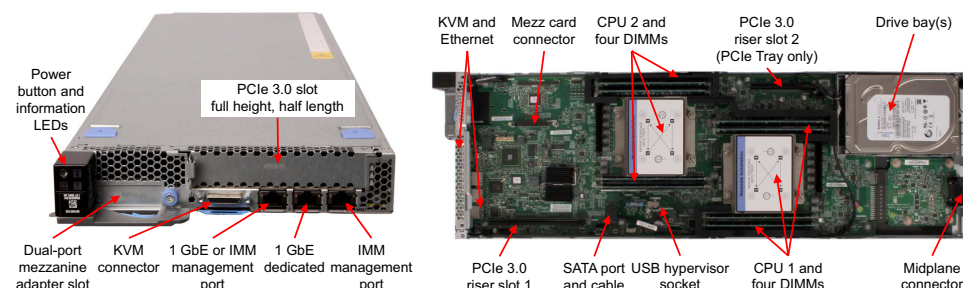| Part	Description
00Y8569	CFF 900W Power Supply
00Y8652	CFF 1300W Power Supply

For more information and a list of all supported options, see *IBM NeXtScale System Planning and Implementation Guide* from IBM Redbooks:
http://www.redbooks.ibm.com/abstracts/sg248152.html?Open

IBM NeXtScale nx360 M4

Model[1]	Processor	Second CPU	Memory & speed	Disk adapter	Disk bays	Disks	Network	Optical	Power	Announced
5455-22x	2x Intel Xeon E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	Standard	2x 4 GB 1600 MHz	6 Gbps SATA (No RAID)	1x 3.5" SS bay	Open	2x GbE	None	Chassis	Sep 2013
5455-42x	2x Intel XeonE5-2660 v2 10C 2.2GHz 25MB 1866MHz 95W	Standard	2x 8 GB 1866 MHz	6 Gbps SATA (No RAID)	1x 3.5" SS bay	Open	2x GbE	None	Chassis	Sep 2013
5455-62x	2x Intel XeonE5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	Standard	2x 8 GB 1866 MHz	ServeRAID C100	2x 2.5" SS bays	Open	2x GbE	None	Chassis	Sep 2013

Components	Specification
Form factor	Half-wide, 1U compute node
Supported chassis	IBM NeXtScale n1200 enclosure, 6U high; up to 12 compute nodes per chassis
Processor	Two Intel Xeon Processor E5-2600 V2 series processors; QuickPath Interconnect (QPI) links speed up to 8.0 GT/s. Hyper-Threading Technology and Turbo Boost Technology. Intel C602J (Patsburg-J) chipset. 4-core processors up to 3.5 GHz and 15 MB L3 cache 6-core processors up to 3.5 GHz and 25 MB L3 cache 8-core processors up to 3.3 GHz and 25 MB L3 cache 10-core processors up to 3.0 GHz and 25 MB L3 cache 12-core processors up to 2.7 GHz and 30 MB L3 cache
Memory	Up to 8 DIMM sockets (4 DIMMs per processor) supporting DDR3 DIMMs up to 1866 MHz memory speeds. RDIMMs, UDIMMs and LRDIMMs supported. Four memory channels per processor (one DIMM per channel).
Memory maximums	Up to 256 GB with 8x 32 GB LRDIMMs and two processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Inside the nx360 M4: One 3.5-inch simple-swap SATA or two 2.5-inch simple swap SAS/SATA HDDs or SSDs, or four 1.8-inch simple-swap SSDs. Not front accessible. Adding the NeXtScale Storage Native Expansion Tray adds 7 more 3.5-inch simple-swap drive bays (adds 1U height).
Maximum internal storage	With the Storage Native Expansion Tray: 32 TB using 8x 4TB 3.5-inch drives. Without the Storage Native Expansion Tray: 4.0 TB using 1x 4TB 3.5-inch drive.
RAID support	On some models: ServeRAID C100 6Gb SATA controller supporting RAID-0, RAID-1 and RAID-10. Implemented in the Intel C600 chipset. Optional hardware RAID with supported 6Gbps RAID controllers.
Optical drive bays	No internal bays. Use an external USB drive such as the IBM and Lenovo® part number 73P4515 or 73P4516.
Tape drive bays	No internal bays. Use an external USB drive.
Network interfaces	Two Gigabit Ethernet ports using onboard Intel I350 Gb Ethernet controller. Optionally, two InfiniBand ports or two 10 GbE ports via a mezzanine card (which does not occupy the available PCIe slot).
PCI Expansion slots	nx360 M4 without PCIe Native Expansion Tray: ▶ One PCIe 3.0 x8 mezzanine card slot ▶ One PCIe 3.0 x16 full-height half-length slot nx360 M4 with PCIe Native Expansion Tray (addes 1U height): ▶ One PCIe 3.0 x8 mezzanine card slot ▶ One PCIe 3.0 x8 full-height half-length slot ▶ Two PCIe 3.0 x16 full-height full-length double-width slots for GPUs
Ports (server)	Front of the server: KVM connector; with the addition of a console breakout cable (1 cable standard with the chassis) supplies one RS232 serial port, one VGA port and two USB ports for local console connectivity. Three 1 Gbps Ethernet ports with RJ45 connectors: one dedicated for systems management (wired to the IMM), one dedicated for use by the operating system and one shared by the IMM and the operating system. One slot for an optional mezzanine card ports (QSFP, SFP+ or RJ45 depending on the card installed). One internal USB port for VMware ESXi hypervisor key.
Ports (chassis)	Rear of the enclosure, provided by the Fan and Power Controller Module for chassis management: Gb Ethernet connection (RJ45) for browser-based remote management, mini-USB serial port for local management.
Cooling	Supplied by the NeXtScale n1200 enclosure. 10 hot-swap dual-rotor 80 mm system fans with tool-less design.
Power supply	Supplied by the NeXtScale n1200 enclosure. Up to six hot-swap power supplies either 900W or 1300W depending on the chassis model. Support power policies N+N or N+1 power redundancy. 80 PLUS Platinum certified.
Video	Matrox G200eR2 video core with 16 MB DDR3 video memory integrated into the IMM2. Maximum resolution is 1600x1200 with 16M colors (32 bpp) at 75 Hz, or 1680x1050 with 16M colors at 60 Hz. Optional GPUs in PCIe Native Exp. Tray.

Components	Specification
Systems management	UEFI, IBM Integrated Management Module II (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Browser-based chassis management via Ethernet port on the Fan and Power Controller Module on the rear of the enclosure. IMM2 upgrades available to IMM2 Standard and IMM2 Advanced for web GUI and remote presence features.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2.
Operating systems supported	Red Hat Enterprise Linux, SUSE Linux Enterprise Server, Microsoft Windows Server 2008 R2 and 2008, VMware vSphere Hypervisor.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
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 some IBM and OEM software.
Dimensions	NeXtScale nx360 M4 server: Width: 216 mm (8.5 in), height: 41 mm (1.6 in), depth: 659 mm (25.9 in) NeXtScale n1200 enclosure: Width: 447 mm (17.6 in), height: 263 mm (10.4 in), depth: 915 mm (36 in.)
Weight	NeXtScale nx360 M4 maximum weight: 6.05 kg (13.31 lb) NeXtScale n1200 enclosure: Fully configured (stand-alone): 112 kg (247 lb), empty chassis 28 kg (62 lb)

Popular and system-unique options:

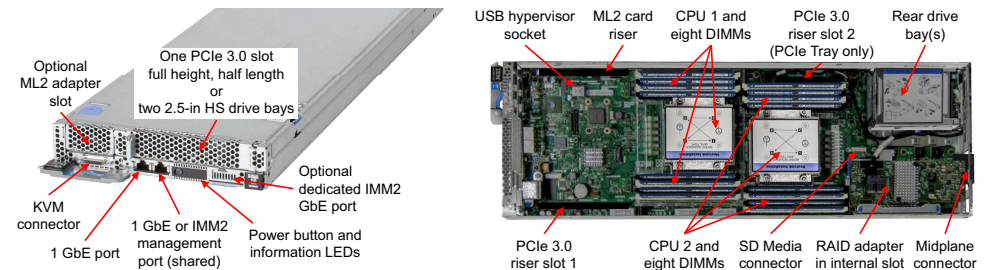| Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
81Y4448	ServeRAID M1115 SAS/SATA Controller for IBM System x
81Y4542	ServeRAID M1100 Series Zero Cache/RAID 5 Upgrade (for M1115 adapter)
00Y8546	IBM NeXtScale Storage Native Expansion Tray
00Y8393	IBM NeXtScale PCIe Native Expansion Tray
00AD025	IBM 4TB 7.2K 6Gbps SATA 3.5" HDD for NeXtScale System
00AD065	IBM 900GB 10K 6Gbps SAS 2.5" HDD for NeXtScale System
00W1227	IBM 256GB SATA 1.8" MLC Enterprise Value SSD
00Y8366	Console breakout cable (KVM Dongle cable)
90Y3900	IBM Integrated Management Module Standard Upgrade
90Y3901	IBM Integrated Management Module Advanced Upgrade (requires 90Y3900)

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM NeXtSystem nx360 M4*: http://www.redbooks.ibm.com/abstracts/tips1051.html?Open

IBM NeXtScale nx360 M5

Model[1]	Intel Xeon Processor	Second CPU	Memory & speed	Disk adapter	Disk bays	Disks	Slots	Network	Optical	Power	Announced
5465-22x	2x E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	Standard	2x 8 GB 2133 MHz	6 Gbps SATA (No RAID)	1x 3.5" SS bay	Open	3	2x GbE	None	Chassis	Sep 2014
5465-42x	2x E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	Standard	2x 8 GB 2133 MHz	6 Gbps SATA (No RAID)	1x 3.5" SS bay	Open	3	2x GbE	None	Chassis	Sep 2014
5465-62x	2x E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	Standard	2x 16 GB 2133 MHz	6 Gbps SATA (No RAID)	2x 2.5" SS bays	Open	3	2x GbE	None	Chassis	Sep 2014

Components	Specification
Form factor	*Standard server*: Half-wide, 1U compute node; *With optional NeXtScale PCIe Native Expansion Tray*: Half-wide 2U compute node
Supported chassis	IBM NeXtScale n1200 enclosure, 6U high; up to 12 compute nodes per chassis
Processor	Two Intel Xeon Processor E5-2600 v3 series processors; Core counts up to 18 cores; Core speed up to 3.2 GHz; L3 cache up to 45 MB. QuickPath Interconnect (QPI) links speed up to 8.0 GTps. Hyper-Threading Technology and Turbo Boost Technology. Intel C612 chipset.
Memory	Up to 16 DIMM sockets (8 DIMMs per processor) supporting DDR4 DIMMs up to 2133 MHz memory speeds. RDIMMs and LRDIMMs supported. Four memory channels per processor (two DIMMs per channel).
Memory maximums	Up to 512 GB with 16x 32 GB LRDIMMs and two processors.
Memory protection	Chipkill (x4 memory options only), ECC, and memory mirroring
Disk drive bays	*Internal to the the nx360 M5* (not front accessible): One 3.5-inch simple-swap SATA or two 2.5-inch simple swap SAS/SATA HDDs or SSDs, or four 1.8-inch simple-swap SSDs. *Front-accessible bays*: Two 2.5-inch hot-swap drive bays (optional, replaces the full-height PCIe slot, only supported if internal drive bays are also 2.5-inch bays). NeXtScale Storage Native Expansion Tray currently not supported.
Maximum internal storage	*Using 3.5" drives*: 6.0 TB using 1x 6TB 3.5-inch drive (internal). *Using 2.5" drives*: 5.6 TB using 2x 1.2 TB HDDs (internal) + 2x 1.6 TB HS SSDs (front). *Using 1.8" drives*: 1.6 TB using 4x 400 GB SSDs (internal).
RAID support	Four 6 Gb SATA ports via onboard Intel C612 chipset. No RAID standard. Optional 12 Gb SAS/SATA RAID adapter installed in dedicated internal PCIe slot. Supports ServeRAID M5210 or M1215, both standard with RAID 0 and 1. Optional M5210 upgrades: RAID 5, 50 (zero-cache, or 1 GB non-backed cache, or 1 GB or 2 GB or 4 GB flash-backed cache), RAID 6, 60, FoD performance upgrades; Optional upgrade to M1215 for RAID 5 support (zero-cache). No support for ServeRAID C100 or C105 software RAID.
Optical drive bays	No internal bays. Use an external USB drive.
Tape drive bays	No internal bays. Use an external USB drive.
Network interfaces	Integrated two-port Gigabit Ethernet (Broadcom BCM5717) with RJ45 connectors. One port dedicated for use by the operating system, and one configurable either as shared by the operating system and Integrated Management Module (IMM) or as dedicated to the IMM. Optional third GbE port for dedicated IMM2 access. Optionally, two InfiniBand ports or two 10 GbE ports through a Mezzanine LOM Gen 2 (ML2) adapter slot. ML2 adapters support shared access to the IMM.
PCI Expansion slots	nx360 M5 without PCIe Native Expansion Tray (each requires a Riser card): ▶ One PCIe 3.0 x16 ML2 adapter slot ▶ One PCIe 3.0 x16 full-height half-length slot (or two 2.5" HS drive bays) ▶ One PCIe 2.0 x8 slot for internal RAID controller nx360 M5 with PCIe Native Expansion Tray: ▶ One PCIe 3.0 x16 ML2 adapter slot ▶ One PCIe 3.0 x8 full-height half-length slot (or two 2.5" HS drive bays) ▶ One PCIe 2.0 x8 slot for internal RAID controller ▶ Two PCIe 3.0 x16 full-height full-length double-width slots
Ports (server)	*Front of the server*: KVM connector via a console breakout cable (1 cable standard with the chassis) supplies one RS232 serial port, one VGA port, and two USB 1.1 ports for local console connectivity. Two 1 Gbps Ethernet ports with RJ45 connectors (one shared with IMM2). Optional third Ethernet port for dedicated IMM2 access. *Internal*: One internal USB port for vSphere hypervisor key. *Rear of the enclosure* (provided by the Fan and Power Controller for chassis management): Gb Ethernet connection (RJ45) for remote management
Ports (chassis)	Rear of the enclosure, provided by the Fan and Power Controller Module for chassis management: Gb Ethernet connection (RJ45) for browser-based remote management, mini-USB serial port for local management.

Components	Specification
Cooling	Supplied by the NeXtScale n1200 enclosure. 10 hot-swap dual-rotor 80 mm system fans with tool-less design.
Power supply	Supplied by the NeXtScale n1200 enclosure. Up to six hot-swap power supplies either 900W or 1300W depending on the chassis model. Support power policies N+N or N+1 power redundancy. 80 PLUS Platinum certified.
Video	Matrox G200eR2 video core with 16 MB DDR3 video memory integrated into the IMM2. Maximum resolution is 1600x1200 with 16M colors (32 bpp) at 75 Hz, or 1680x1050 with 16M colors at 60 Hz. Optional GPUs in PCIe Native Exp. Tray.
Systems management	UEFI, IBM Integrated Management Module II (IMM2.1) with Renesas SH7758 controller, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director, and IBM ToolsCenter. Browser-based chassis management through an Ethernet port on the Fan and Power Controller at the rear of the enclosure. IMM2 upgrades are available to IMM2 Standard and IMM2 Advanced for web GUI and remote presence features.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2.
Operating systems supported	Microsoft Windows Server 2012 and 2012 R2, SUSE Linux Enterprise Server 11 and 12, Red Hat Enterprise Linux 6 and 6, VMware vSphere 5.1 and 5.5
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
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 some IBM and OEM software.
Dimensions	Width: 216 mm (8.5 in); height: 41 mm (1.6 in); depth: 659 mm (25.9 in)
Weight	Maximum weight: 6.17 kg (13.6 lb)

Popular and system-unique options:

Part	Description
46W0800	32GB TruDDR4 Memory (4Rx4, 1.2V) PC417000 CL15 2133MHz LP LRDIMM
46W0796	16GB TruDDR4 Memory (2Rx4, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM
46C9110	ServeRAID M5210 SAS/SATA Controller for IBM System x
00Y8393	IBM NeXtScale PCIe Native Expansion Tray
00FL175	nx360 M5 2.5" Front Hot Swap Drive Cage
00FL180	nx360 M5 ML2 Riser
00FL179	nx360 M5 RAID Riser
00Y8366	Console breakout cable (KVM Dongle cable)
00FL177	nx360 M5 IMM Management Interposer (dedicated IMM2 Ethernet port)
90Y3900	IBM Integrated Management Module Standard Upgrade
90Y3901	IBM Integrated Management Module Advanced Upgrade (requires 90Y3900)

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM NeXtSystem nx360 M5*: http://www.redbooks.ibm.com/abstracts/tips1195.html?Open

IBM System x iDataPlex

This section summarizes the compute nodes that are available for IBM System x iDataPlex. IBM System x iDataPlex, a large-scale solution, can help you face constraints in power, cooling, or physical space. The innovative design of the iDataPlex solution integrates Intel Xeon processor-based processing into the node, rack, and data center for power and cooling efficiencies to maximize compute density.


Figure 2   Two IBM System x iDataPlex dx360 M4 systems installed in the 2U chassis

IBM System x iDataPlex dx360 M4 (E5-2600 v2)

Model[1]	Processor	Second CPU	Memory & speed	Disk adapter	Disk bays	Disks	Network	Optical	Power	Announced
7912-13x	2x Intel Xeon E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	Standard	4x 4 GB 1600 MHz	6 Gbps SATA	1x 3.5" SS bay	Open	2x GbE	None	Chassis	Sep 2013
7912-63x	2x Intel Xeon E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	Standard	4x 8 GB 1866 MHz	6 Gbps SATA	2x 2.5" or 4x 1.8" SS bays	Open	2x GbE	None	Chassis	Sep 2013
7912-83x	2x Intel Xeon E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	Standard	4x 8 GB 1866 MHz	6 Gbps SATA	1x 3.5" SS bay	Open	2x GbE	None	Chassis	Sep 2013

Components	Specification
Form factor	**Half-depth**, 2U chassis with up to **two planar trays**.
Supported chassis	IBM System x iDataPlex dx360 M4 2U chassis, type 7913.
Processor	Two **Intel Xeon E5-2600 v2 Series processors**. Up to **12 cores** per processor. Core speeds up to 3.0 GHz. Integrated L3 cache up to 30 MB. QuickPath Interconnect (QPI) links speed up to 8.0 GT per second.
Memory cache	**Up to 20 MB.**
Chip set	Intel C600 Series.
Memory	**Up to 16 DIMM sockets** (8 DIMMs per processor) supporting DDR3 DIMMs. RDIMMs with **memory speeds of 1866 MHz** or 1600 MHz, or UDIMMS at 1600 MHz are supported. Four memory channels per processor (two DIMMs per channel).
Memory maximums	**Up to 256 GB** with sixteen 16 GB RDIMMs and two processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	**One 3.5" simple-swap** SATA, **two 2.5" simple swap** SAS/SATA HDDs or SSDs, or **four 1.8" simple-swap SSDs**.
Maximum internal storage	**Up to 8 TB per 2U chassis** using two 4 TB 3.5-inch drives.
RAID support	Two-port 6 Gbps PCIe 3.0 SATA controller with Intel C600 chip set. **Optional RAID** with supported 6 Gbps RAID controllers.
Optical drive bays	No internal bays; use an external USB drive.
Tape drive bays	No internal bays; use an external USB drive.
Network interfaces	**Two Gigabit Ethernet ports** using onboard **Intel I350** Gb Ethernet controller. Optionally **two FDR or FDR10 InfiniBand ports or two 10 GbE ports by using a mezzanine card** (which does not occupy a PCIe slot).
PCI expansion slots	One **PCIe 3.0 x8 mezzanine slot** supports 10 GbE or InfiniBand; standard models include two riser cards, each riser providing one slot: ▸ **Slot 1: PCIe 3.0 x16**, full height, half length ▸ **Slot 2: PCIe 3.0 x16**, full height, half length Use of both riser slots requires two processors installed. For CTO configurations, an alternative riser can be used with a PCIe chassis tray to provide GPU support (one node per 2U chassis): ▸ 2x PCIe 3.0 x16 (for GPGPU) - full-height/full-length/double-wide ▸ 2x PCIe 3.0 x8 (x16 mechanical) - full-height/half-length
Ports	One RS232 serial port, one VGA port, one 1 GBps RJ45 connector for dedicated systems management (wired to the IMM2), a slot for the mezzanine card ports (SFP+ or 10BaseT RJ45 depending on the card), two 1 GBps Ethernet ports, five USB 2.0 ports, with four on the front of the chassis and one internal.
Cooling	Supplied by the 2U chassis using **four 80 mm fans** in the standard fan pack.
Power supply	Supplied by the 2U chassis; one standard and two maximum. Options are 550 W, 750 W, or 900 W, all with **80 PLUS Platinum certification**. When two are installed, they form a redundant pair. iDataPlex rack offers **Direct Dock power cord connections** for easy installation and removal. Chassis 7913-A2x includes one 900 W High Efficiency Platinum AC Power Supply (second supply optional).
Systems management	UEFI, IBM **Integrated Management Module 2 (IMM2)** with Renesas SH7757 controller, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide.
Video	Matrox G200eR2 video core with 16-MB DDR3 video memory integrated into the IMM2. Maximum resolution is 1600x1200 with 16M colors (32 bpp) at 75 Hz, or 1680x1050 with 16M colors at 60 Hz.
Security features	Power-on password, administrator's password, and Trusted Platform Module 1.2.
Operating systems supported	Red Hat Enterprise Linux, SUSE Linux Enterprise Server, Microsoft Windows Server 2008 R2, 2008 (Datacenter, PC, Enterprise, and Web), and VMware vSphere Hypervisor.

Components	Specification
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and some IBM and OEM software.
Dimensions	Compute node: width: 444 mm (17.5"), height: 46 mm (1.8"), depth: 509 mm (20.0"). 2U chassis: width: 446 mm (17.6"), height: 87 mm (3.4"), depth: 555 mm (21.8").
Weight	Compute node: 6.7 kg (with one processor and two DIMMs). 2U chassis (no servers): 5.4 kg (shell without power supplies), 7.2 kg (with two power supplies).
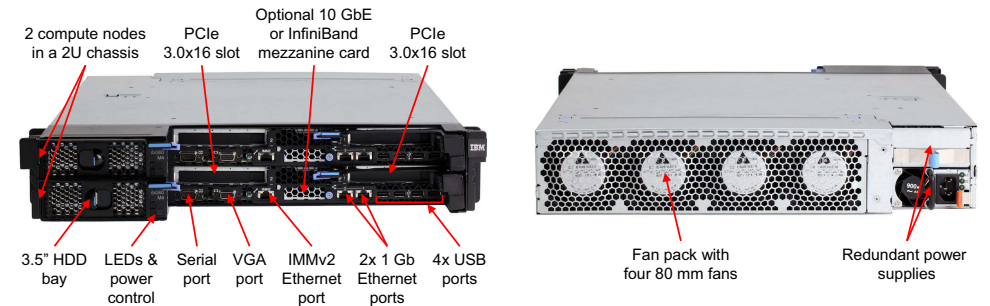
Popular and system-unique options:

Part	Description
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
00D5040	8GB (1x8GB, 2Rx8, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
43W7746	IBM 200GB SATA 1.8" MLC SSD
81Y9742	IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF SS HDD
49Y6002	IBM 4TB 7.2K 6Gbps NL SATA 3.5" G2HS HDD
81Y4448	ServeRAID M1115 SAS/SATA Controller for IBM System x
81Y4492	ServeRAID H1110 SAS/SATA Controller for IBM System x
90Y3901	IMM2 IBM Remote Presence Upgrade (feature on demand key)
A2N3	iDataPlex 2U GPU Configuration (CTO only)
A36S	NVIDIA Tesla K10 (CTO only)
A1R4	NVIDIA Tesla M2090, 6 GB GDDR5 (CTO only)
A105	NVIDIA Tesla M2070Q (CTO only)
A1R3	NVIDIA Quadro 5000, 2.5 GB GDDR5 (CTO only)
90Y6338	Mellanox ConnectX-3 2-port QDR/FDR-10 Mezzanine Adapter
90Y6456	Emulex 2-port 10GbE SFP+ Mezzanine Adapter

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x iDataPlex dx360 M4* at:
http://www.redbooks.ibm.com/abstracts/tips0878.html?Open

IBM BladeCenter

This section summarizes all of the IBM BladeCenter servers that are currently available. One or more pages are devoted to each server, depending on the number and type of models that are available:

► Standard models
► Express models
► Workload optimized models

Express models are specially configured to make it easier for customers to order complete systems. Express models typically add memory, disk drives, RAID adapters, network adapter and other components over what the standard models normally include.

Workload optimized models are also carefully configured to meet the requirements of a particular workload such as database or virtualization. Similar to Express models, these workload optimized models contain additional components such as memory, RAID and network adapters, and storage.

Model[1]	Server bays (14 max)	Advanced Mgmt Module	High-speed I/O Module bays	Standard I/O Module bays[a]	Bridge module bays	I/O modules standard	Power supplies (4 max)	Enhanced blowers (2 max)	Optical drive	Announced
8852-5Tx	14 available	1 standard / 2 max	4 total / 4 avail	4 total / 4 avail	2 total / 2 avail	None	2x 2980 W	2x Enhanced	Optional	Nov 2012
8852-94x	14 available	2 standard / 2 max	4 total / 2 avail	4 total / 2 avail	2 total / 2 avail	2x 1Gb Server Connectivity 2x Brocade 10GbE Converged	4x 2980 W	2x Enhanced	Multiburner	Nov 2012
8852-95x	14 available	2 standard / 2 max	4 total / 2 avail	4 total / 2 avail	2 total / 2 avail	2x 1Gb Server Connectivity 2x Cisco Nexus 4001I	4x 2980 W	2x Enhanced	Multiburner	Nov 2012
8852-96x	14 available	2 standard / 2 max	4 total / 2 avail	4 total / 1 avail[b]	2 total / 0 avail[b]	2x 1Gb Server Connectivity 2x 10Gb Virtual Fabric 2x QLogic VF Extension	4x 2980 W	2x Enhanced	Multiburner	Nov 2012

a. Two of these standard I/O module bays can be used as bridge module bays based on installed I/O modules
b. The use of the QLogic Virtual Extension Modules impacts the use of other I/O modules bays. See the QLogic Virtual Extension Product Guide, http://www.redbooks.ibm.com/abstracts/tips0717.html

Components	Specification
Machine type	IBM System x sales channel: 8852 IBM Power Systems sales channel: 7989
Form factor	**9U rack-mounted unit**.
Maximum number of servers supported	**Up to 14 server blades** in 14 bays. Supports double-wide servers or servers with expansion blades.
Systems supported	All IBM BladeCenter servers.
Nodes per 42U rack	Up to **56 servers in four chassis**
Advanced Management Modules	One or two **Advanced Management Modules** (AMMs), hot-swap, rear access, comprehensive system management functions; IBM PowerPC 440GP controller. Communicates with integrated system management processor on each server blade. Complete KVM switch local functionality.
Media tray	Two USB ports and optional Multiburner optical drive connectable to any one blade server; switchable via buttons on media tray or remote via the AMM web interface.
Ports	AMM: DB-15 analog video port, Dual USB 2.0 for keyboard and mouse, Serial (RJ45), 10/100 Ethernet remote management Media tray: Two USB 2.0 ports, connectable to any server (not sharable) Rear: Serial breakout port to supply 1 serial port for each blade bay
I/O architecture	**Up to four 10 Gb Ethernet or two 40 Gb InfiniBand connections**, **two 1 Gb connections**, and up to **two 8 Gb Fibre Channel** connections for each of the 14 blade servers. Supports a wide variety of networking solutions, including Ethernet, Virtual Fabric vNICs, Fibre Channel, Fibre Channel over Ethernet (FCoE), SAS, and InfiniBand.
Power modules	Up to **four hot-swap power modules**; Rear access; Supplies power to chassis components up to 2980W at 220V (110V not supported); Supports redundancy within pair. Power modules 1 and 2 supply power to blade bays 1-7. Power modules 3 and 4 support blade bays 8-14. Auto-restart, 3 fans per power module.
Blower modules	**Two Enhanced Cooling Modules** standard and maximum. Hot-swap and redundant, variable speed, rear access, front to back airflow. Older chassis models may require upgrades to Enhanced blowers to support newer servers.
System LED panel	Front and rear. Provides power-on, location, over-temperature, information, and system-error conditions.
Declared sound level	7.5 bels
Temperature	Operating air temperature 10°C to 35°C (50°F to 95°F) up to 900 m (3000 ft) 10°C to 32°C (50°F to 90°F) up to 2100 m (7000 ft)
Electrical power	Input power: 200 - 240 V ac (nominal), 50 or 60 Hz
Power consumption	9,600 watts maximum
Power cords	None standard; Requires two line cords. See *IBM BladeCenter Products and Technology*.
Dimensions	▶ Height: 400 mm (15.75 in) ▶ Width: 483 mm (19 in) ▶ Depth: 767 mm (29 in)
Weight	41 to 159 kg (90 to 350 lb)
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension.

Popular and system-unique options: (see model table for processor options)

Part	Description
46C7191	IBM BladeCenter Virtual Fabric 10Gb Switch Module
69Y1909	Brocade Converged 10 GbE Switch Module
39Y9324	IBM Server Connectivity Module (1Gb Ethernet)
46M6071	Cisco Nexus 4001I Switch Module
44X1920	Brocade 20-port 8 Gb SAN Switch Module
39Y9280	Cisco Systems 20-port 4 Gb FC Switch Module
44X1905	QLogic 20-Port 8 Gb SAN Switch Module
46M6172	QLogic Virtual Fabric Extension Module
39Y9195	SAS Connectivity Module
39Y9314	Multi-switch Interconnect Module for IBM BladeCenter
2019A1X	Advanced Management Module
40K9605	Serial Port Breakout Cable for IBM BladeCenter
68Y6650	IBM BladeCenter H Enhanced Cooling Modules (two modules)
68Y6601	IBM BladeCenter H 2980 W AC Power Modules with Fan Packs (two modules)
25R5783	4.3 m 208 V Double 30A NEMA L6-30P
25R5784	4.3 m 230 V Dual 32A IEC 309 P+N+G/16A IEC 320-C20
25R5785	2.8 m 200-240 V Triple 16A IEC 320-C20
25R5811	4.3 m 220 V Double 30A KSC 8305 (for South Korea)
25R5812	4.3 m 230 V Dual 32A AS/NZS 3112/16A IEC 320-C20 (for Australia/NZ)

For more information and a list of all supported options, see *IBM BladeCenter Products and Technology* from IBM Redbooks: http://www.redbooks.ibm.com/abstracts/sg247523.html?Open
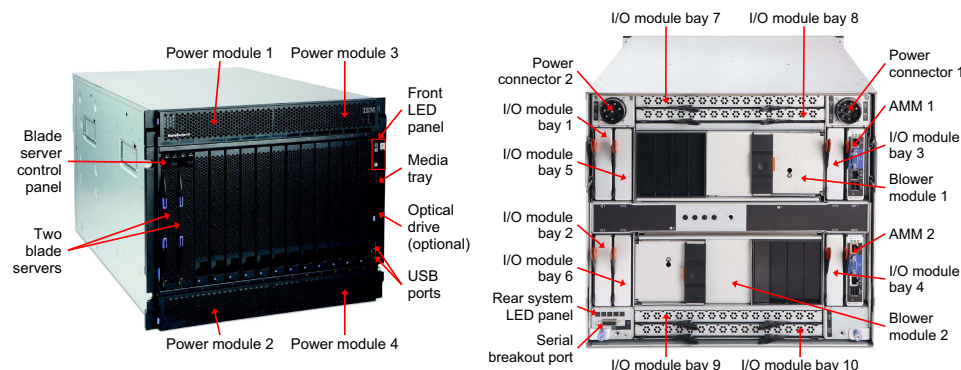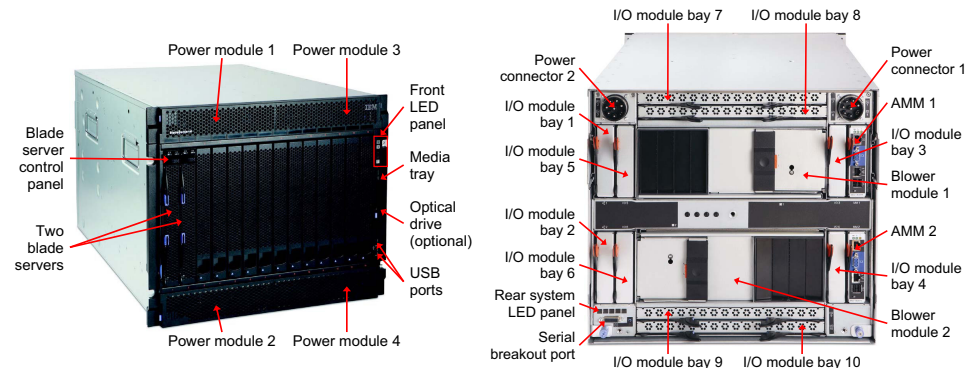
Model[1]	Server bays (14 max)	Advanced Mgmt Module	High-speed I/O Module bays	Standard I/O Module bays[a]	Bridge module bays	I/O modules standard	Power supplies (4 max)	Enhanced Blowers (2 max)	Optical drive	Announced
8852-91x	14 available	2 standard / 2 max	4 total / 2 avail	4 total / 2 avail	2 total / 2 avail	2x 1Gb Server Connectivity 2x Brocade 10GbE Converged	4x 2980 W	2x Enhanced	Multiburner	Aug 2011
8852-92x	14 available	2 standard / 2 max	4 total / 2 avail	4 total / 2 avail	2 total / 2 avail	2x 1Gb Server Connectivity 2x Cisco Nexus 4001I	4x 2980 W	2x Enhanced	Multiburner	Aug 2011
8852-93x	14 available	2 standard / 2 max	4 total / 2 avail	4 total / 1 avail[b]	2 total / 0 avail[b]	2x 1Gb Server Connectivity 2x 10Gb Virtual Fabric 2x QLogic VF Extension	4x 2980 W	2x Enhanced	Multiburner	Aug 2011

a. Two of these standard I/O module bays can be used as bridge module bays based on installed I/O modules
b. The use of the QLogic Virtual Extension Modules impacts the use of other I/O modules bays. See the QLogic Virtual Extension Product Guide, http://www.redbooks.ibm.com/abstracts/tips0717.html

Components	Specification
Machine type	System x sales channel: 8852 Power Systems sales channel: 7989
Form factor	**9U rack-mounted unit**.
Maximum number of servers supported	**Up to 14 server blades** in 14 bays. Supports double-wide servers or servers with expansion blades.
Systems supported	All IBM BladeCenter servers.
Nodes per 42U rack	Up to **56 servers in four chassis**
Advanced Management Modules	One or two **Advanced Management Modules** (AMMs), hot-swap, rear access, comprehensive system management functions; PowerPC 440GP controller. Communicates with integrated system management processor on each server blade. Complete KVM switch local functionality.
Media tray	Two USB ports and optional Multiburner optical drive connectable to any one blade server; switchable via buttons on media tray or remote via the AMM web interface.
Ports	AMM: DB-15 analog video port, Dual USB 2.0 for keyboard and mouse, Serial (RJ45), 10/100 Ethernet remote management Media tray: Two USB 2.0 ports, connectable to any server (not sharable) Rear: Serial breakout port to supply 1 serial port for each blade bay
I/O architecture	**Up to four 10 Gb Ethernet or two 40 Gb InfiniBand connections**, **two 1 Gb connections**, and up to **two 8 Gb Fibre Channel** connections for each of the 14 blade servers. Supports a wide variety of networking solutions, including Ethernet, Virtual Fabric vNICs, Fibre Channel, Fibre Channel over Ethernet (FCoE), SAS, and InfiniBand.
Power modules	Up to **four hot-swap power modules**; Rear access; Supplies power to chassis components up to 2980W at 220V (110V not supported); Supports redundancy within pair. Power modules 1 and 2 supply power to blade bays 1-7. Power modules 3 and 4 support blade bays 8-14. Auto-restart, 3 fans per power module.
Blower modules	**Two Enhanced Cooling Modules** standard and maximum. Hot-swap and redundant, variable speed, rear access, front to back airflow. Older chassis models may require upgrades to Enhanced blowers to support newer servers.
System LED panel	Front and rear. Provides power-on, location, over-temperature, information, and system-error conditions.
Declared sound level	7.5 bels
Temperature	Operating air temperature 10°C to 35°C (50°F to 95°F) up to 900 m (3000 ft) 10°C to 32°C (50°F to 90°F) up to 2100 m (7000 ft)
Electrical power	Input power: 200 - 240 V ac (nominal), 50 or 60 Hz
Power consumption	9,600 watts maximum
Power cords	None standard; Requires two line cords. See *IBM BladeCenter Products and Technology*.
Dimensions	▶ Height: 400 mm (15.75 in) ▶ Width: 483 mm (19 in) ▶ Depth: 767 mm (29 in)
Weight	41 to 159 kg (90 to 350 lb)
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension.

Popular and system-unique options: (see model table for processor options)

Part	Description
46C7191	IBM BladeCenter Virtual Fabric 10Gb Switch Module
69Y1909	Brocade Converged 10 GbE Switch Module
39Y9324	IBM Server Connectivity Module (1Gb Ethernet)
46M6071	Cisco Nexus 4001I Switch Module
44X1920	Brocade 20-port 8 Gb SAN Switch Module
39Y9280	Cisco Systems 20-port 4 Gb FC Switch Module
44X1905	QLogic 20-Port 8 Gb SAN Switch Module
46M6172	QLogic Virtual Fabric Extension Module
39Y9195	SAS Connectivity Module
39Y9314	Multi-switch Interconnect Module for IBM BladeCenter
2019A1X	Advanced Management Module
40K9605	Serial Port Breakout Cable for IBM BladeCenter
68Y6650	IBM BladeCenter H Enhanced Cooling Modules (two modules)
68Y6601	IBM BladeCenter H 2980 W AC Power Modules with Fan Packs (two modules)
25R5783	4.3 m 208 V Double 30A NEMA L6-30P
25R5784	4.3 m 230 V Dual 32A IEC 309 P+N+G/16A IEC 320-C20
25R5785	2.8 m 200-240 V Triple 16A IEC 320-C20
25R5811	4.3 m 220 V Double 30A KSC 8305 (for South Korea)
25R5812	4.3 m 230 V Dual 32A AS/NZS 3112/16A IEC 320-C20 (for Australia/NZ)

For more information and a list of all supported options, see *IBM BladeCenter Products and Technology* from IBM Redbooks: http://www.redbooks.ibm.com/abstracts/sg247523.html?Open
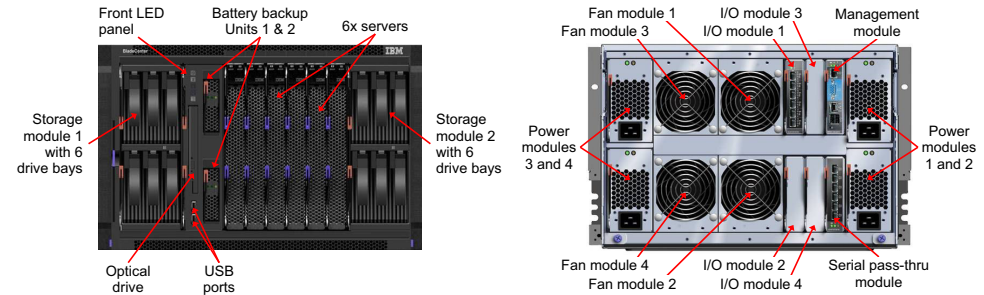
IBM BladeCenter S

Model[1]	Server bays (6 max)	Advanced Management Module	High-speed I/O Module bays[a]	Standard I/O Module bays	I/O modules standard	Storage modules (2 max)	Drives (12 max)	Power supplies (4 max)	Fans (4 max)	Optical drive	Announced
8886-1Tx	6 available	1 standard / 1 max	None	4 total / 4 avail	None	Optional	Optional	2x 1450 W C14	4	Optional	Jul 2009
8886-ETx[b]	6 available	1 standard / 1 max	None	4 total / 4 avail	1x SAS Connectivity	1 (6 drive bays)	Open	4x 1450 W C14	4	Multi-burner	Jul 2009
8886-EVx[b]	6 available	1 standard / 1 max	None	4 total / 4 avail	2x SAS RAID+Battery	2 (6 drive bays each)	Open	4x 1450 W C14	4	Multi-burner	Jul 2009

a. Only BladeCenter H and HT support high-speed I/O module bays
b. Express model

Components	Specification
Machine type	System x sales channel: 8886 Power Systems sales channel: 7779
Form factor	**7U rack-mounted unit**.
Maximum number of servers supported	**Up to 6 server blades in 6 bays**. Supports double-wide servers or servers with expansion blades.
Systems supported	All IBM BladeCenter servers.
Nodes per 42U rack	Up to 42 servers in six chassis
Storage subsystem	Two front-accessible bays for **disk storage modules**. Each storage module can house up to **six 3.5-inch disk drives** of internal storage (**12 drives total**). Storage accessible from installed blade servers via SAS expansion cards in the servers and SAS modules in the chassis. Use of **SAS RAID Controller Module** provides integrated RAID and SAS-based storage area networking capabilities. SAS RAID Controller Module includes front-accessible **battery backup unit**.
Advanced Management Modules	One **Advanced Management Module** (AMM), non-redundant, hot-swap, rear access, comprehensive system management functions; PowerPC 440GP controller. Communicates with integrated system management processor on each blade server. Complete KVM switch local functionality.
Media tray	Two USB ports and optional Multiburner optical drive connectable to any one blade server; switchable via buttons on media tray or remote via the AMM web interface.
Ports	AMM: DB-15 analog video port, Dual USB 2.0 for keyboard and mouse, Serial (RJ45), 10/100 Ethernet remote management Media tray: Two USB 2.0 ports, connectable to any server (not sharable) Rear: Optional **serial pass-thru module** in dedicated bay to supply 1 serial port for each blade bay.
I/O architecture	Up to **four I/O modules** supporting either 1 Gb Ethernet (some modules with 10 Gb uplinks), 4 Gb or 8 Gb Fibre Channel, or 3Gb SAS connections for each of the blade servers. Bay 1 routes server onboard Ethernet; bay 2 routes CFFh expansion adapter (ports 1 & 2 only, limited adapter support); bays 3 and 4 route CIOv or CFFv expansion adapter in each server.
Power modules	Up to **four hot-swap power modules**; Supports **110V and 220V** supply. Rear access; Supplies power to chassis components up to 1450W at 220V or 950W at 110V; Supports redundancy within pair. Power modules 1 and 2 supply power to all blade bays and components; Power modules 3 and 4 needed for high-performance servers or higher redundancy modes or if storage module 2 installed. Models 1Tx, ETx and EVx have IEC320-C14 sockets; Other models have C20 sockets.
Fan modules	**Four fan modules** standard and maximum. Hot-swap and redundant, variable speed, rear access, front to back airflow.
System LED panel	Front and rear information panels. Provides power-on, location, over-temperature, information, and system-error conditions.
Declared sound level	6.8 bels
Temperature	Operating air temperature 10°C to 35°C (50°F to 95°F) up to 900 m (3000 ft) 10°C to 32°C (50°F to 90°F) up to 2100 m (7000 ft)
Electrical power	Input power: 100-127V or 200-240 V ac (nominal), 50 or 60 Hz
Power consumption	3,500 watts maximum
Power cords	One rack power cable supplied with each power module.
Dimensions	▸ Height: 306 mm (12 in) ▸ Width: 444 mm (17.5 in) ▸ Depth: 733 mm (28.9 in)
Weight	40 to 108 kg (90 to 240 lb)

Components	Specification
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension.

Front LED panel — Battery backup Units 1 & 2 — 6x servers
Storage module 1 with 6 drive bays
Storage module 2 with 6 drive bays
Optical drive — USB ports

Fan module 1 — I/O module 3 — Management module
Fan module 3 — I/O module 1
Power modules 3 and 4
Power modules 1 and 2
Fan module 4 — I/O module 2 — Serial pass-thru module
Fan module 2 — I/O module 4

Popular and system-unique options: (see model table for processor options)

Part	Description
43W3581	IBM BladeCenter S 6-Disk Storage Module
42D0767	IBM 2 TB 7.2K 6 Gbps NL SAS 3.5-inch HS HDD
44W2244	600 GB 15 K 6 Gbps SAS 3.5-inch Hot-Swap HDD
39Y9324	IBM Server Connectivity Module (1Gb Ethernet)
32R1860	IBM BladeCenter Layer 2/3 Copper GbE Switch Module
32R1859	IBM BladeCenter Layer 2-7 GbE Switch Module
44W4404	IBM BladeCenter 1/10 Gb Uplink Ethernet Switch Module
43W4395	Cisco Catalyst Switch Module 3012 for IBM BladeCenter
44X1905	QLogic 20-Port 8 Gb SAN Switch Module
44X1907	QLogic 8 Gb Intelligent Pass-Thru Module
39Y9195	SAS Connectivity Module
43W3584	SAS RAID Controller Module for IBM BladeCenter S (with Battery Backup Unit)
2019A1X	Advanced Management Module
43W3582	950 W/1450 W Auto-Sensing Power Supplies 3 and 4
46C7438	C14 950 W/1450 W Auto-Sensing Power Supplies 3 and 4
43W3583	Serial Pass-thru Module for BladeCenter S
201886X	BladeCenter S Office Enablement Kit (11U rack)

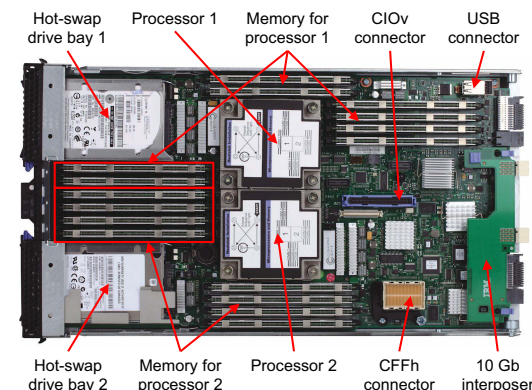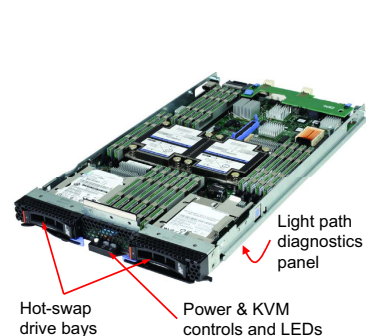For more information and a list of all supported options, see *IBM BladeCenter Products and Technology* from IBM Redbooks: http://www.redbooks.ibm.com/abstracts/sg247523.html?Open

IBM BladeCenter HS23

Model[1]	Intel Xeon processor (2 maximum)	Second CPU	Memory and speed	Disk adapter	Disk bays (used / max.)	Disks	Network	I/O slots (used / max.)	Announced
7875-B1x	1x Xeon E5-2620 6C 2.0 GHz 15 MB 1333 MHz 95 W	81Y9295	4x 4 GB 1333 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012
7875-F1x	1x Xeon E5-2648L 8C 1.8 GHz 20 MB 1600 MHz 70 W	94Y8562	4x 4 GB 1333 MHz	SAS/SATA RAID	0 / 2	Open	2x 1GbE + 2x 10GbE[a]	1 / 2[b]	Mar 2012

a. These models include the 10 GB interposer card for HS23, part number 94Y8550. This card routes the onboard 10 GBE to chassis bays 7 and 9 in BladeCenter H and HT.
b. The 10 GB interposer card in these models provides the same midplane connectors as the adapter installed in the CFFh slot (if any). To use the CFFh slot, you must first remove the interposer card.

Components	Specification
Form factor	Single-wide (30 mm) blade server.
Chassis support	BladeCenter H, BladeCenter HT, and BladeCenter S supported. BladeCenter E has limited support. For details, see the *IBM Redbooks Product Guide* for *IBM BladeCenter HS23*.
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight-core (up to 2.7 GHz) or six-core (up to 2.9 GHz) or quad-core (up to 2.4 GHz) or dual-core (up to 3.0 GHz). Two QPI links up to 8.0 GT/s each. **Up to 1600 MHz of memory speed**. Up to 20 MB L3 cache.
Chip set	Intel C600.
Memory	**Up to 16 DDR3 DIMM sockets** (eight DIMMs per processor) using very low profile (VLP) DIMMs. Support for up to 1600 MHz of memory speed depending on the processor. Four memory channels per processor (two DIMMs per channel).
Memory maximums	**Up to 256 GB** with 16x 16 GB RDIMMs and two processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Two 2.5" hot-swap SAS/SATA drive bays supporting SAS, SATA, and SSD drives.
Maximum internal storage	Up to 1.8 TB with 900 GB 2.5" SAS HDDs, up to **2 TB with 1 TB 2.5" NL SAS HDDs**, up to 2 TB with 1-TB 2.5" SATA HDDs, or up to 512 GB with 256 GB 2.5" SATA SSDs. Intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller.
Network interfaces	Two Gigabit Ethernet ports and **two 10 Gb Ethernet ports** with integrated **Emulex BladeEngine 3 (BE3)** controller.
PCI expansion slots	One CIOv slot (PCIe 3.0 x8) and one CFFh slot (PCIe 3.0 x16). Two additional PCIe 2.0 x8 standard form factor slots with the **optional PCI Express Gen 2 Expansion Blade II** (slot 1 is full height and full length; slot 2 is full height and half length). One HS23 supports up to four PCIe expansion blades (eight slots). Up to four optional GPU expansion blades with NVIDIA Tesla M2090, M2075, or M2070Q graphics processing units.
Ports	One internal USB port (for **embedded hypervisor**).
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel on the underside of the blade, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module 1.2.
Video	Matrox G200eR2 video core with 16-MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors (32 bits per pixel).
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008 x64, Red Hat Enterprise Linux 5 and 6 (x64), SUSE Linux Enterprise Server 10 and 11 (for AMD64/EM64T), VMware vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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	Height: 245 mm (9.7 in), width: 29 mm (1.14 in), depth: 446 mm (17.6 in).
Weight	Maximum configuration (single-wide blade): 5.4 kg (12 lb).

Light path diagnostics panel

Hot-swap drive bays

Power & KVM controls and LEDs

Hot-swap drive bay 1   Processor 1   Memory for processor 1   CIOv connector   USB connector

Hot-swap drive bay 2   Memory for processor 2   Processor 2   CFFh connector   10 Gb interposer

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3149	8 GB (2Gb, 2Rx4, 1.5 V) PC3-12800 CL11 ECC DDR3 1600 MHz VLP RDIMM
46C0599	16 GB (1x 16 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz VLP
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
81Y9650	IBM 900 GB 10K 6 Gbps SAS 2.5-inch HS HDD
43W7718	IBM 200 GB SATA 2.5-inch SFF Slim-HS SSD
41Y8300	IBM USB Memory Key for VMware ESXi 5.0
94Y8550	10 Gb Interposer Card for IBM BladeCenter HS23
81Y3120	Emulex 10GbE Virtual Fabric Adapter II (CFFh) for HS23
90Y9332	Emulex 10GbE Virtual Fabric Adapter Advanced II (CFFh) for HS23
68Y7484	IBM BladeCenter PCI Express Gen 2 Expansion Blade II
68Y7478	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2075
68Y7479	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2070Q
00D6881	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2090

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS23*:
http://www.redbooks.ibm.com/abstracts/tips0843.html?Open

IBM BladeCenter HS23 (E5-2600 v2) (page 1 of 2)

Model[1]	Intel Xeon processor (2 maximum)	Second CPU	Memory and speed	RAID controller	Disk bays (used / max)	Disks	Network	I/O slots (used / max)	Announced
7875-A3x	1x E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	94Y5261	1x 8GB 1600MHz[a]	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE[b]	0 / 2	Nov 2013
7875-A4x	1x E5-2603 v2 4C 1.8GHz 10MB 1333MHz 80W	94Y5260	1x 8GB 1600MHz[a]	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE[b]	0 / 2	Nov 2013
7875-B4x	1x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	94Y5262	1x 8GB 1600MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-B5x	1x E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	94Y5263	1x 8GB 1600MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-B6x	1x E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	94Y5264	1x 8GB 1600MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-C9x	1x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	94Y5265	1x 8GB 1866MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013

a. For models A3x and A4x, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.
b. Models A3x and A4x support 10 GbE with the addition of the 10Gb Interposer Card for IBM BladeCenter HS23, 94Y8550

Components	Specification
Form factor	Single-wide (30 mm) blade server.
Chassis support	BladeCenter H, BladeCenter HT, and BladeCenter S supported. BladeCenter E has limited support. For details, see the *IBM Redbooks Product Guide* for *IBM BladeCenter HS23 (E5-2600 v2)*.
Processor	Up to two **Intel Xeon processor E5-2600 v2** product family CPUs with 12-core (up to 2.7 GHz), 10-core (up to 3.0 GHz), 8-core (up to 2.6 GHz), 6-core (up to 2.6 GHz), or 4-core (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. **Up to 1866 MHz memory speed**. Up to 30 MB L3 cache.
Chip set	Intel C600.
Memory	**Up to 16 DDR3 DIMM sockets** (8 DIMMs per processor) using Very Low Profile (VLP) DIMMs. Support for up to **1866 MHz memory speed** depending on the processor. Four memory channels per processor (2 DIMMs per channel).
Memory maximums	**Up to 512 GB** with 16x 32 GB RDIMMs and two processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Two 2.5" hot-swap SAS/SATA drive bays supporting SAS, SATA, and SSD drives.
Maximum internal storage	**Up to 3.2 TB** with 1.6 TB 2.5" SAS SSDs or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" NL SAS/SATA HDDs, or up to 1.6 TB with 800 GB SATA SSDs. Intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller.
Network interfaces	Two Gigabit Ethernet ports and **two 10 Gb Ethernet ports** with integrated Emulex BladeEngine 3 (BE3) controller.
PCI expansion slots	One CIOv slot (PCIe 3.0 x8) and one CFFh slot (PCIe 3.0 x16). Two additional PCIe 2.0 x8 standard form factor slots with the **optional PCI Express Gen 2 Expansion Blade II** (slot 1 is full height and full length; slot 2 is full height and half length). One HS23 supports up to four PCIe expansion blades (eight slots). Up to four optional GPU expansion blades with NVIDIA Tesla M2090, M2075, or M2070Q graphics processing units.
Ports	One internal USB port (for **embedded hypervisor**).
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel on the underside of the blade, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module 1.2.
Video	Matrox G200eR2 video core with 16-MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors (32 bits per pixel).
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, 2008 R2, and 2008 (x64), Red Hat Enterprise Linux 5 (x64) and 6 (x86 and x64), SUSE Linux Enterprise Server 11 (for x86 and x64), Oracle Solaris 10 and 11, and VMware vSphere 5.1 and 5.5.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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	Height: 245 mm (9.7 in), width: 29 mm (1.14 in), depth: 446 mm (17.6 in).
Weight	Maximum configuration (single-wide blade): 5.4 kg (12 lb).

Hot-swap drive bay 1 · Processor 1 · Memory for processor 1 · CIOv connector · USB connector

Light path diagnostics panel

Hot-swap drive bays · Power & KVM controls and LEDs

Hot-swap drive bay 2 · Memory for processor 2 · Processor 2 · CFFh connector · 10 Gb interposer

Popular and system-unique options (see the model table for processor options):

Part	Description
00D5008	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz VLP RDIMM
46W0712	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz VLP RDIMM
46W0716	16GB (1x16GB, 2Rx4, 1.35V)PC3L-12800 CL11 ECC DDR3 1600MHz VLP RDIMM
49Y6195	IBM 1.6TB SAS 2.5" MLC HS Enterprise SSD
00AD075	IBM 1.2TB 10K 6Gbps SAS 2.5'' G2HS HDD
41Y8382	IBM USB Memory Key for VMWare ESXi 5.1 Update 1
94Y8550	10 Gb Interposer Card for IBM BladeCenter HS23
81Y3120	Emulex 10GbE Virtual Fabric Adapter II for HS23
90Y9332	Emulex 10GbE Virtual Fabric Adapter Advanced II for HS23
68Y7484	IBM BladeCenter PCI Express Gen 2 Expansion Blade II
68Y7478	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2075
68Y7479	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2070Q
00D6881	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2090

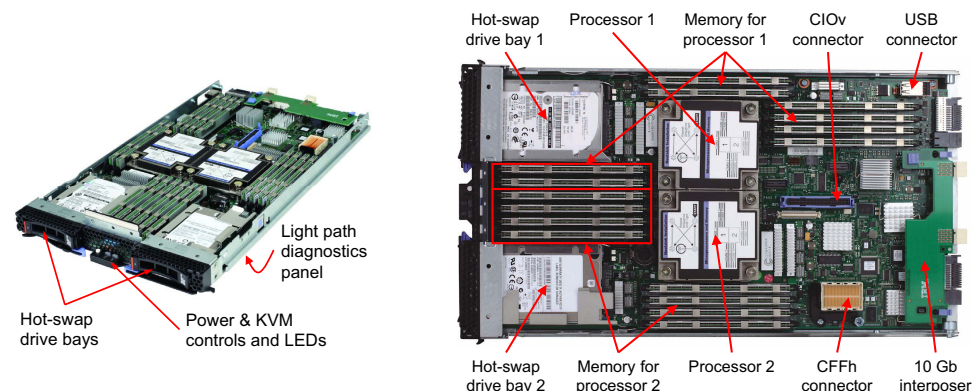For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS23 (E5-2600 v2)*:
http://www.redbooks.ibm.com/abstracts/tips1095.html?Open

Model[1]	Intel Xeon processor (2 maximum)	Second CPU	Memory and speed	RAID controller	Disk bays (used / max)	Disks	Network	I/O slots (used / max)	Announced
7875-CAx	1x E5-2660 v2 10C 2.2GHz 25MB 1866MHz 95W	94Y5266	1x 8GB 1866MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-CBx	1x E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	94Y5267	1x 8GB 1866MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-CCx	1x E5-2680 v2 10C 2.8GHz 25MB 1866MHz 115W	94Y5268	1x 8GB 1866MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-D2x	1x E5-2650L v2 10C 1.7GHz 25MB 1600MHz 70W	94Y5275	1x 8GB 1600MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-F2x	1x E5-2697 v2 12C 2.7GHz 30MB 1866MHz 130W	94Y5277	1x 8GB 1866MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-G3x	1x E5-2628L v2 8C 1.9GHz 20MB 1600MHz 70W	94Y5279	1x 8GB 1866MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 4x 10 GbE[a]	1 / 2	Nov 2013
7875-G4x	1x E5-2658 v2 10C 2.4GHz 25MB 1866MHz 95W	94Y5282	1x 8GB 1866MHz	LSI SAS2004	2x 2.5" HS	Open bay	2x GbE + 4x 10 GbE[a]	1 / 2	Nov 2013

a. Models G3x and G4x ship standard with Emulex 10GbE VFA Advanced II for IBM BladeCenter HS23, 90Y9332 and IBM Virtual Fabric Advanced Software Upgrade (LOM), 90Y9310

Components	Specification
Form factor	Single-wide (30 mm) blade server.
Chassis support	BladeCenter H, BladeCenter HT, and BladeCenter S supported. BladeCenter E has limited support. For details, see the *IBM Redbooks Product Guide* for *IBM BladeCenter HS23 (E5-2600 v2)*.
Processor	Up to two **Intel Xeon processor E5-2600 v2** product family CPUs with 12-core (up to 2.7 GHz), 10-core (up to 3.0 GHz), 8-core (up to 2.6 GHz), 6-core (up to 2.6 GHz), or 4-core (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. **Up to 1866 MHz memory speed**. Up to 30 MB L3 cache.
Chip set	Intel C600.
Memory	**Up to 16 DDR3 DIMM sockets** (8 DIMMs per processor) using Very Low Profile (VLP) DIMMs. Support for up to **1866 MHz memory speed** depending on the processor. Four memory channels per processor (2 DIMMs per channel).
Memory maximums	**Up to 512 GB** with 16x 32 GB RDIMMs and two processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Two 2.5" hot-swap SAS/SATA drive bays supporting SAS, SATA, and SSD drives.
Maximum internal storage	**Up to 3.2 TB** with 1.6 TB 2.5" SAS SSDs or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" NL SAS/SATA HDDs, or up to 1.6 TB with 800 GB SATA SSDs. Intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller.
Network interfaces	Two Gigabit Ethernet ports and **two 10 Gb Ethernet ports** with integrated Emulex BladeEngine 3 (BE3) controller.
PCI expansion slots	One CIOv slot (PCIe 3.0 x8) and one CFFh slot (PCIe 3.0 x16). Two additional PCIe 2.0 x8 standard form factor slots with the **optional PCI Express Gen 2 Expansion Blade II** (slot 1 is full height and full length; slot 2 is full height and half length). One HS23 supports up to four PCIe expansion blades (eight slots). Up to four optional GPU expansion blades with NVIDIA Tesla M2090, M2075, or M2070Q graphics processing units.
Ports	One internal USB port (for **embedded hypervisor**).
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel on the underside of the blade, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module 1.2.
Video	Matrox G200eR2 video core with 16-MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors (32 bits per pixel).
Operating systems supported	Microsoft Windows Server 2012 R2, 2012, 2008 R2, and 2008 (x64), Red Hat Enterprise Linux 5 (x64) and 6 (x86 and x64), SUSE Linux Enterprise Server 11 (for x86 and x64), Oracle Solaris 10 and 11, and VMware vSphere 5.1 and 5.5.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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	Height: 245 mm (9.7 in), width: 29 mm (1.14 in), depth: 446 mm (17.6 in).
Weight	Maximum configuration (single-wide blade): 5.4 kg (12 lb).

Hot-swap drive bay 1 — Processor 1 — Memory for processor 1 — CIOv connector — USB connector

Light path diagnostics panel

Hot-swap drive bays — Power & KVM controls and LEDs

Hot-swap drive bay 2 — Memory for processor 2 — Processor 2 — CFFh connector — 10 Gb interposer

Popular and system-unique options (see the model table for processor options):

Part	Description
00D5008	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz VLP RDIMM
46W0712	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz VLP RDIMM
46W0716	16GB (1x16GB, 2Rx4, 1.35V)PC3L-12800 CL11 ECC DDR3 1600MHz VLP RDIMM
49Y6195	IBM 1.6TB SAS 2.5" MLC HS Enterprise SSD
00AD075	IBM 1.2TB 10K 6Gbps SAS 2.5" G2HS HDD
41Y8382	IBM USB Memory Key for VMWare ESXi 5.1 Update 1
94Y8550	10 Gb Interposer Card for IBM BladeCenter HS23
81Y3120	Emulex 10GbE Virtual Fabric Adapter II for HS23
90Y9332	Emulex 10GbE Virtual Fabric Adapter Advanced II for HS23
68Y7484	IBM BladeCenter PCI Express Gen 2 Expansion Blade II
68Y7478	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2075
68Y7479	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2070Q
00D6881	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2090

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS23 (E5-2600 v2)*:
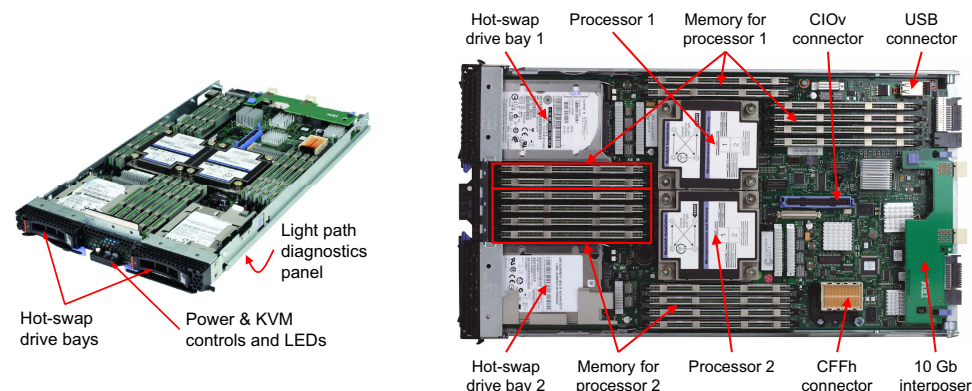http://www.redbooks.ibm.com/abstracts/tips1095.html?Open

IBM BladeCenter HS23 Express Models (E5-2600 v2)

Model[1,2]	Processor (2 maximum)	Second CPU	Memory & speed	Disk adapter	Disk bays (used / max.)	Disks	Network	I/O slots (used/max)	Announced
United States, Canada, Latin America									
7875-E7U	2x E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	Standard	2x 8GB 1600MHz	Integrated SAS/SATA	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-E8U	2x E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	Standard	8x 8GB 1866MHz	Integrated SAS/SATA	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
7875-E9U	2x E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	Standard	8x 8GB 1866MHz	Integrated SAS/SATA	2x 2.5" HS	Open bay	2x GbE + 2x 10 GbE	0 / 2	Nov 2013
Japan									
7875-EAJ	1x E5-2609 v2 4C 2.5GHz 10MB Cache 1333MHz 80W	Standard	2x 8GB 1600MHz[a]	Integrated SAS/SATA	2x 2.5" HS	Open bay	2x GbE[b]	0 / 2	Nov 2013
7875-EBJ	1x E5-2630 v2 6C 2.6GHz 15MB Cache 1600MHz 80W	94Y5260	2x 8GB 1600MHz	Integrated SAS/SATA	2x 2.5" HS	Open bay	2x GbE[b]	0 / 2	Nov 2013

a. For model EAJ, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.
b. Models EAJ and EBJ support 10 GbE with the addition of the 10Gb Interposer Card for IBM BladeCenter HS23, 94Y8550
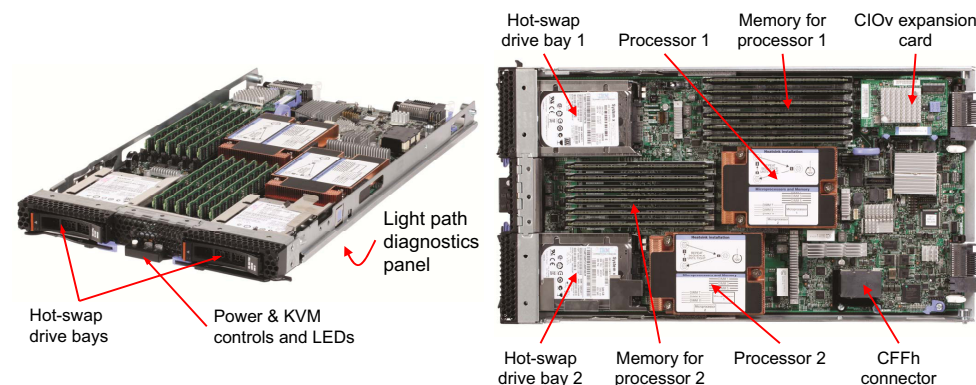
IBM BladeCenter HS23E

Model[1]	Intel Processor (Xeon E5-2400: 2 maximum; Pentium: 1 maximum)	Second CPU	Memory and speed	Disk adapter	Disk bays (used / max.)	Disks	Network	I/O slots (used / max.)	Announced
8038-B1x	1x Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	90Y5292	1x 2 GB 1066 MHz[a]	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012
8038-B3x	1x Xeon E5-2407 4C 2.2GHz 10MB 1066MHz 80W	90Y5291	3x 4 GB 1066 MHz[a]	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012
8038-C2x	1x Xeon E5-2430 6C 2.2GHz 15MB 1333MHz 95W	90Y5288	3x 4 GB 1333 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012
8038-C3x	1x Xeon E5-2440 6C 2.4GHz 15MB 1333MHz 95W	90Y5287	3x 4 GB 1333 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012
8038-C4x	1x Xeon E5-2430 6C 2.2GHz 15MB 1333MHz 95W	90Y5288	3x 8 GB 1333 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	Oct 2012
8038-D2x	1x Xeon E5-2450 8C 2.1GHz 20MB 1600MHz 95W	90Y5286	3x 8 GB 1600 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	Oct 2012
8038-D4x	1x Xeon E5-2470 8C 2.3GHz 20MB 1600MHz 95W	90Y5284	3x 8 GB 1600 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	Oct 2012
8038-F1x	1x Pentium 1403 2C 2.6GHz 5MB 1066MHz 80W	Not supported	1x 2 GB 1066 MHz[a]	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012
8038-F2x	1x Pentium 1407 2C 2.8GHz 5MB 1066MHz 80W	Not supported	3x 4 GB 1066 MHz[a]	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012

a. For models B1x, B3x, F1x, and F2x, the standard DIMMs are rated at 1333 MHz, but operate at up to 1066 MHz to match the processor memory speed.

Components	Specification
Form factor	Single-wide (30 mm) blade server.
Chassis support	BladeCenter H, BladeCenter HT, BladeCenter S, and BladeCenter E. (Some configurations may have limitations. See Table 5 for compatibility details.)
Processor	Up to two **Intel Xeon processor E5-2400** product family processors with eight cores (up to 2.3 GHz), six cores (up to 2.4 GHz), or four cores (up to 2.2 GHz), one QPI link up to 8.0 GTps, up to 1600 MHz memory speed, up to 20 MB L3 cache; or one Intel Xeon processor E5-1410 with four cores at 2.8 GHz, 10 MB L3 cache, and 1333 MHz memory speed; or one Intel Pentium processor 1400 product family with two cores up to 2.8 GHz, 5 MB L3 cache, and 1066 MHz memory speed.
Chipset	Intel C600 Series.
Memory	**Up to 12 DDR3 DIMM sockets** (six DIMMs per processor) using Very Low Profile (VLP) DIMMs. Support for up to 1600 MHz memory speed depending on the processor. Three memory channels per processor (two DIMMs per channel).
Memory maximums	**Up to 192 GB** with 12x 16 GB RDIMMs and two processors.
Memory protection	ECC, Chipkill, memory mirroring, and memory sparing.
Drive bays	**Two 2.5-inch SAS/SATA hot-swap drive bays** supporting SAS, SATA, and SSD drives.
Maximum internal storage	**Up to 2 TB** with 1 TB 2.5-inch NL SAS or SATA HDDs, or up to 1.8 TB with 900 GB 2.5-inch SAS HDDs, or up to 400 GB with 200 GB 2.5-inch SATA SSDs. An intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	**RAID 0 or 1 with ServeRAID C105**. Optional hardware RAID 0, 1, 10 or 1E with ServeRAID H1135.
Network interfaces	**Two Gigabit Ethernet ports** with an integrated **Broadcom BCM5718** controller.
PCI Expansion slots	One CIOv slot (PCIe 3.0 x8) and one CFFh slot (PCIe 3.0 x16). With the optional PCI Express Gen 2 Expansion Blade II: Two additional PCIe 2.0 x8 standard form factor slots (slot 1 is full-height full-length, slot 2 is full-height half-length). One HS23E supports up to four PCIe expansion blades (8 slots). Up to four optional GPU expansion blades with either NVIDIA Tesla M2090, M2075, or M2070Q graphics processing units.
Ports	One internal USB port (for embedded hypervisor).
Hot-swap components	Hard drives.
Systems management	UEFI, Renesas SH7757 controller-based IBM Integrated Management Module II (IMM2) with remote presence (graphics, keyboard and mouse, and virtual media), Predictive Failure Analysis, light path diagnostics panel, Automatic Server Restart, IBM Systems Director, IBM Systems Director Active Energy Manager, IBM ServerGuide, and IBM FastSetup.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. The maximum resolution is 1600x1200 at 75 Hz with 16 M colors (32 bits per pixel).
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008 (x64), Red Hat Enterprise Linux 5 and 6 (x64), SUSE Linux Enterprise Server 10 and 11 (x64), VMware vSphere 5.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2.

Components	Specification
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/next business day (NBD) response time.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePac offerings: 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	Height: 245 mm (9.6 in.), width: 29 mm (1.14 in.), depth: 446 mm (17.6 in.)
Weight	Maximum configuration (single-wide blade): 4.6 kg (10.2 lb).

Hot-swap drive bay 1 — Processor 1 — Memory for processor 1 — CIOv expansion card

Light path diagnostics panel

Hot-swap drive bays — Power & KVM controls and LEDs

Hot-swap drive bay 2 — Memory for processor 2 — Processor 2 — CFFh connector

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3149	8GB (2Gb, 2Rx4,1.5V) DDR3-1600 PC3-12800 VLP RDIMM
46C0599	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz VLP DRIMM
90Y4750	ServeRAID H1135 Controller for IBM Flex System and BladeCenter
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF Slim-HS HDD
42C1810	Intel 10Gb 2-port Ethernet Expansion Card CFFh
68Y7484	IBM BladeCenter PCI Express Gen 2 Expansion Blade II
00D6881	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2090
68Y7478	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2075
68Y7479	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2070Q
41Y8300	IBM USB Memory Key for VMWare ESXi 5.0

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS23E*:
http://www.redbooks.ibm.com/abstracts/tips0887.html?0pen

IBM BladeCenter HX5 (7873) base models with optional MAX5

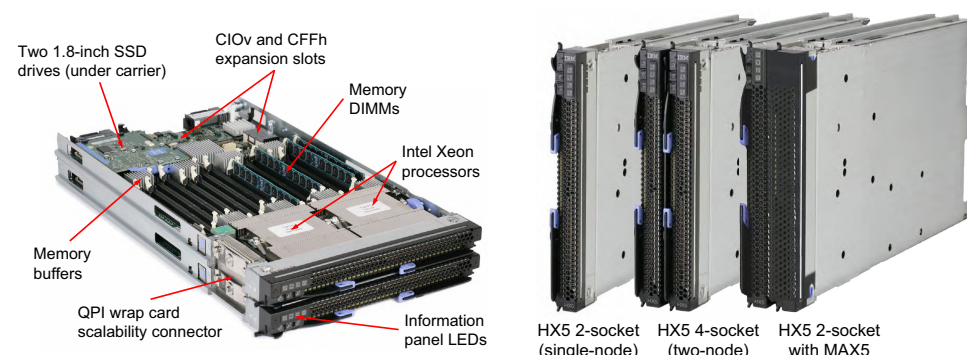| Model[1]	Processor (2 maximum)	MAX5	Scale to two nodes	Standard memory	Networking[a]	I/O slots	Storage	Drive bays	Announced
Base models with optional MAX5									
7873-B1x	1x Xeon E7-4807 6C 1.86 GHz 18 MB 800 MHz 95 W	Optional	Optional	2x 4G B	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-B2x	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Optional	2x 4 GB	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-B3U[b]	1x Xeon E7-4850 10C 2.00GHz 24MB 1066MHz130w	Optional	Optional	2x 8 GB	2x 1Gb	CIOv, CFFh	Optional	0 / 2	Nov 2012
7873-C1x	1x Xeon E7-8837 8C 2.67 GHz 24 MB 1066 MHz 130 W	Optional	Optional	2x 4 GB (978 MHz)[c]	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-D1x	1x Xeon E7-8867L 10C 2.13 GHz 30 MB 1066 MHz 105 W	Optional	Optional	2x 4 GB	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-F4x	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Optional	2x 4 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Mar 2013
7873-F5x	1x Xeon E7-4870 10C 2.40 GHz 30 MB 1066 MHz 130 W	Optional	Optional	2x 4 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Mar 2013

    a. Some models include a 2-port 10 Gb Ethernet card, either Emulex 10 GBE Virtual Fabric Adapter Advanced (E1) or Emulex 10 GBE Virtual Fabric Adapter Advanced II (E2).
    b. Model B3U is available in the US only
    c. In this model, memory operates at a lower speed than the speed supported by the processor, as indicated.

Components	Specification
Form factor	Single HX5 (single node): 30 mm blade (single-wide). Double HX5 (two nodes): 60 mm blade (double-wide). Single HX5 + MAX5 memory expansion unit: 60 mm blade (double-wide).
Chassis support	BladeCenter H, BladeCenter S, BladeCenter HT AC; BC-HT DC support by using SPORE. Support is limited for 130 W processors and in BladeCenter S. For details, see the *IBM BladeCenter HX5 Product Guide*.
Scalability	**The HX5 can scale as follows**: ▶ Single HX5: Two processors, 16 DIMM sockets ▶ Double HX5: Four processors, 32 DIMM sockets ▶ Single HX5 + MAX5 memory expansion unit: Four processors, 40 DIMMs Scalability provided by using a QPI wrap connector on the edge of the server and MAX5; used to connect a second HX5 or MAX5 to a base HX5 server.
Processor type	**Intel Xeon E7-2800, E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	Single HX5: One or two processors. Double HX5: **Four processors**.
Cache (maximum)	**Up to 30 MB** per processor.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	Single HX5: 16 DIMM sockets. Double HX5: 32 DIMM sockets total. **Single HX5 + MAX5: 40 DIMM sockets total**. (MAX5 adds 24 sockets.)
Memory (maximum)	Single HX5: 512 GB (using 32 GB DIMMs). Two HX5: 1 TB (using 32 GB DIMMs). **Single HX5 + MAX5: 1.25 TB** (using 32 GB DIMMs).
I/O expansion slots	Single HX5: One CIOv connector and one CFFh connector. Single HX5 + MAX5: One CIOv connector and one CFFh connector. Two nodes: Two CIOv connectors and two CFFh connectors.
Disk bays (total/hot-swap)	Bays require optional SSD Expansion Card with integrated RAID. Single HX5: Two non-hot-swap 1.8-inch bays supporting solid-state drives. Double HX5: **Four non-hot-swap 1.8-inch bays** supporting solid-state drives.
Maximum internal storage	Single HX5: Up to 400 GB of solid-state storage (with 200 GB SSDs). Double HX5: **Up to 800 GB of solid-state storage** (with 200 GB SSDs).
Network interface	**Broadcom 5709S** onboard NIC with dual Gigabit Ethernet ports with TOE. Some models: Emulex Virtual Fabric 10 GB Expansion Card (CFFh).
RAID support	RAID 0 or RAID 1 integrated on optional SSD Expansion Card; LSI 1064E SAS. controller; SSD Expansion Card installed in a dedicated slot.
Hypervisor	Embedded hypervisor supported by using an internal USB port.
Video	Matrox G200e integrated in IMM on a system board; 16-MB video memory.
Systems management	**Integrated management module** systems management processor.
Security	Trusted Platform Module, power-on password, administrator password, unattended boot, selectable boot, and unattended start mode
OS support	Microsoft Windows, Red Hat Linux, SUSE Linux, and VMware.

Components	Specification
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

Two 1.8-inch SSD drives (under carrier)
CIOv and CFFh expansion slots
Memory DIMMs
Intel Xeon processors
Memory buffers
QPI wrap card scalability connector
Information panel LEDs
HX5 2-socket (single-node)
HX5 4-socket (two-node)
HX5 2-socket with MAX5

Popular and system-unique options:

Part	Description
46M6973	IBM MAX5 for BladeCenter
88Y6128	IBM MAX5 V2 for BladeCenter
59Y5877	IBM HX5 MAX5 1-node Scalability Kit
59Y5889	IBM HX5 1-Node Speed Burst Card
46M6975	IBM HX5 2-Node Scalability Kit
46C0564	4 GB (1x4 GB, 2Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1333 MHz VLP RDIMM
46C0570	8 GB (1x8 GB, 4Rx8, 1.35V) PC3-8500 CL7 ECC DDR3 1066 MHz VLP RDIMM
46C0599	16 GB (1x16 GB, 4Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1066 MHz VLP RDIMM
00D5008	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333 MHz VLP RDIMM
46M6908	SSD Expansion Card for IBM BladeCenter HX5
43W7746	IBM 200 GB SATA 1.8" MLC SSD
41Y8296	IBM USB Memory Key for VMware ESXi 4.1 Update 1
46M6730	IBM BladeCenter PCI Express Gen 2 Expansion Blade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HX5*:
http://www.redbooks.ibm.com/abstracts/tips0824.html?Open

IBM BladeCenter HX5 (7873) base models with standard MAX5

Model[1]	Processor (2 maximum)	MAX5	Scale to two nodes	Standard memory	Networking[a]	I/O slots	Storage	Drive bays	Announced
Base models with standard MAX5									
7873-A1x	2x Xeon E7-2830 8C 2.13 GHz 24 MB 1066 MHz 105W	Standard	Not supported	HX5: 4x 4 GB, MAX5: None	2x 1Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-A2x	2x Xeon E7-2860 10C 2.26 GHz 24 MB 1066 MHz 130W	Standard	Not supported	HX5: 4x 4 GB, MAX5: None	2x 1Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-A3x	2x Xeon E7-2870 10C 2.40 GHz 30 MB 1066 MHz 130W	Standard	Not supported	HX5: 4x 4 GB, MAX5: None	2x 1Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011

a. Some models include a 10 Gb Ethernet card, either Emulex 10GbE Virtual Fabric Adapter Advanced (E1) or Emulex 10GbE Virtual Fabric Adapter Advanced II (E2).

Components	Specification
Form factor	Single HX5 (single node): 30 mm blade (single-wide). Double HX5 (two nodes): 60 mm blade (double-wide). Single HX5 + MAX5 memory expansion unit: 60 mm blade (double-wide).
Chassis support	BladeCenter H, BladeCenter S, BladeCenter HT AC; BC-HT DC support by using SPORE. Support is limited for 130 W processors and in BladeCenter S. For details, see the *IBM BladeCenter HX5 Product Guide*.
Scalability	**The HX5 can scale as follows**: ▶ Single HX5: Two processors, 16 DIMM sockets ▶ Double HX5: Four processors, 32 DIMM sockets ▶ Single HX5 + MAX5 memory expansion unit: Four processors, 40 DIMMs Scalability provided using a QPI wrap connector on the edge of the server and MAX5; used to connect a second HX5 or MAX5 to a base HX5 server.
Processor type	**Intel Xeon E7-2800, E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	Single HX5: One or two processors. Double HX5: **Four processors**.
Cache (maximum)	**Up to 30 MB** per processor.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	Single HX5: 16 DIMM sockets. Double HX5: 32 DIMM sockets total. **Single HX5 + MAX5: 40 DIMM sockets total**. (MAX5 adds 24 sockets.)
Memory (maximum)	Single HX5: 512 GB (using 32 GB DIMMs). Two HX5: 1 TB (using 32 GB DIMMs). **Single HX5 + MAX5: 1.25 TB** (using 32 GB DIMMs).
I/O expansion slots	Single HX5: One CIOv connector and one CFFh connector. Single HX5 + MAX5: One CIOv connector and one CFFh connector. Two nodes: Two CIOv connectors and two CFFh connectors.
Disk bays (total/hot-swap)	Bays require optional SSD Expansion Card with integrated RAID. Single HX5: Two non-hot-swap 1.8-inch bays supporting solid-state drives. Double HX5: **Four non-hot-swap 1.8-inch bays** supporting solid-state drives.
Maximum internal storage	Single HX5: Up to 400 GB of solid-state storage (with 200 GB SSDs). Double HX5: **Up to 800 GB of solid-state storage** (with 200 GB SSDs).
Network interface	**Broadcom 5709S** onboard NIC with dual Gigabit Ethernet ports with TOE. Some models: Emulex Virtual Fabric 10 GB Expansion Card (CFFh).
RAID support	RAID 0 or RAID 1 integrated on optional SSD Expansion Card; LSI 1064E SAS controller; SSD Expansion Card installed in a dedicated slot.
Hypervisor	Embedded hypervisor supported by using an internal USB port.
Video	Matrox G200e integrated in IMM on a system board; 16-MB video memory.
Systems management	**Integrated management module** systems management processor.
Security	Trusted Platform Module, power-on password, administrator password, unattended boot, selectable boot, and unattended start mode.
OS support	Microsoft Windows, Red Hat Linux, SUSE Linux, and VMware.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

Two 1.8-inch SSD drives (under carrier)
CIOv and CFFh expansion slots
Memory DIMMs
Intel Xeon processors
Memory buffers
QPI wrap card scalability connector
Information panel LEDs

HX5 2-socket (single-node)   HX5 4-socket (two-node)   HX5 2-socket with MAX5

Popular and system-unique options (see the model table for processor options):

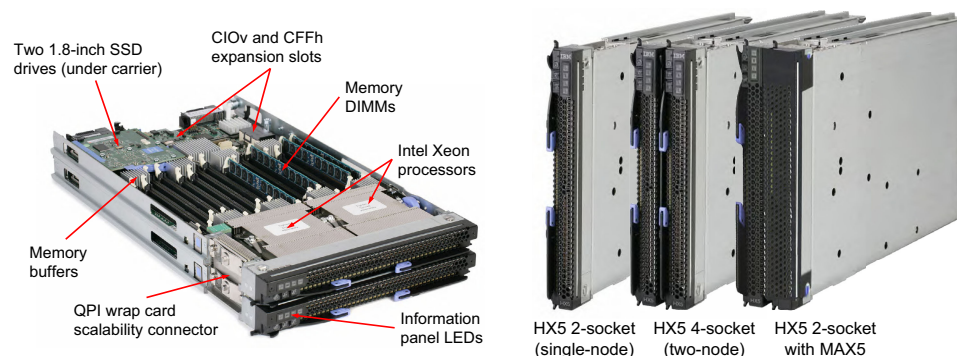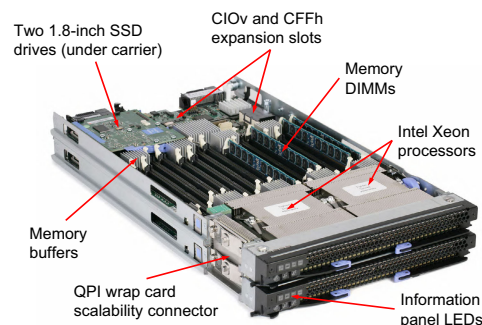| Part	Description
46M6973	IBM MAX5 for BladeCenter
88Y6128	IBM MAX5 V2 for BladeCenter
59Y5877	IBM HX5 MAX5 1-node Scalability Kit
59Y5889	IBM HX5 1-Node Speed Burst Card
46M6975	IBM HX5 2-Node Scalability Kit
46C0564	4 GB (1x4 GB, 2Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1333
46C0570	8 GB (1x8 GB, 4Rx8, 1.35V) PC3-8500 CL7 ECC DDR3 1066
46C0599	16 GB (1x16 GB, 4Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1066
46M6908	SSD Expansion Card for IBM BladeCenter HX5
43W7746	IBM 200 GB SATA 1.8'' MLC SSD
41Y8296	IBM USB Memory Key for VMware ESXi 4.1 Update 1
46M6730	IBM BladeCenter PCI Express Gen 2 Expansion Blade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HX5*:
http://www.redbooks.ibm.com/abstracts/tips0824.html?Open

IBM BladeCenter HX5 (7873) zBX models

Model[1]	Processor (2 maximum)	MAX5 or scale to two nodes	Standard memory	Networking	I/O slots avail / max	Storage	Drive bays	Announced
Workload optimized models for IBM zEnterprise BladeCenter Extension (zBX)								
7873-AJx	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	4x 16GB	2x 1Gb + 2x 10Gb VFA + 2x 8Gb FC[a]	0 / 2	2x S3700 200 GB SSD[b]	2 / 2	Mar 2014
7873-AKx	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	8x 16GB	2x 1Gb + 2x 10Gb VFA + 2x 8Gb FC[a]	0 / 2	2x S3700 200 GB SSD[b]	2 / 2	Mar 2014
7873-ALx	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	12x 16GB	2x 1Gb + 2x 10Gb VFA + 2x 8Gb FC[a]	0 / 2	2x S3700 200 GB SSD[b]	2 / 2	Mar 2014
7873-AMx	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	16x 16GB	2x 1Gb + 2x 10Gb VFA + 2x 8Gb FC[a]	0 / 2	2x S3700 200 GB SSD[b]	2 / 2	Mar 2014

a. Models 7873-AJx, AKx, ALx, AMx include a Broadcom 2-port 10Gb Virtual Fabric Adapter and a QLogic 8 GB Fibre Channel Expansion Card (CIOv).
b. Models 7873-AJx, AKx, ALx, AMx include two S3700 200GB SATA 1.8" MLC Enterprise SSD plus the SSD Expansion Card for IBM BladeCenter HX5

Components	Specification
Form factor	30 mm blade (single-wide).
Chassis support	BladeCenter H, models IBM 2458-002, 2458-003 only
Scalability	Not suppported
Processor type	**Intel Xeon E7-2800**, 8 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	Two processors.
Cache (maximum)	**24 MB** per processor.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	Single HX5: 16 DIMM sockets.
Memory (maximum)	Single HX5: 512 GB (using 32 GB DIMMs).
I/O expansion slots	One CIOv connector and one CFFh connector with adapters installed as standard.
Disk bays (total/hot-swap)	Two non-hot-swap 1.8-inch bays supporting solid-state drives. SSD Expansion Card with integrated RAID inluded in zBX models
Maximum internal storage	zBX models cannot be upgraded beyond standard storage
Network interface	**Broadcom 5709S** onboard NIC with dual Gigabit Ethernet ports with TOE. zBX models: Emulex Virtual Fabric 10 GB Expansion Card (CFFh) or Broadcom 2-port 10Gb Virtual Fabric Adapter
RAID support	RAID 0 or RAID 1 integrated on SSD Expansion Card; LSI 1064E SAS controller; SSD Expansion Card installed in dedicated slot.
Hypervisor	Embedded hypervisor supported by using an internal USB port.
Video	Matrox G200e integrated in IMM on a system board; 16-MB video memory.
Systems management	**Integrated management module** systems management processor.
Security	Trusted Platform Module, power-on password, administrator password, unattended boot, selectable boot, and unattended start mode.
OS support	Microsoft Windows, Red Hat Linux, SUSE Linux, and VMware.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HX5*:
http://www.redbooks.ibm.com/abstracts/tips0824.html?Open

IBM BladeCenter HX5 (7873) two-node models

Model[1]	Processor (2 maximum)	MAX5	Two-node scalability kit[a]	Standard memory	Networking[b]	I/O slots	Storage	Drive bays	Announced
Models for two-node configurations									
7873-BHx	1x Xeon E7-4807 6C 1.86 GHz 18 MB 800 MHz 95 W	Not supported	Standard	2x 4 GB	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-BAx	1x Xeon E7-4807 6C 1.86 GHz 18 MB 800 MHz 95 W	Not supported	Connect to model BHx	2x 4 GB	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-BJx	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Not supported	Standard	2x 4 GB	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-BBx	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Not supported	Connect to model BJx	2x 4 GB	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-CHx	1x Xeon E7-8837 8C 2.67 GHz 24 MB 1066 MHz 130 W	Not supported	Standard	2x 4 GB[c]	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-CAx	1x Xeon E7-8837 8C 2.67 GHz 24 MB 1066 MHz 130 W	Not supported	Connect to model CHx	2x 4 GB[c]	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-DHx	1x Xeon E7-8867L 10C 2.13 GHz 30 MB 1066 MHz 105 W	Not supported	Standard	2x 4 GB	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-DAx	1x Xeon E7-8867L 10C 2.13 GHz 30 MB 1066 MHz 105 W	Not supported	Connect to model DHx	2x 4 GB	2x 1 Gb	CIOv, CFFh	Optional	0 / 2	Apr 2011
7873-FEx	1x Xeon E7-4870 10C 2.40 GHz 30 MB 1066 MHz 130 W	Not supported	Standard	2x 4 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Mar 2013
7873-FNx	1x Xeon E7-4870 10C 2.40 GHz 30 MB 1066 MHz 130 W	Not supported	Connect to model FEx	2x 4 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Mar 2013

a. These models have the IBM HX5 2-Node Scalability Kit standard, 46M6975, and connect to the partner model as indicated.
b. Some models, as indicated with (E2), include the Emulex 10GbE Virtual Fabric Adapter Advanced II adapter.
c. In this model, memory operates at 978 MHz, lower than that supported by the processor.

Components	Specification
Form factor	Single HX5 (single node): 30 mm blade (single-wide). Double HX5 (double node): 60 mm blade (double-wide). Single HX5 + MAX5 memory expansion unit: 60 mm blade (double-wide).
Chassis support	BladeCenter H, BladeCenter S, BladeCenter HT AC; BC-HT DC support by using SPORE. Support is limited for 130 W processors and in BladeCenter S. For details, see the *IBM BladeCenter HX5 Product Guide*.
Scalability	**The HX5 can scale as follows**: ▶ Single HX5: Two processors, 16 DIMM sockets ▶ Double HX5: Four processors, 32 DIMM sockets Scalability provided using a QPI wrap connector on the edge of the server; used to connect second HX5 to base HX5 server.
Processor type	Machine type 7873: Intel Xeon E7-8800, E7-4800, and E7-2800, up to 10 cores.
Number of processors	Single HX5: One or two processors. Double HX5: **Four processors**.
Cache (maximum)	**Up to 30 MB** per processor.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	Single HX5: 16 DIMM sockets. **Double HX5: 32 DIMM sockets total**.
Memory (maximum)	Single HX5: 512 GB (using 32 GB DIMMs). **Two HX5: 1 TB (using 32 GB DIMMs).**
I/O expansion slots	Single HX5: One CIOv connector and one CFFh connector. Two nodes: Two CIOv connectors and two CFFh connectors.
Disk bays (total/hot-swap)	Bays require optional SSD Expansion Card with integrated RAID. Single HX5: Two non-hot-swap 1.8-inch bays supporting solid-state drives. Double HX5: **Four non-hot-swap 1.8-inch bays** supporting solid-state drives.
Maximum internal storage	Single HX5: Up to 400 GB of solid-state storage (with 200 GB SSDs). Double HX5: **Up to 800 GB of solid-state storage** (with 200 GB SSDs).
Network interface	**Broadcom 5709S** onboard NIC with dual Gigabit Ethernet ports with TOE. Some models: Emulex Virtual Fabric 10 GB Expansion Card (CFFh).
RAID support	RAID 0 or RAID 1 integrated on optional SSD Expansion Card; LSI 1064E SAS controller; SSD Expansion Card installed in dedicated slot.
Hypervisor	Embedded hypervisor supported by using an internal USB port.
Video	Matrox G200e integrated in IMM on a system board; 16-MB video memory.
Systems management	**Integrated management module** systems management processor.
Security	Trusted Platform Module, Power-on password, administrator password, unattended boot, selectable boot, and unattended start mode.
OS support	Microsoft Windows, Red Hat Linux, SUSE Linux, and VMware.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

HX5 2-socket (single-node)   HX5 4-socket (two-node)   HX5 2-socket with MAX5

Popular and system-unique options:

Part	Description
46M6973	IBM MAX5 for BladeCenter
88Y6128	IBM MAX5 V2 for BladeCenter
59Y5877	IBM HX5 MAX5 1-node Scalability Kit
59Y5889	IBM HX5 1-Node Speed Burst Card
46M6975	IBM HX5 2-Node Scalability Kit
46C0564	4 GB (1x4 GB, 2Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1333
46C0570	8 GB (1x8 GB, 4Rx8, 1.35V) PC3-8500 CL7 ECC DDR3 1066
46C0599	16 GB (1x16 GB, 4Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1066
46M6908	SSD Expansion Card for IBM BladeCenter HX5
43W7746	IBM 200 GB SATA 1.8'' MLC SSD
41Y8296	IBM USB Memory Key for VMware ESXi 4.1 Update 1
46M6730	IBM BladeCenter PCI Express Gen 2 Expansion Blade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HX5*:
http://www.redbooks.ibm.com/abstracts/tips0824.html?Open

IBM Flex System

This section summarizes all of the IBM Flex System servers that are currently available. One or more pages are devoted to each server, depending on the number and type of models that are available:

► Standard models
► Express models
► Workload optimized models

Express models are specially configured to make it easier for customers to order complete systems. Express models typically add memory, disk drives, RAID adapters, network adapter and other components over what the standard models normally include.
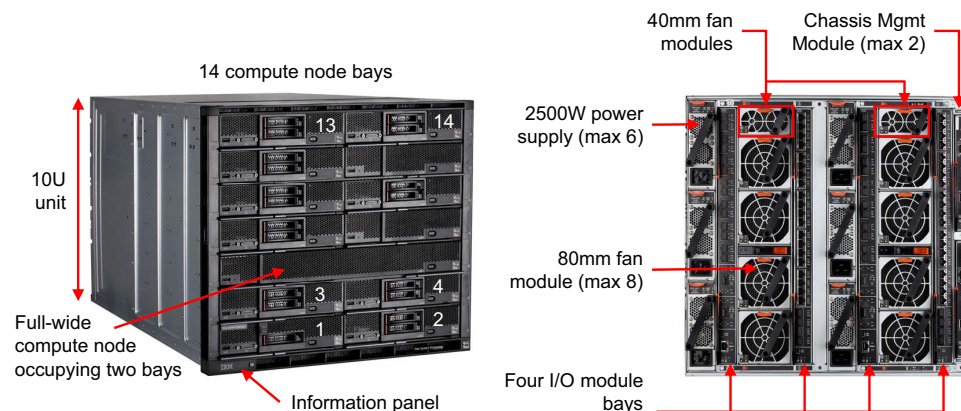
Workload optimized models are also carefully configured to meet the requirements of a particular workload such as database or virtualization. Similar to Express models, these workload optimized models contain additional components such as memory, RAID and network adapters, and storage.

IBM Flex System Enterprise Chassis

Model[1]	Compute node bays	Chassis Management Module (2 max)	Flex System Manager (1 max)	I/O module bays	Power supplies (6 max)	40mm fan modules (2 max)	80mm fan modules[a] (8 max = 4 pairs)	Console breakout cable	Announced
8721-A1x	14	1	Optional	4	2x 2500W AC	2	4 (2 pairs)	1	Apr 2012
8721-HC1	14	1	Optional	4	None	2	None	Optional	Apr 2012
8721-K1G[2]	14	1	Optional	4	2x 2500W AC	2	4 (2 pairs)	1	Oct 2012
8271-LRx	14	1	Optional	4	2x 2100W AC	2	4 (2 pairs)	1	Aug 2013
8721-DCx	14	1	Optional	4	2x 2500W -48V DC	2	4 (2 pairs)	1	Jul 2014

a. One 80mm fan module part number or feature code contains two fan modules (System x feature code A0UA or part number 43W9078)

Components	Specification
Model	System x ordering sales channel: 8721-A1x Power Systems sales channel: 7893-92X
Form factor	10U rack-mounted unit.
Maximum number of compute nodes supported	14 half-wide (single bay), seven full-wide (two bays), or three double-height full-wide (four bays). Mixing is supported.
Systems supported	All IBM Flex System compute nodes
Chassis per 42U rack	Four chassis per rack
Nodes per 42U rack	56 half-wide, or 28 full-wide.
Management	One or two Chassis Management Modules (CMMs), for basic chassis management. Two CMMs form a redundant pair; One CMM standard in 8721-A1x. The CMM interfaces with the integrated management module (IMM) or Flexible Service Processor (FSP) integrated in each compute node in the chassis. Optional IBM Flex System Manager management appliance for comprehensive management, including virtualization, networking, and storage management.
I/O architecture	Up to eight lanes of I/O to an I/O adapter card, with each lane capable of up to 16 Gbps bandwidth. Up to 16 lanes of I/O to a half-wide node with two adapters. A wide variety of networking solutions, including Ethernet, Fibre Channel, Fibre Channel over Ethernet (FCoE), and InfiniBand.
Power supplies	Up to six power supplies that can provide N+N or N+1 redundant power. Power supplies are 80 PLUS Platinum certified and provide over 94% efficiency at 50% load and 20% load. Each power supply contains two independently powered 40 mm cooling fan modules. Power supply options are 2500W AC, 2100W AC, 2500W HVDC and 2500W -48V DC power supplies. All installed power supplies must be identical.
Fan modules	Ten fan modules (eight 80 mm (3.14 in) fan modules and two 40 mm (1.57 in) fan modules); Four 80 mm and two 40 mm fan modules standard in model 8721-A1x, LRx and K1G.
Dimensions	► Height: 440 mm (17.3 in) ► Width: 447 mm (17.6 in) ► Depth: 800 mm (31.5 in), measured from front bezel to rear of chassis; 840 mm (33.1 in), measured from node latch handle to the power supply handle.
Weight	Minimum configuration: 96.62 kg (213 lb) Maximum configuration: 220.45 kg (486 lb)
Declared sound level	7.5 bels
Temperature	Operating air temperature 5°C to 40°C
Electrical power	AC Input power: 200 - 240 V ac (nominal), 50 or 60 Hz HVDC DC Input power: 240 - 380 V dc (nominal) -48 V DC Input power: -48V to -60 V dc (nominal) Minimum configuration: 0.51 kVA (two power supplies) Maximum configuration: 13 kVA (six power supplies)
Power consumption	12,900 watts maximum

14 compute node bays

10U unit

Full-wide compute node occupying two bays

Information panel

40mm fan modules

Chassis Mgmt Module (max 2)

2500W power supply (max 6)

80mm fan module (max 8)

Four I/O module bays

Popular and system-unique options: (see model table for processor options)

Part	Description
95Y3309	IBM Flex System Fabric EN4093R 10Gb Scalable Switch
00D5823	IBM Flex System Fabric CN4093 10Gb Converged Scalable Switch
88Y6043	IBM Flex System EN4091 10Gb Ethernet Pass-thru
49Y4294	IBM Flex System EN2092 1Gb Ethernet Scalable Switch
88Y6374	IBM Flex System FC5022 16Gb SAN Scalable Switch
90Y9356	IBM Flex System FC5022 24-port 16Gb ESB SAN Scalable Switch
69Y1930	IBM Flex System FC3171 8Gb SAN Switch
69Y1934	IBM Flex System FC3171 8Gb SAN Pass-thru
90Y3450	IBM Flex System IB6131 InfiniBand Switch (QDR/FDR)
43W9049	IBM Flex System Enterprise Chassis 2500W Power Module
47C7633	IBM Flex System Enterprise Chassis 2100W Power Module
00AM765	IBM Flex System Enterprise Chassis HVDC 2500W Power Module
00FJ635	IBM Flex System Enterprise Chassis -48V DC 2500W Power Module
43W9078	IBM Flex System Enterprise Chassis 80mm Fan Module Pair (2 fan modules)

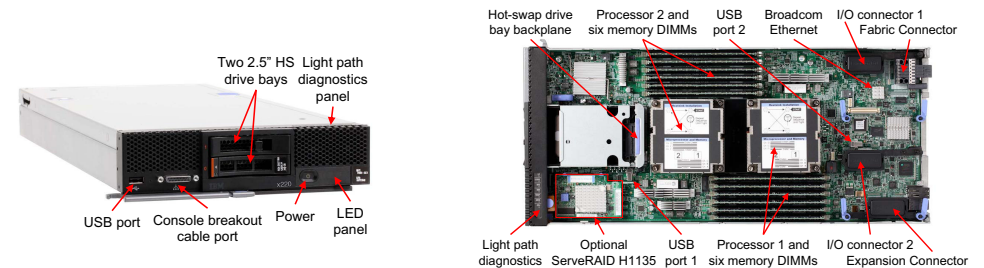For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System Enterprise Chassis: http://www.redbooks.ibm.com/abstracts/tips0863.html?Open

IBM Flex System x220 Compute Node (Page 1 of 2)

Model[1] Intel Processor E5-2400: 2 maximum; Pentium 1400: 1 maximum	Second CPU	Memory	Disk adapter	Disk bays[a]	Disks	Embedded 1 GbE[b]	I/O slots (used/max)	Announced
7906-A2x 1x Intel Pentium 1403 2C 2.6GHz 5MB 1066MHz 80W	Not supported	1x 4 GB UDIMM (1066 MHz)[c]	ServeRAID C105	2x 2.5" hot-swap	Open	Standard	1 / 2[b]	May 2012
7906-B2x 1x Intel Xeon E5-2430L 6C 2.0GHz 15MB 1333MHz 60W	90Y4805	1x 4 GB UDIMM 1333 MHz	ServeRAID C105	2x 2.5" hot-swap	Open	Standard	1 / 2[b]	May 2012
7906-C2x 1x Intel Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	90Y4801	1x 4 GB RDIMM (1066 MHz)[c]	ServeRAID C105	2x 2.5" hot-swap	Open	Standard	1 / 2[b]	May 2012
7906-D2x 1x Intel Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	90Y4799	1x 4 GB RDIMM 1333 MHz	ServeRAID C105	2x 2.5" hot-swap	Open	Standard	1 / 2[b]	May 2012
7906-DBx[d] 2x Intel Xeon E5-2420 6C 1.9 GHz 15 MB 1333 MHz 95W	Standard	2x 4GB RDIMM (1333 MHz)	ServeRAID C105	14x 2.5" hot-swap[d]	Open	Standard	1 / 2[b]	Feb 2013
7906-F2x 1x Intel Xeon E5-2418L 4C 2.0GHz 10MB 1333MHz 50W	00D9528	1x 4GB RDIMM 1333 MHz	ServeRAID C105	2x 2.5" hot-swap	Open	Standard	1 / 2[b]	Aug 2012

a. The 2.5-inch drive bays can be replaced and expanded with an SSD kit and ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)
b. These models include an Embedded 1 Gb Ethernet controller. Connections are routed to the chassis midplane using a Fabric Connector. Precludes the use of I/O connector 1 (except the ServeRAID M5115)
c. For A2x and C2x, the memory operates at most 1066 MHz, the memory speed of the processor; for J2x and L2x, memory operates at most 1333 MHz to match the installed DIMM, rather than 1600 MHz
d. Model DBx is optimized as a Network Attached Storage (NAS) offering and includes the IBM Flex System Storage Expansion Node (68Y8588) with 12x 2.5-inch hot-swap drive bays as standard

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis.
Processor	Up to two **Intel Xeon Processor E5-2400** product family CPUs with eight-core (up to 2.3 GHz) or six-core (up to 2.4 GHz) or quad-core (up to 2.2 GHz), one QPI link running at 8.0 GT/s, L3 cache up to 20 MB, and memory speeds up to 1600 MHz. Also supports one Intel Pentium Processor 1400 series.
Chipset	Intel C600 series.
Memory	Up to **12 DIMM sockets** (6 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs, UDIMMs and LRDIMMs supported. 1.5 V and **low-voltage 1.35 V** DIMMs supported. Support for up to 1600 MHz memory speed depending on the processor. **Three memory channels** per processor (two DIMMs per channel). Supports two DIMMs per channel operating at 1600 MHz (2 DPC @ 1600MHz) with single and dual rank RDIMMs.
Memory maximums	With LRDIMMs: **Up to 384 GB with 12x 32 GB LRDIMMs** and two E5-2400 CPUs. With RDIMMs: Up to 192 GB with 12x 16 GB RDIMMs and two E5-2400 CPUs. With UDIMMs: Up to 48 GB with 12x 4 GB UDIMMs and two E5-2400 CPUs.
Memory protection	ECC, Chipkill, optional memory mirroring and memory rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA, and SSD drives. Optional support for an additional four 1.8" SSDs mounted internally. Onboard ServeRAID C105 supports SATA drives only.
Maximum internal storage	With two 2.5" hot-swap drives: Up to 2 TB with 1 TB 2.5" NL SATA HDDs, or up to 1.8 TB with 900 GB 2.5" SAS HDDs and H1135 controller. Intermix of SAS and SATA HDDs and SSDs is supported. With 1.8" SSDs and ServeRAID M5115 RAID adapter: Up to an additional 3.6 TB with four 800 GB 1.8" SSDs. Up to 12x 2.5-inch drive bays with the optional Storage Expansion Node.
RAID support - three options	Software RAID 0, 1 with integrated 3 Gbps **ServeRAID C105** controller; supports SATA drives only. Non-RAID not supported. Optional **ServeRAID H1135 adapter** with LSI SAS2004 controller, supports SAS/SATA drives with hardware-based RAID 0 and 1. H1135 adapter installed in dedicated PCIe connector. Optional **ServeRAID M5115** adapter with RAID 0, 1, 10, 5, 50 support and 1 GB cache. M5115 installs in I/O adapter slot 1. Can be installed in all models including those with embedded 1 GbE with Fabric connector. **Supports up to four 1.8" SSDs** with expansion kits. Optional M5115 flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	Some models (see table): Embedded dual-port **Broadcom BCM5718** Ethernet Controller, supports WoL, SOL, IPv6. (TOE *not* supported). Routes to chassis bays 1 and 2 via a Fabric Connector to the midplane. The Fabric Connector precludes the use of adapter slot 1 with the exception of the ServeRAID M5115. Remaining models: No network interface standard; optional 1GbE or 10GbE.
PCI Expansion slots	Two connectors for I/O adapters; each connector with PCIe 3.0 x8+x4 host interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters. Additional dedicated PCI Express 2.0 x4 interface for ServeRAID H1135 only.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Ports	USB ports: One external, two internal for **embedded hypervisor**. Console breakout cable port on the front of the server providing **local KVM and serial ports** (cable standard with chassis; additional cables optional).

Components	Specification
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, remote presence. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESXi 4.1, 5.0 and 5.1.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4 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 OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 6.4 kg (14.11 lb).

Hot-swap drive bay backplane · Processor 2 and six memory DIMMs · USB port 2 · Broadcom Ethernet · I/O connector 1 Fabric Connector

Two 2.5" HS drive bays · Light path diagnostics panel

USB port · Console breakout cable port · Power · LED panel

Light path diagnostics · Optional ServeRAID H1135 · USB port 1 · Processor 1 and six memory DIMMs · I/O connector 2 Expansion Connector

Popular and system-unique options: (see model table for processor options)

Part	Description
90Y3109	8GB (1x8GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y1400	16GB (1x16GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM
81Y9730	IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD
90Y4750	ServeRAID H1135 Controller for IBM Flex System and BladeCenter
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
90Y3554	IBM Flex System CN4054 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
68Y8588	IBM Flex System Storage Expansion Node

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x220: http://www.redbooks.ibm.com/abstracts/tips0885.html?Open

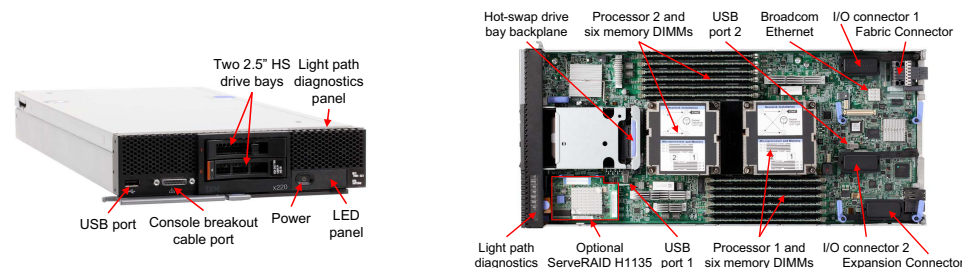# IBM Flex System x220 Compute Node (Page 2 of 2)

Model[1]	Intel Processor E5-2400: 2 maximum; Pentium 1400: 1 maximum	Second CPU	Memory	Disk adapter	Disk bays[a]	Disks	Embedded 1 GbE[b]	I/O slots (used/max)	Announced
7906-G2x	1x Intel Xeon E5-2430 6C 2.2GHz 15MB 1333MHz 95W	90Y4797	1x 4 GB RDIMM 1333 MHz	ServeRAID C105	2x 2.5" hot-swap	Open	No	0 / 2	May 2012
7906-G4x	1x Intel Xeon E5-2430 6C 2.2GHz 15MB 1333MHz 95W	90Y4797	1x 4 GB RDIMM 1333 MHz	ServeRAID C105	2x 2.5" hot-swap	Open	Standard	1 / 2[b]	May 2012
7906-H2x	1x Intel Xeon E5-2440 6C 2.4GHz 15MB 1333MHz 95W	90Y4796	1x 4 GB RDIMM 1333 MHz	ServeRAID C105	2x 2.5" hot-swap	Open	Standard	1 / 2[b]	May 2012
7906-J2x	1x Intel Xeon E5-2450 8C 2.1GHz 20MB 1600MHz 95W	90Y4795	1x 4 GB RDIMM 1333 MHz[c]	ServeRAID C105	2x 2.5" hot-swap	Open	No	0 / 2	May 2012
7906-L2x	1x Intel Xeon E5-2470 8C 2.3GHz 20MB 1600MHz 95W	90Y4793	1x 4 GB RDIMM 1333 MHz[c]	ServeRAID C105	2x 2.5" hot-swap	Open	No	0 / 2	May 2012

a. The 2.5-inch drive bays can be replaced and expanded with an SSD kit and ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)
b. These models include an Embedded 1 Gb Ethernet controller. Connections are routed to the chassis midplane using a Fabric Connector. Precludes the use of I/O connector 1 (except the ServeRAID M5115)

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis.
Processor	Up to two **Intel Xeon Processor E5-2400** product family CPUs with eight-core (up to 2.3 GHz) or six-core (up to 2.4 GHz) or quad-core (up to 2.2 GHz), one QPI link running at 8.0 GT/s, L3 cache up to 20 MB, and memory speeds up to 1600 MHz. Also supports one Intel Pentium Processor 1400 series.
Chipset	Intel C600 series.
Memory	Up to **12 DIMM sockets** (6 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs, UDIMMs and LRDIMMs supported. 1.5 V and **low-voltage 1.35 V** DIMMs supported. Support for up to 1600 MHz memory speed depending on the processor. **Three memory channels** per processor (two DIMMs per channel). Supports two DIMMs per channel operating at 1600 MHz (2 DPC @ 1600MHz) with single and dual rank RDIMMs.
Memory maximums	With LRDIMMs: **Up to 384 GB with 12x 32 GB LRDIMMs** and two E5-2400 CPUs With RDIMMs: Up to 192 GB with 12x 16 GB RDIMMs and two E5-2400 CPUs. With UDIMMs: Up to 48 GB with 12x 4 GB UDIMMs and two E5-2400 CPUs.
Memory protection	ECC, Chipkill, optional memory mirroring and memory rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA, and SSD drives. Optional support for additional four 1.8" SSDs mounted internally. Onboard ServeRAID C105 supports SATA drives only.
Maximum internal storage	With two 2.5" hot-swap drives: Up to 2 TB with 1 TB 2.5" NL SATA HDDs, or up to 1.8 TB with 900 GB 2.5" SAS HDDs and H1135 controller. Intermix of SAS and SATA HDDs and SSDs is supported. With 1.8" SSDs and ServeRAID M5115 RAID adapter: Up to an additional 3.6 TB with four 800 GB 1.8" SSDs. Up to 12x 2.5-inch drive bays with the optional Storage Expansion Node.
RAID support - three options	Software RAID 0, 1 with integrated 3 Gbps **ServeRAID C105** controller; supports SATA drives only. Non-RAID not supported. Optional **ServeRAID H1135 adapter** with LSI SAS2004 controller, supports SAS/SATA drives with hardware-based RAID 0 and 1. H1135 adapter installed in dedicated PCIe connector. Optional **ServeRAID M5115** adapter with RAID 0, 1, 10, 5, 50 support and 1 GB cache. M5115 installs in I/O adapter slot 1. Can be installed in all models including those with embedded 1 GbE with Fabric connector. **Supports up to four 1.8" SSDs** with expansion kits. Optional M5115 flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	Some models (see table): Embedded dual-port **Broadcom BCM5718** Ethernet Controller, supports WoL, SOL, IPv6. (TOE *not* supported). Routes to chassis bays 1 and 2 via a Fabric Connector to the midplane. The Fabric Connector precludes the use of adapter slot 1 with the exception of the ServeRAID M5115. Remaining models: No network interface standard; optional 1GbE or 10GbE.
PCI Expansion slots	Two connectors for I/O adapters; each connector with PCIe 3.0 x8+x4 host interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters. Additional dedicated PCI Express 2.0 x4 interface for ServeRAID H1135 only.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Ports	USB ports: One external, two internal for **embedded hypervisor**. Console breakout cable port on the front of the server providing **local KVM and serial ports** (cable standard with chassis; additional cables optional).

Components	Specification
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, remote presence. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESXi 4.1, 5.0 and 5.1.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4 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 OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 6.4 kg (14.11 lb).

Popular and system-unique options: (see model table for processor options)

Part	Description
90Y3109	8GB (1x8GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y1400	16GB (1x16GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM
81Y9730	IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF HS HDD
90Y4750	ServeRAID H1135 Controller for IBM Flex System and BladeCenter
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
90Y3554	IBM Flex System CN4054 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
68Y8588	IBM Flex System Storage Expansion Node

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x220: http://www.redbooks.ibm.com/abstracts/tips0885.html?Open

IBM Flex System x222 Compute Node (dual server)

Model[1]	Intel Xeon Processor E5-2400 (1 standard, 2 maximum on each independent server, 4 total)	Additional CPUs	Memory (1 DIMM standard, 12 max per server, 24 total)	Disk adapter (1 per server)	Disk bays (1 per server)	Disks	Networking (2 per server)	I/O slots (used/max)	Announced
7916-A2x	2x Intel Xeon E5-2418L 4C 2.0GHz 10MB 1333MHz 50W	00D1269	2x 8 GB 2Rx4 (1333 MHz)[a]	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-B2x	2x Intel Xeon E5-2430L 6C 2.0GHz 15MB 1333MHz 60W	00D1268	2x 8 GB 2Rx4 (1333 MHz)[a]	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-C2x	2x Intel Xeon E5-2450L 8C 1.8GHz 20MB 1600 MHz 70W	00D1267	2x 8 GB 2Rx4 1600 MHz	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-D2x	2x Intel Xeon E5-2403 4C 1.8GHz 1066MHz 80W	00D1266	2x 8 GB 2Rx4 (1066 MHz)[a]	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-F2x	2x Intel Xeon E5-2407 4C 2.2GHz 10MB 1066MHz 80W	00D1265	2x 8 GB 2Rx4 (1066 MHz)[a]	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-G2x	2x Intel Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	00D1264	2x 8 GB 2Rx4 (1333 MHz)[a]	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-H2x	2x Intel Xeon E5-2430 6C 2.2GHz 15MB 1333MHz 95W	00D1263	2x 8 GB 2Rx4 (1333 MHz)[a]	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-H6x	2x Intel Xeon E5-2430 6C 2.2GHz 15MB 1333MHz 95W	00D1263	2x 8 GB 2Rx4 (1333 MHz)[a]	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-J2x	2x Intel Xeon E5-2440 6C 2.4GHz 15MB 1333MHz 95W	00D1262	2x 8 GB 2Rx4 (1333 MHz)[a]	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-M2x	2x Intel Xeon E5-2450 8C 2.1GHz 20MB 1600MHz 95W	00D1261	2x 8 GB 2Rx4 1600 MHz	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013
7916-N2x	2x Intel Xeon E5-2470 8C 2.3GHz 20MB 1600MHz 95W	00D1260	2x 8 GB 2Rx4 1600 MHz	SATA (non-RAID)	2x 2.5" SS	Open	4x 10 GbE	0 / 1	Aug 2013

a. The 1600 MHz memory DIMMs standard in these models operate at most 1333 MHz or 1066 MHz as indicated, matching the memory speed of the processor

Components	Specification
Form factor	Standard Flex System form factor with **two independent servers**
Chassis support	IBM Flex System Enterprise Chassis.
Processor	Each of two independent servers: One **Intel Xeon Processor E5-2400**, two maximum, with eight-core (up to 2.3 GHz) or six-core (up to 2.4 GHz) or quad-core (up to 2.2 GHz), one QPI link running at 8.0 GT/s, L3 cache up to 20 MB, and memory speeds up to 1600 MHz. Cannot join the two servers to form a single 4-socket system image.
Chipset	Intel C600 series.
Memory	Each server: Up to **12 DIMM sockets** (6 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs and LRDIMMs supported. 1.5 V and **low-voltage 1.35 V** DIMMs supported. Support for up to 1600 MHz memory speed depending on the processor. **Three memory channels** per processor (two DIMMs per channel). Supports two DIMMs per channel operating at 1600 MHz (2 DPC @ 1600MHz) with single and dual rank RDIMMs.
Memory maximums	Each server: With LRDIMMs: **Up to 384 GB with 12x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 192 GB with 12x 16 GB RDIMMs and two processors
Memory protection	ECC, Chipkill, optional memory mirroring and memory rank sparing.
Disk drive bays	Each server: One 2.5" simple-swap SATA drive bay supporting SATA, and SSD drives. Optional SSD mounting kit to convert a 2.5" SS bay into two 1.8" hot-swap SSD bays.
Maximum internal storage	Each server: Up to 1 TB using a 2.5" SATA simple-swap drive or up to 512 GB using two 1.8" SSDs and the SSD Expansion Kit.
RAID support	None (use software RAID provided by the installed operating system)
Network interfaces	Each server: Two 10 Gb Ethernet ports with Embedded 10Gb Virtual Fabric Ethernet LAN-on-motherboard (LOM) controller; **Emulex BE3 based**. Routes to chassis bays 1 and 2 via a Fabric Connector to the midplane. **Features on Demand upgrade to FCoE and iSCSI**. Use of both ports on both system boards requires two scalable Ethernet switches in the chassis each upgraded to enable 28 internal switch ports.
PCI Expansion slots	Each server: One connector for an I/O adapter; PCIe 3.0 x16 interface. Supports special *mid-mezzanine* I/O cards shared by both servers. Only one card needed to connect both servers. No communication path between servers. Standard Flex System adapter cards not supported.
Video	Each server: Matrox G200eR2 video core with 16 MB video memory integrated into IMM2. Max resolution is 1600x1200 at 75 Hz with 16 M colors.
Ports	Each server: One external, two internal USB ports for **embedded hypervisor**. Console breakout cable port on the front of the server providing **local KVM and serial ports** (cable standard with chassis; additional cables optional).
Systems management	Each server: UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, remote presence. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Security features	Power-on password, admin password, Trusted Platform Module (TPM) 1.2.

Components	Specification
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESXi 4.1, 5.0 and 5.1.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4- 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 OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 8.2 kg (18 lb).
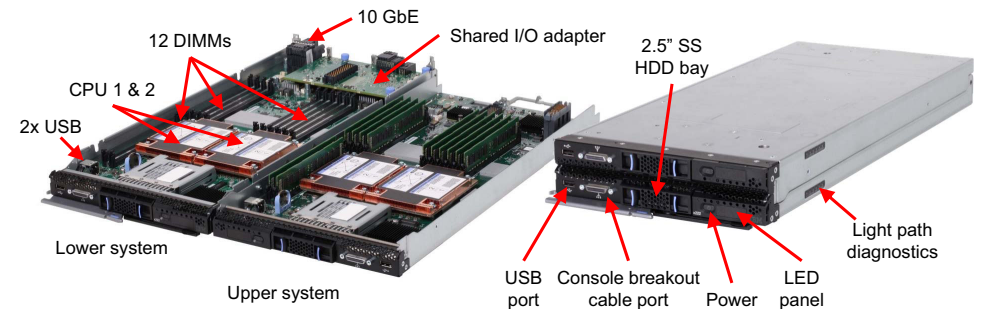
Popular and system-unique options: (see model table for processor options)

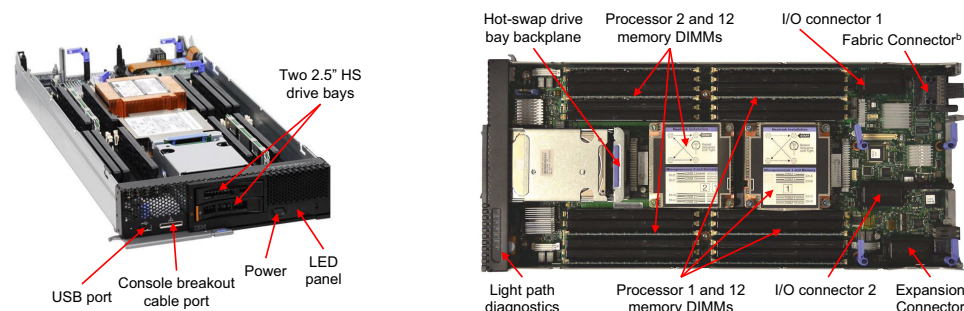| Part	Description
90Y3109	8GB (1x8GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00D4968	16GB (1x16GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
90Y3105	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
90Y8974	IBM 500GB 7.2K 6Gbps SATA 2.5" G2 SS HDD
90Y8979	IBM 1TB 7.2K 6Gbps SATA 2.5" G2 SS HDD
90Y8984	IBM 128GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222
90Y8989	IBM 256GB SATA 2.5" MLC Enterprise Value SSD for Flex System x222
90Y8994	IBM 100GB SATA 2.5" MLC Enterprise SSD for Flex System x222
00W0366	IBM Flex System SSD Expansion Kit
90Y9310	IBM Virtual Fabric Advanced Software Upgrade (LOM)
90Y3486	IBM Flex System IB6132D 2-port FDR InfiniBand Adapter
95Y2379	IBM Flex System FC5024D 4-port 16Gb FC Adapter
81Y5286	Console Breakout Cable

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x222 Compute Node: http://www.redbooks.ibm.com/abstracts/tips1036.html?Open

IBM Flex System x240 Compute Node

Model[1]	Processor (2 maximum)	Second CPU	Memory	RAID controller	Disk bays (used/max)[a]	Disks	10 GbE Embedded Virtual Fabric	I/O slots (used/max)	Announced / Withdrawn
8737-F2x	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	81Y5183	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	Apr 2012

a. The 2.5-inch drive bays can be replaced and expanded with SSD kits and a ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)
b. The x2x models include an Embedded 10Gb Virtual Fabric Ethernet controller; connections are routed using a Fabric Connector. The Fabric Connector precludes the use of an I/O adapter in I/O connector 1.

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis
Processor	Up to two **Intel Xeon Processor E5-2600** product family CPUs with eight-core (up to 2.9 GHz) or six-core (up to 2.9 GHz) or quad-core (up to 3.3 GHz) or dual-core (up to 3.0 GHz). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz memory speed. Up to 20 MB L3 cache.
Chipset	Intel C600 series.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs, UDIMMs and LRDIMMs supported. 1.5V and low-voltage 1.35V DIMMs supported. Support for up to 1600 MHz memory speed depending on the processor. Four memory channels per processor (3 DIMMs per channel).
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 64 GB with 16x 4 GB UDIMMs and two processors
Memory protection	ECC, optional memory mirroring and memory rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA and SSD drives. Optional support for up to eight 1.8" SSDs.
Maximum internal storage	With two 2.5" hot-swap drives: **Up to 2 TB with 1 TB 2.5" NL SAS HDDs**, or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" SATA HDDs, or **up to 3.2 TB with 1.6 TB 2.5" SATA SSDs**. An intermix of SAS and SATA HDDs and SSDs is supported. Alternatively, with 1.8" SSDs and ServeRAID M5115 RAID adapter, **up to 6.4 TB with eight 800 GB 1.8" SSDs**. Additional storage available with an attached Flex System Storage Expansion Node.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller. Optional ServeRAID M5115 RAID controller with RAID 0, 1, 10 5, 50 support and 1GB cache. Supports up to eight 1.8" SSD with expansion kits. Optional flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	x2x models: **Two 10 Gb Ethernet ports** with Embedded 10Gb Virtual Fabric Ethernet LAN-on-motherboard (LOM) controller; **Emulex BE3** based. x1x models: None standard; optional 1Gb or 10Gb Ethernet adapters
PCI Expansion slots	Two I/O connectors for adapters. PCI Express 3.0 x16 interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters.
Ports	USB ports: one external. Two internal for **embedded hypervisor** with optional USB Enablement Kit. Console breakout cable port providing **local KVM and serial ports** (cable standard with chassis; additional cables optional)
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel, Automatic Server Restart. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.1, 5.0, 5.1.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 6.98 kg (15.4 lb)

Hot-swap drive bay backplane — Processor 2 and 12 memory DIMMs — I/O connector 1 — Fabric Connector[b]
Two 2.5" HS drive bays
USB port — Console breakout cable port — Power — LED panel
Light path diagnostics — Processor 1 and 12 memory DIMMs — I/O connector 2 — Expansion Connector

Popular and system-unique options: (see model table for processor options)

Part	Description
90Y3105	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
49Y1563	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3109	8GB (1x8GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y8119	x240 USB Enablement Kit
90Y9310	IBM Flex System Embedded 10Gb Virtual Fabric Upgrade
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
43W7718	IBM 200GB SATA 2.5" MLC HS SSD
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
90Y3554	IBM Flex System CN4054 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
68Y8588	IBM Flex System Storage Expansion Node

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x240:
http://www.redbooks.ibm.com/abstracts/tips0860.html?Open

IBM Flex System x240 Compute Node (E5-2600 v2) (Page 1 of 3)

Model[1]	Processor (2 maximum)	2nd CPU	Memory	RAID	Disk bays (used/max)[a]	Disks	10 GbE	I/O slots	Announced
Models with embedded 10 Gb Virtual Fabric Ethernet									
8737-14x	1x Intel Xeon E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	00Y2851	1x 8 GB (1333 MHz)	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
8737-24x	1x Intel Xeon E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	00Y2852	1x 8 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
8737-B4x	1x Intel Xeon E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	00Y2853	1x 8 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
8737-34x	1x Intel Xeon E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	00Y2854	1x 8 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
8737-44x	1x Intel Xeon E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	00Y2855	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
8737-C4x	1x Intel Xeon E5-2650L v2 10C 1.7GHz 25MB 1600MHz 70W	00Y2865	1x 8 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
8737-54x	1x Intel Xeon E5-2660 v2 10C 2.2GHz 25MB 1866MHz 95W	00Y2856	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
8737-64x	1x Intel Xeon E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	00Y2857	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
8737-74x	1x Intel Xeon E5-2680 v2 10C 2.8GHz 25MB 1866MHz 115W	00Y2858	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
8737-84x	1x Intel Xeon E5-2690 v2 10C 3.0GHz 25MB 1866MHz 130W	00Y2859	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013

a. The 2.5-inch drive bays can be replaced and expanded with SSD kits and a ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)
b. The x4x models include an Embedded 10Gb Virtual Fabric Ethernet controller; connections are routed using a Fabric Connector. The Fabric Connector precludes the use of an I/O adapter in I/O connector 1.

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis
Processor	Up to two Intel Xeon processor **E5-2600 v2 product family** CPUs with 12 cores (up to 2.7 GHz) or ten cores (up to 3.0 GHz) or eight cores (up to 3.3 GHz) or six cores (up to 3.5 GHz) or four cores (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. Up to 1866 MHz memory speed. Up to 30 MB L3 cache.
Chipset	Intel C600 series.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs, UDIMMs and LRDIMMs supported. 1.5V and low-voltage 1.35V DIMMs supported. Support for up to 1600 MHz memory speed depending on the processor. Four memory channels per processor (3 DIMMs per channel).
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 128 GB with 16x 8 GB UDIMMs and two processors
Memory protection	ECC, optional memory mirroring and memory rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA and SSD drives. Optional support for up to eight 1.8" SSDs.
Maximum internal storage	With two 2.5" hot-swap drives: **Up to 2 TB with 1 TB 2.5" NL SAS HDDs**, or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" SATA HDDs, or **up to 3.2 TB with 1.6 TB 2.5" SATA SSDs**. An intermix of SAS and SATA HDDs and SSDs is supported. Alternatively, with 1.8" SSDs and ServeRAID M5115 RAID adapter, **up to 6.4 TB with eight 800 GB 1.8" SSDs**. Additional storage available with an attached Flex System Storage Expansion Node.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller. Optional ServeRAID M5115 RAID controller with RAID 0, 1, 10 5, 50 support and 1GB cache. Supports up to eight 1.8" SSD with expansion kits. Optional flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	*x4x models*: **Two 10 Gb Ethernet ports** with Embedded 10Gb Virtual Fabric Ethernet LAN-on-motherboard (LOM) controller; **Emulex BE3R** based; FCoE/iSCSI support with FoD upgrade. *xMx models*: CN4022 2-port 10Gb Converged Adapter standard; **Broadcom BCM57840** based; FCoE/iSCSI support standard. *x2x models*: None standard; optional 1Gb or 10GbE adapters.
PCI Expansion slots	Two I/O connectors for adapters. PCI Express 3.0 x16 interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters.
Ports	USB ports: one external. Two internal for **embedded hypervisor** with optional USB Enablement Kit. Console breakout cable port providing **local KVM and serial ports** (cable standard with chassis; additional cables optional)
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel, Automatic Server Restart. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.1, 5.0, 5.1.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 6.98 kg (15.4 lb)

Popular and system-unique options: (see model table for processor options)

Part	Description
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y8119	x240 USB Enablement Kit
90Y9310	IBM Flex System Embedded 10Gb Virtual Fabric Upgrade
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
43W7718	IBM 200GB SATA 2.5" MLC HS SSD
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
88Y5920	IBM Flex System CN4022 2-port 10Gb Converged Adapter
00Y3306	IBM Flex System CN4054R 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
68Y8588	IBM Flex System Storage Expansion Node

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x240:
http://www.redbooks.ibm.com/abstracts/tips0860.html?Open

Model[1]	Processor (2 maximum)	2nd CPU	Memory	RAID	Disk bays (used/max)[a]	Disks	10 GbE	I/O slots	Announced
Models with embedded 10 Gb Virtual Fabric Ethernet (continued)									
8737-8Dx	2x Intel Xeon E5-2690 v2 10C 3.0GHz 25MB 1866MHz 130W	00Y2859	16x 16 GB 1866MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open[b]	Embedded 10Gb	1 used / 2 max[c]	Oct 2013
8737-94x	1x Intel Xeon E5-2697 v2 12C 2.7GHz 30MB 1866MHz 130W	00Y2849	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Embedded 10Gb	1 used / 2 max[b]	Oct 2013
Models with IBM Flex System CN4022 2-port 10Gb Converged Adapter									
8737-1Mx	1x Intel Xeon E5-2609 v2 4C 2.5GHz 10MB 1333MHz 80W	00Y2851	1x 8 GB (1333 MHz)	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[d]	Oct 2013
8737-2Mx	1x Intel Xeon E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	00Y2852	1x 8 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[d]	Oct 2013
8737-BMx	1x Intel Xeon E5-2630 v2 6C 2.6GHz 15MB 1600MHz 80W	00Y2853	1x 8 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[d]	Oct 2013
8737-3Mx	1x Intel Xeon E5-2640 v2 8C 2.0GHz 20MB 1600MHz 95W	00Y2854	1x 8 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[d]	Oct 2013
8737-4Mx	1x Intel Xeon E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	00Y2855	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[d]	Oct 2013
8737-CMx	1x Intel Xeon E5-2650L v2 10C 1.7GHz 25MB 1600MHz 70W	00Y2865	1x 8 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[d]	Oct 2013

a. The 2.5-inch drive bays can be replaced and expanded with SSD kits and a ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)
b. Model 8Dx includes 1x IBM Flex System x240 USB Enablement Kit, 1x IBM USB Memory Key for VMWare ESXi 5.1 and 1x IBM Blank USB Memory Key for VMWare ESXi Downloads
c. The x4x models include an Embedded 10Gb Virtual Fabric Ethernet controller; connections are routed using a Fabric Connector. The Fabric Connector precludes the use of an I/O adapter in I/O connector 1.
d. The xMx models include an IBM Flex System CN4022 2-port 10Gb Converged Adapter in slot 1

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis
Processor	Up to two Intel Xeon processor **E5-2600 v2 product family** CPUs with 12 cores (up to 2.7 GHz) or ten cores (up to 3.0 GHz) or eight cores (up to 3.3 GHz) or six cores (up to 3.5 GHz) or four cores (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. Up to 1866 MHz memory speed. Up to 30 MB L3 cache.
Chipset	Intel C600 series.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs, UDIMMs and LRDIMMs supported. 1.5V and low-voltage 1.35V DIMMs supported. Support for up to 1600 MHz memory speed depending on the processor. Four memory channels per processor (3 DIMMs per channel).
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 128 GB with 16x 8 GB UDIMMs and two processors
Memory protection	ECC, optional memory mirroring and memory rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA and SSD drives. Optional support for up to eight 1.8" SSDs.
Maximum internal storage	With two 2.5" hot-swap drives: **Up to 2 TB with 1 TB 2.5" NL SAS HDDs**, or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" SATA HDDs, or **up to 3.2 TB with 1.6 TB 2.5" SATA SSDs**. An intermix of SAS and SATA HDDs and SSDs is supported. Alternatively, with 1.8" SSDs and ServeRAID M5115 RAID adapter, **up to 6.4 TB with eight 800 GB 1.8" SSDs**. Additional storage available on an attached Flex System Storage Expansion Node.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller. Optional ServeRAID M5115 RAID controller with RAID 0, 1, 10 5, 50 support and 1GB cache. Supports up to eight 1.8" SSD with expansion kits. Optional flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	*x4x models*: **Two 10 Gb Ethernet ports** with Embedded 10Gb Virtual Fabric Ethernet LAN-on-motherboard (LOM) controller; **Emulex BE3R** based; FCoE/iSCSI support with FoD upgrade. *xMx models*: CN4022 2-port 10Gb Converged Adapter standard; **Broadcom BCM57840** based; FCoE/iSCSI support standard. *x2x models*: None standard; optional 1Gb or 10GbE adapters.
PCI Expansion slots	Two I/O connectors for adapters. PCI Express 3.0 x16 interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters.
Ports	USB ports: one external. Two internal for **embedded hypervisor** with optional USB Enablement Kit. Console breakout cable port providing **local KVM and serial ports** (cable standard with chassis; additional cables optional)
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel, Automatic Server Restart. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2

Components	Specification
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.1, 5.0, 5.1.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 6.98 kg (15.4 lb)

Hot-swap drive bay backplane — Processor 2 and 12 memory DIMMs — I/O connector 1 — Fabric Connector[b] — Two 2.5" HS drive bays — USB port — Console breakout cable port — Power — LED panel — Light path diagnostics — Processor 1 and 12 memory DIMMs — I/O connector 2 — Expansion Connector

Popular and system-unique options: (see model table for processor options)

Part	Description
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y8119	x240 USB Enablement Kit
90Y9310	IBM Flex System Embedded 10Gb Virtual Fabric Upgrade
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
43W7718	IBM 200GB SATA 2.5" MLC HS SSD
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
00Y3306	IBM Flex System CN4054R 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
68Y8588	IBM Flex System Storage Expansion Node

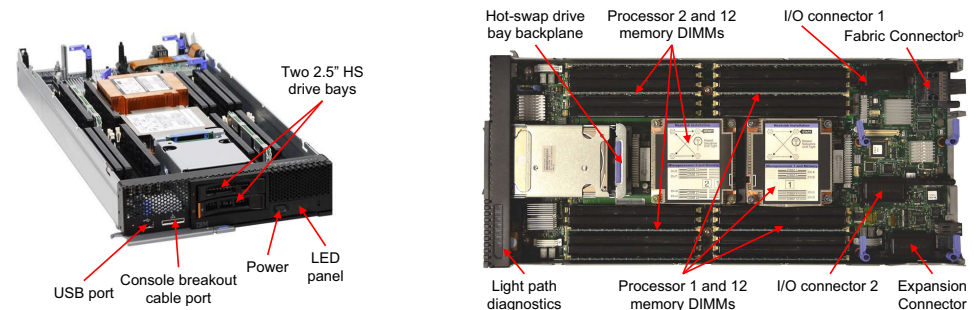For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x240: http://www.redbooks.ibm.com/abstracts/tips0860.html?Open

Model[1]	Processor (2 maximum)	2nd CPU	Memory	RAID	Disk bays (used/max)[a]	Disks	10 GbE	I/O slots	Announced
Models with IBM Flex System CN4022 2-port 10Gb Converged Adapter (continued)									
8737-5Mx	1x Intel Xeon E5-2660 v2 10C 2.2GHz 25MB 1866MHz 95W	00Y2856	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[b]	Oct 2013
8737-6Mx	1x Intel Xeon E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	00Y2857	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[b]	Oct 2013
8737-7Mx	1x Intel Xeon E5-2680 v2 10C 2.8GHz 25MB 1866MHz 115W	00Y2858	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[b]	Oct 2013
8737-8Mx	1x Intel Xeon E5-2690 v2 10C 3.0GHz 25MB 1866MHz 130W	00Y2859	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[b]	Oct 2013
8737-9Mx	1x Intel Xeon E5-2697 v2 12C 2.7GHz 30MB 1866MHz 130W	00Y2849	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	CN4022 Adapter	1 used / 2 max[b]	Oct 2013
Models without networking standard									
8737-22x	1x Intel Xeon E5-2620 v2 6C 2.1GHz 15MB 1600MHz 80W	00Y2852	1x 8 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Optional	0 used / 2 max	Oct 2013
8737-42x	1x Intel Xeon E5-2650 v2 8C 2.6GHz 20MB 1866MHz 95W	00Y2855	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Optional	0 used / 2 max	Oct 2013
8737-62x	1x Intel Xeon E5-2670 v2 10C 2.5GHz 25MB 1866MHz 115W	00Y2857	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Optional	0 used / 2 max	Oct 2013
8737-72x	1x Intel Xeon E5-2680 v2 10C 2.8GHz 25MB 1866MHz 115W	00Y2858	1x 8 GB 1866 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Optional	0 used / 2 max	Oct 2013

a. The 2.5-inch drive bays can be replaced and expanded with SSD kits and a ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)
b. The xMx models include an IBM Flex System CN4022 2-port 10Gb Converged Adapter in slot 1

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis
Processor	Up to two Intel Xeon processor **E5-2600 v2 product family** CPUs with 12 cores (up to 2.7 GHz) or ten cores (up to 3.0 GHz) or eight cores (up to 3.3 GHz) or six cores (up to 3.5 GHz) or four cores (up to 3.5 GHz). Two QPI links up to 8.0 GT/s each. Up to 1866 MHz memory speed. Up to 30 MB L3 cache.
Chipset	Intel C600 series.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs, UDIMMs and LRDIMMs supported. 1.5V and low-voltage 1.35V DIMMs supported. Support for up to 1600 MHz memory speed depending on the processor. Four memory channels per processor (3 DIMMs per channel).
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 128 GB with 16x 8 GB UDIMMs and two processors
Memory protection	ECC, optional memory mirroring and memory rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA and SSD drives. Optional support for up to eight 1.8" SSDs.
Maximum internal storage	With two 2.5" hot-swap drives: **Up to 2 TB with 1 TB 2.5" NL SAS HDDs**, or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" SATA HDDs, or **up to 3.2 TB with 1.6 TB 2.5" SATA SSDs**. An intermix of SAS and SATA HDDs and SSDs is supported. Alternatively, with 1.8" SSDs and ServeRAID M5115 RAID adapter, **up to 6.4 TB with eight 800 GB 1.8" SSDs**. Additional storage available with an attached Flex System Storage Expansion Node.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller. Optional ServeRAID M5115 RAID controller with RAID 0, 1, 10 5, 50 support and 1GB cache. Supports up to eight 1.8" SSD with expansion kits. Optional flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	*x4x models*: **Two 10 Gb Ethernet ports** with Embedded 10Gb Virtual Fabric Ethernet LAN-on-motherboard (LOM) controller; **Emulex BE3R** based; FCoE/iSCSI support with FoD upgrade. *xMx models*: CN4022 2-port 10Gb Converged Adapter standard; **Broadcom BCM57840** based; FCoE/iSCSI support standard. *x2x models*: None standard; optional 1Gb or 10GbE adapters.
PCI Expansion slots	Two I/O connectors for adapters. PCI Express 3.0 x16 interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters.
Ports	USB ports: one external. Two internal for **embedded hypervisor** with optional USB Enablement Kit. Console breakout cable port providing **local KVM and serial ports** (cable standard with chassis; additional cables optional)
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel, Automatic Server Restart. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.

Components	Specification
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.1, 5.0, 5.1.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 6.98 kg (15.4 lb)

Popular and system-unique options: (see model table for processor options)

Part	Description
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
00D5048	16GB (1x16GB, 2Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP RDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y8119	x240 USB Enablement Kit
90Y9310	IBM Flex System Embedded 10Gb Virtual Fabric Upgrade
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
43W7718	IBM 200GB SATA 2.5" MLC HS SSD
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
88Y5920	IBM Flex System CN4022 2-port 10Gb Converged Adapter
00Y3306	IBM Flex System CN4054R 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
68Y8588	IBM Flex System Storage Expansion Node

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x240:
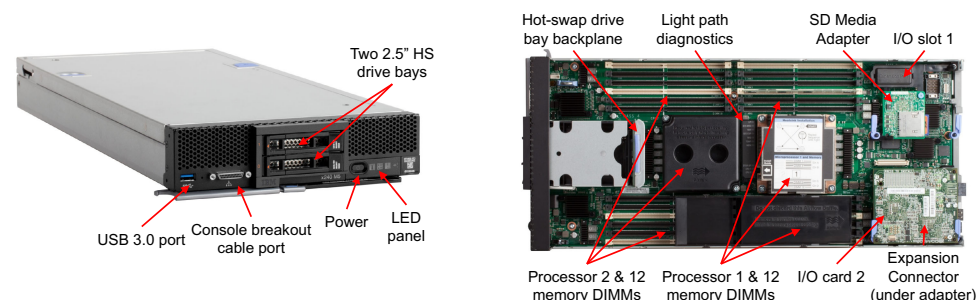http://www.redbooks.ibm.com/abstracts/tips0860.html?Open

IBM Flex System x240 M5 Compute Node (Page 1)

Model[1]	Processor (2 maximum)	2nd processor	Memory	RAID	Disk bays (used/max)[a]	Disks	10 GbE	I/O slots	Announced
Models with no Ethernet adapter standard									
9532-A2x	E5-2609 v3 6C 1.9GHz 15MB 1600MHz 85W	00JX062	1x 16 GB (1600 MHz)	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-B2x	E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00JX060	1x 16 GB (1866 MHz)	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-C2x	E5-2630 v3 8C 2.4GHz 20MB 1866MHz 85W	00JX059	1x 16 GB (1866 MHz)	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-D2x	E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00JX058	1x 16 GB (1866 MHz)	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-F2x	E5-2650L v3 12C 1.8GHz 30MB 2133MHz 65W	00JX057	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-G2x	E5-2650 v3 10C 2.3GHz 25MB 2133MHz 105W	00JX056	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-H2x	E5-2660 v3 10C 2.6GHz 25MB 2133MHz 105W	00JX055	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-J2x	E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	00JX054	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-L2x	E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	00JX053	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-M2x	E5-2690 v3 12C 2.6GHz 30MB 2133MHz 135W	00JX052	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-N2x	E5-2697 v3 14C 2.6GHz 35MB 2133MHz 145W	00JX050	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014
9532-Q2x	E5-2698 v3 16C 2.3GHz 40MB 2133MHz 135W	00KJ045	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	Open	0 used / 2 max	Oct 2014

a. The 2.5-inch drive bays can be replaced and expanded with SSD kits and a ServeRAID M5215 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis
Processor	Up to two **Intel Xeon processor E5-2600 v3** product family CPUs with **18 cores** (2.3 GHz), 16 cores (2.3 GHz), 14 cores (up to 2.6 GHz), 12 cores (up to 2.6 GHz) or 10 cores (up to 2.6 GHz), 8 cores (up to 3.2 GHz), 6 cores (up to 3.4 GHz), or up to 4 cores (up to 3.5 GHz). Two QPI links up to 9.6 GT/s each. Up to 2133 MHz memory speed. Up to **45 MB L3 cache**.
Chipset	Intel C612 chipset.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). RDIMMs and LRDIMMs are supported. Memory types cannot be intermixed. Memory speeds to **2133 MHz**. **Four memory channels** per processor (3 DIMMs per channel).
Memory maximums	With LRDIMMs: Up to 1.5 TB with 24x 64 GB LRDIMMs and two processors. With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors
Memory protection	ECC, optional memory mirroring and memory rank sparing.
Disk drive bays	Two 2.5" hot-swap SAS/SATA drive bays supporting SAS, SATA, and SSD drives. Optional support for 2.5" NVMe Enterprise PCIe solid-state drives. Optional support for up to four 1.8" SSDs in place of the two 2.5" bays.
Maximum internal storage	*With two 2.5" hot-swap drives*: **Up to 3.2 TB** using 1.6 TB 2.5" SATA SSDs or up to 2.4 TB using 1.2 TB SAS HDDs. An intermix of SAS HDDs or SATA HDDs or SSDs is supported. *With two 2.5" NVMe SSDs*: **Up to 4 TB** using 2 TB NVMe 2.5" G3HS Enterprise Value PCIe SSDs. *With four 1.8" SSDs*: Up to 3.2 TB using 800 GB 1.8" SSDs.
RAID support	RAID 0 and 1 with integrated LSI SAS3004 controller. Optional RAID 5 support with ServeRAID M1200 RAID 5 Enablement Kit and 1.8-inch SSDs
Network interfaces	x2x models: None standard; optional 1Gb or 10GbE adapters. x4x models: Two 10 GbE ports with EN4172 2-port 10Gb Ethernet Adapter. x6x models: Two 10 GbE ports with CN4052 2-port 10Gb Virtual Fabric Adapter.
PCI Expansion slots	Two I/O connectors for adapters. PCI Express 3.0 x16 interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters.
Ports	Front: One **USB 3.0 port** and one console breakout cable port providing local KVM and serial ports (cable standard with chassis; additional cables optional). Internal: Optional **SD Media Adapter** provides two SD Media slots for VMware vSphere hypervisor support (RAID 1 pair).
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2) with Renesas SH7758 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, remote presence. Support for IBM Flex System Manager, IBM Systems Director and Active Energy Manager, IBM Tools Center.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD

Components	Specification
Operating systems supported	Microsoft Windows Server 2012 and 2012 R2, Red Hat Enterprise Linux 6 and 7, SUSE Linux Enterprise Server 11, VMware vSphere 5.1 and 5.5
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 7.1 kg (15.6 lb).

Two 2.5" HS drive bays

USB 3.0 port — Console breakout cable port — Power — LED panel

Hot-swap drive bay backplane — Light path diagnostics — SD Media Adapter — I/O slot 1

Processor 2 & 12 memory DIMMs — Processor 1 & 12 memory DIMMs — I/O card 2 — Expansion Connector (under adapter)

Popular and system-unique options: (see model table for processor options)

Part	Description
95Y4812	64GB TruDDR4 Memory (4Rx4,1.2V) PC4-17000 CL15 2133MHz LP LRDIMM
46W0800	32GB TruDDR4 Memory (4Rx4, 1.2V) PC417000 CL15 2133MHz LP LRDIMM
95Y4821	16GB TruDDR4 Memory (2Rx4, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM
00JX141	ServeRAID M1200 RAID 5 Enablement Kit for IBM Flex System x240 M5
00JX177	NVMe Enterprise PCIe SSD Enablement Kit for IBM Flex System x240 M5
00AJ146	IBM 1.2TB 10K 6Gbps SAS 2.5" G3HS HDD
00AJ222	IBM 1.6TB SAS 2.5" MLC G3HS Enterprise SSD
90Y3236	P3600 2.0TB NVMe 2.5" G3HS Enterprise Value PCIe SSD for System x
94Y5160	IBM Flex System CN4058S 8-port 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
00FP647	RAID Adapter for SD Media w/ VMware ESXi 5.5 U2 (2 SD Media, RAIDed)

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x240 M5: http://www.redbooks.ibm.com/abstracts/tips1199.html?Open

IBM Flex System x240 M5 Compute Node (Page 2)

Model[1]	Processor (2 maximum)	2nd processor	Memory	RAID	Disk bays (used/max)[a]	Disks	10 GbE	I/O slots	Announced
Models with EN4172 2-port 10Gb Ethernet Adapter standard									
9532-B4x	E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00JX060	1x 16 GB (1866 MHz)	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Oct 2014
9532-D4x	E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00JX058	1x 16 GB (1866 MHz)	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Oct 2014
9532-H4x	E5-2660 v3 10C 2.6GHz 25MB 2133MHz 105W	00JX055	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Oct 2014
9532-J4x	E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	00JX054	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Oct 2014
9532-L4x	E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	00JX053	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Oct 2014
Models with CN4052 2-port 10Gb Virtual Fabric Adapter standard									
9532-B6x	E5-2620 v3 6C 2.4GHz 15MB 1866MHz 85W	00JX060	1x 16 GB (1866 MHz)	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Nov 2014
9532-D6x	E5-2640 v3 8C 2.6GHz 20MB 1866MHz 90W	00JX058	1x 16 GB (1866 MHz)	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Nov 2014
9532-H6x	E5-2660 v3 10C 2.6GHz 25MB 2133MHz 105W	00JX055	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Nov 2014
9532-J6x	E5-2670 v3 12C 2.3GHz 30MB 2133MHz 120W	00JX054	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Nov 2014
9532-L6x	E5-2680 v3 12C 2.5GHz 30MB 2133MHz 120W	00JX053	1x 16 GB 2133 MHz	LSI SAS3004	2.5" hot-swap (0 / 2)	Open	2x 10 Gb	1 used / 2 max	Nov 2014

a. The 2.5-inch drive bays can be replaced and expanded with SSD kits and a ServeRAID M5215 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis
Processor	Up to two **Intel Xeon processor E5-2600 v3** product family CPUs with **18 cores** (2.3 GHz), 16 cores (2.3 GHz), 14 cores (up to 2.6 GHz), 12 cores (up to 2.6 GHz) or 10 cores (up to 2.6 GHz), 8 cores (up to 3.2 GHz), 6 cores (up to 3.4 GHz), or up to 4 cores (up to 3.5 GHz). Two QPI links up to 9.6 GT/s each. Up to 2133 MHz memory speed. Up to **45 MB L3 cache**.
Chipset	Intel C612 chipset.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). RDIMMs and LRDIMMs are supported. Memory types cannot be intermixed. Memory speeds up to **2133 MHz**. **Four memory channels** per processor (3 DIMMs per channel).
Memory maximums	With LRDIMMs: Up to 1.5 TB with 24x 64 GB LRDIMMs and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors
Memory protection	ECC, optional memory mirroring and memory rank sparing.
Disk drive bays	Two 2.5" hot-swap SAS/SATA drive bays supporting SAS, SATA, and SSD drives. Optional support for 2.5" NVMe Enterprise PCIe solid-state drives. Optional support for up to four 1.8" SSDs in place of the two 2.5" bays.
Maximum internal storage	*With two 2.5" hot-swap drives*: **Up to 3.2 TB** using 1.6 TB 2.5" SATA SSDs or up to 2.4 TB using 1.2 TB SAS HDDs. An intermix of SAS HDDs or SATA HDDs or SSDs is supported. *With two 2.5" NVMe SSDs*: **Up to 4 TB** using 2 TB NVMe 2.5" G3HS Enterprise Value PCIe SSDs. *With four 1.8" SSDs*: Up to 3.2 TB using 800 GB 1.8" SSDs.
RAID support	RAID 0 and 1 with integrated LSI SAS3004 controller. Optional RAID 5 support with ServeRAID M1200 RAID 5 Enablement Kit and 1.8-inch SSDs
Network interfaces	x2x models: None standard; optional 1Gb or 10GbE adapters. x4x models: Two 10 GbE ports with EN4172 2-port 10Gb Ethernet Adapter. x6x models: Two 10 GbE ports with CN4052 2-port 10Gb Virtual Fabric Adapter.
PCI Expansion slots	Two I/O connectors for adapters. PCI Express 3.0 x16 interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters.
Ports	Front: One **USB 3.0 port** and one console breakout cable port providing local KVM and serial ports (cable standard with chassis; additional cables optional). Internal: Optional **SD Media Adapter** provides two SD Media slots for VMware vSphere hypervisor support (RAID 1 pair).
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2) with Renesas SH7758 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, remote presence. Support for IBM Flex System Manager, IBM Systems Director and Active Energy Manager, IBM Tools Center.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD
Operating systems supported	Microsoft Windows Server 2012 and 2012 R2, Red Hat Enterprise Linux 6 and 7, SUSE Linux Enterprise Server 11, VMware vSphere 5.1 and 5.5

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 7.1 kg (15.6 lb).

Hot-swap drive bay backplane · Light path diagnostics · SD Media Adapter · I/O slot 1 · Two 2.5" HS drive bays · USB 3.0 port · Console breakout cable port · Power · LED panel · Processor 2 & 12 memory DIMMs · Processor 1 & 12 memory DIMMs · I/O card 2 · Expansion Connector (under adapter)

Popular and system-unique options: (see model table for processor options)

Part	Description
95Y4812	64GB TruDDR4 Memory (4Rx4,1.2V) PC4-17000 CL15 2133MHz LP LRDIMM
46W0800	32GB TruDDR4 Memory (4Rx4, 1.2V) PC417000 CL15 2133MHz LP LRDIMM
95Y4821	16GB TruDDR4 Memory (2Rx4, 1.2V) PC4-17000 CL15 2133MHz LP RDIMM
00JX141	ServeRAID M1200 RAID 5 Enablement Kit for IBM Flex System x240 M5
00JX177	NVMe Enterprise PCIe SSD Enablement Kit for IBM Flex System x240 M5
00AJ146	IBM 1.2TB 10K 6Gbps SAS 2.5" G3HS HDD
00AJ222	IBM 1.6TB SAS 2.5" MLC G3HS Enterprise SSD
90Y3236	P3600 2.0TB NVMe 2.5" G3HS Enterprise Value PCIe SSD for System x
94Y5160	IBM Flex System CN4058S 8-port 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
00FP647	RAID Adapter for SD Media w/ VMware ESXi 5.5 U2 (2 SD Media, RAIDed)

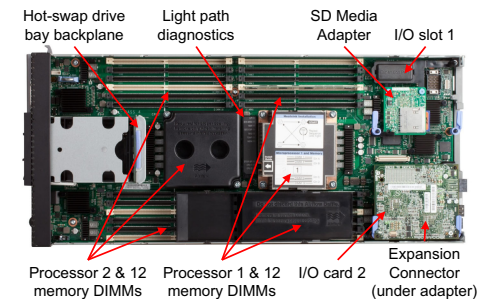For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x240 M5: http://www.redbooks.ibm.com/abstracts/tips1199.html?Open

IBM Flex System x440 Compute Node

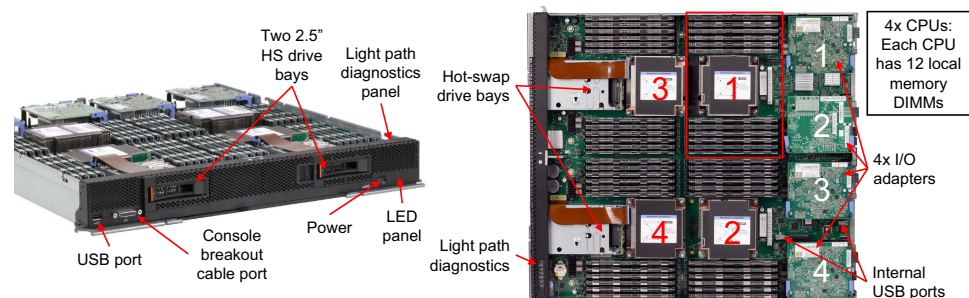| Model[1]	Processor (4 maximum)	Extra CPUs	Memory	Disk adapter	Disk bays (used/max)[a]	Disks	10 GbE Embedded Virtual Fabric[b]	I/O slots (used/max)	Announced
7917-A2x	1x Xeon E5-4603 4C 2.0 GHz 10 MB 1066 MHz 95W	90Y9060	1x 8 GB 1066 MHz[c]	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	No	0 / 4	Aug 2012
7917-A4x	1x Xeon E5-4603 4C 2.0 GHz 10 MB 1066 MHz 95W	90Y9060	1x 8 GB 1066 MHz[c]	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	Standard	2 / 4[b]	Aug 2012
7917-B2x	1x Xeon E5-4607 6C 2.2 GHz 12 MB 1066 MHz 95W	90Y9062	1x 8 GB 1066 MHz[c]	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	No	0 / 4	Aug 2012
7917-B4x	1x Xeon E5-4607 6C 2.2 GHz 12 MB 1066 MHz 95W	90Y9062	1x 8 GB 1066 MHz[c]	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	Standard	2 / 4[b]	Aug 2012
7917-C2x	1x Xeon E5-4610 6C 2.4 GHz 15 MB 1333 MHz 95W	90Y9064	1x 8 GB 1333 MHz	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	No	0 / 4	Aug 2012
7917-C4x	1x Xeon E5-4610 6C 2.4 GHz 15 MB 1333 MHz 95W	90Y9064	1x 8 GB 1333 MHz	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	Standard	2 / 4[b]	Aug 2012
7917-D2x	1x Xeon E5-4620 8C 2.2 GHz 16 MB 1333 MHz 95W	90Y9070	1x 8 GB 1333 MHz	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	No	0 / 4	Aug 2012
7917-D4x	1x Xeon E5-4620 8C 2.2 GHz 16 MB 1333 MHz 95W	90Y9070	1x 8 GB 1333 MHz	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	Standard	2 / 4[b]	Aug 2012
7917-F2x	1x Xeon E5-4650 8C 2.7 GHz 20 MB 1600 MHz 130W	90Y9072	1x 8 GB 1600 MHz	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	No	0 / 4	Aug 2012
7917-F4x	1x Xeon E5-4650 8C 2.7 GHz 20 MB 1600 MHz 130W	90Y9072	1x 8 GB 1600 MHz	SAS/SATA RAID	2.5" hot-swap (0 / 2)	Open	Standard	2 / 4[b]	Aug 2012

a. The 2.5-inch drive bays can be replaced and expanded with the IBM Flash Kit and a ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)
b. The x4x models include two Embedded 10Gb Virtual Fabric Ethernet controllers. Connections are routed using a Fabric Connector. The Fabric Connectors preclude the use of an I/O adapter in I/O connectors 1 and 3 except for the ServeRAID M5115 controller which can be installed in slot 1.
c. For models Axx and Bxx, the standard DIMM is rated at 1333 MHz, but operates at up to 1066 MHz to match the processor memory speed.

Components	Specification
Form factor	Double-wide compute node.
Chassis support	IBM Flex System Enterprise Chassis.
Processor	Up to **four Intel Xeon processor E5-4600** product family processors, each with eight cores (up to 2.7 GHz), six cores (up to 2.9 GHz), or four cores (up to 2.0 GHz). Two QPI links up to 8.0 GTps each. Up to 1600 MHz memory speed. Up to 20 MB L3 cache per processor.
Chipset	Intel C600 series.
Memory	Up to **48 DIMM sockets** (12 DIMMs per processor) using LP DDR3 DIMMs. RDIMMs and LRDIMMs supported. 1.5 V and **low-voltage 1.35 V** DIMMs supported. Support for **up to 1600 MHz memory speed** depending on the processor. **Four memory channels** per processor (three DIMMs per channel). Supports two DIMMs per channel operating at 1600 MHz (2 DPC @ 1600MHz) with single and dual rank RDIMMs. Supports three DIMMs per channel at 1066 MHz with single and dual rank RDIMMs.
Memory maximums	With LRDIMMs: **Up to 1.5 TB with 48x 32 GB LRDIMMs** and four processors. With RDIMMs: Up to 768 GB with 48x 16 GB RDIMMs and four processors.
Memory protection	ECC, Chipkill (for x4-based DIMMs), memory mirroring, rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA, and SSD drives. Optional Flash Kit support for up to eight 1.8" SSDs.
Maximum internal storage	With two 2.5" hot-swap drives: Up to 2 TB with 1 TB 2.5" NL SAS HDDs, or up to 1.8 TB with 900 GB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" SATA HDDs, or up to 512 GB with 256 GB 2.5" SATA SSDs. Intermix of SAS and SATA HDDs and SSDs is supported. With 1.8" SSDs and ServeRAID M5115 RAID adapter: Up to 1.6 TB with eight 200 GB 1.8" SSDs.
RAID support	RAID 0 and 1 with integrated **LSI SAS2004 controller**. Optional **ServeRAID M5115 RAID controller** with RAID 0, 1, 10, 5, 50 support and 1 GB cache. Supports up to **eight 1.8" SSD** with expansion kits. Optional flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	x4x models: **Four 10 Gb Ethernet ports** with two dual-port Embedded 10Gb Virtual Fabric Ethernet LAN-on-motherboard (LOM) controllers; **Emulex BE3** based. Upgradeable to FCoE or iSCSI using IBM Feature on Demand license. x2x models: None standard; optional 1Gb or 10Gb Ethernet adapters.
PCI Expansion slots	**Four I/O connectors for adapters**. PCIe 3.0 x16 interface. I/O slots 3 and 4 require the second processor.
Ports	USB ports: One external. Two internal for **embedded hypervisor**. Console breakout cable port providing **local KVM and serial ports** (cable standard with chassis; additional cables optional).
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, remote presence. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2.

Components	Specification
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.1, 5.0, and 5.1
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 & OEM software.
Dimensions	Width: 437 mm (17.2 in.), height 51 mm (2.0 in.), depth 493 mm (19.4 in.)
Weight	Maximum weight: 12.25 kg (27 lbs)

Popular and system-unique options: (see model table for processor options)

Part	Description
90Y3105	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
00D4968	16GB (1x16GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
90Y3109	8GB (1x8GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
90Y9310	IBM Flex System Embedded 10Gb Virtual Fabric Upgrade
81Y5286	Console Breakout Cable
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
43W7718	IBM 200GB SATA 2.5" MLC HS SSD
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
90Y3554	IBM Flex System CN4054 10Gb Virtual Fabric Adapter

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x440:
http://www.redbooks.ibm.com/abstracts/tips0886.html?Open

IBM Flex System x440 Compute Node (E5-4600 v2)

Model[1]	Processor (4 maximum)	Extra CPUs	Memory	Disk adapter	Disk bays (used/max)[a]	Disks	10 GbE Ethernet	I/O slots (used/max)	Announced
7167-G2x	1x E5-4607 v2 6C 2.6GHz 15MB 1333MHz 95W	47C2303	1x 16 GB (1333 MHz)[b]	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Optional	0 / 4	Dec 2014
7167-H2x	1x E5-4610 v2 8C 2.3GHz 16MB 1600MHz 95W	47C2307	1x 16 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Optional	0 / 4	Dec 2014
7167-J2x	1x E5-4620 v2 8C 2.6GHz 20MB 1600MHz 95W	47C2311	1x 16 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Optional	0 / 4	Dec 2014
7167-J4x	1x E5-4620 v2 8C 2.6GHz 20MB 1600MHz 95W	47C2311	1x 16 GB 1600 MHz	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	2x 10Gb[c]	2 / 4[c]	Dec 2014
7167-L2x	1x E5-4650 v2 10C 2.4GHz 25MB 1866MHz 95W	47C2319	1x 16 GB 1600 MHz[d]	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Optional	0 / 4	Dec 2014
7167-M2x	1x E5-4657L v2 12C 2.4GHz 30MB 1866MHz 115W	47C2331	1x 16 GB 1600 MHz[d]	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Optional	0 / 4	Dec 2014

a. The 2.5-inch drive bays can be replaced and expanded with additional internal bays to support up to eight 1.8-inch solid-state drives (SSDs).
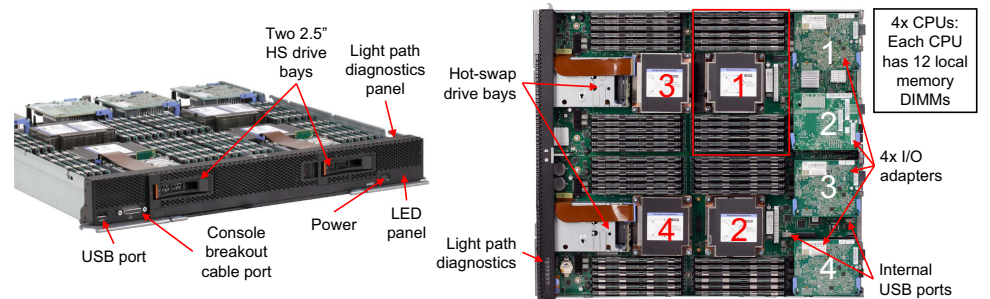b. For model G2x, the standard DIMM is rated at 1600 MHz, but operates at up to 1333 MHz to match the processor memory speed.
c. The x4x models include the IBM Flex System EN4172 2-port 10Gb Ethernet Adapter.
d. For models L2x and M2x, the processor's memory channel will operate at 1600 MHz to match the speed of the standard memory DIMM.

Components	Specification
Form factor	Double-wide compute node.
Chassis support	IBM Flex System Enterprise Chassis.
Processor	Up to four **Intel Xeon E5-4600 v2** family processors, each with either 12 cores (2.4 GHz), 10 cores (2.4 GHz), 8 cores (up to 3.3 GHz) or 6 cores (2.6 GHz). Two QPI links, up to 8.0 GTps each. Up to 1866 MHz memory speed. Up to 30 MB L3 cache per processor.
Chipset	Intel C600 series.
Memory	Up to **48 DIMM sockets** (12 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs and LRDIMMs supported. 1.5 V and low-voltage 1.35 V DIMMs are supported. Support for up to **1600 MHz memory speed**, depending on the processor. **Four memory channels** per processor (three DIMMs per channel). Supports two DIMMs per channel operating at 1600 MHz. Supports three DIMMs per channel at 1066 MHz.
Memory maximums	With LRDIMMs: **Up to 1.5 TB with 48x 32 GB LRDIMMs** and four processors. With RDIMMs: **Up to 768 GB with 48x 16 GB RDIMMs and four processors.**
Memory protection	ECC, Chipkill (for x4-based DIMMs), memory mirroring, rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA, and SSD drives. Optional Flash Kit support for up to eight 1.8" SSDs.
Maximum internal storage	With two 2.5-inch hot-swap drives (Intermix of SAS and SATA HDDs and SSDs is supported): ► Up to 3.2 TB with 1.6 TB 2.5" SSDs ► Up to 2 TB with 1 TB 2.5" NL SAS HDDs ► Up to 2.4 TB with 1.2 TB 2.5" SAS HDDs ► Up to 2 TB with 1 TB 2.5" SATA HDDs With 1.8-inch SSDs and ServeRAID M5115 RAID adapter: ► Up to 6.4 TB with eight 800 GB 1.8-inch SSDs.
RAID support	RAID 0 and 1 with integrated **LSI SAS2004 controller**. Optional **ServeRAID M5115 RAID controller** with RAID 0, 1, 10, 5, 50 support and 1 GB cache. Supports up to **eight 1.8" SSD** with expansion kits. Optional flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	*x4x models*: Two 10 Gb Ethernet ports with IBM Flex System EN4172 2-port 10Gb Ethernet Adapter, based on QLogic BCM57840 ASIC. *x2x models*: None standard; optional 1 Gb or 10 Gb Ethernet adapters.
PCI Expansion slots	**Four I/O connectors for adapters**. PCIe 3.0 x16 interface. I/O slots 3 and 4 require the second processor.
Ports	USB ports: One external. Two internal for **embedded hypervisor**. Console breakout cable port providing **local KVM and serial ports** (cable standard with chassis; additional cables optional).
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, remote presence. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.

Components	Specification
Operating systems supported	Microsoft Windows Server 2008, 2008 R2, 2012 and 2012 R2, Red Hat Enterprise Linux 6, SUSE Linux Enterprise Server 11 and 12, VMware vSphere 5.1 and 5.5.
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 & OEM software.
Dimensions	Width: 437 mm (17.2 in.), height 51 mm (2.0 in.), depth 493 mm (19.4 in.)
Weight	Maximum weight: 12.25 kg (27 lbs)

Two 2.5" HS drive bays · Light path diagnostics panel · Hot-swap drive bays · 4x CPUs: Each CPU has 12 local memory DIMMs · 4x I/O adapters · Internal USB ports · USB port · Console breakout cable port · Power · LED panel · Light path diagnostics

Popular and system-unique options: (see model table for processor options)

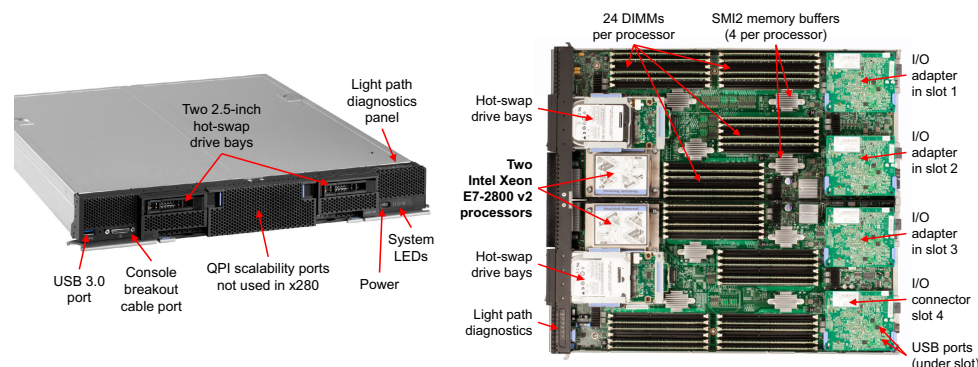| Part	Description
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
46W0761	32GB (1x32GB, 4Rx4, 1.5V) PC3-14900 CL13 ECC DDR3 1866MHz LP LRDIMM
00AD075	IBM 1.2TB 10K 6Gbps SAS 2.5" G2HS HDD
00FN268	S3500 1.6TB SATA 2.5" MLC HS Enterprise Value SSD
00Y3306	IBM Flex System CN4054R 10Gb Virtual Fabric Adapter
00AG530	IBM Flex System EN4172 2-port 10Gb Ethernet Adapter
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
00AJ455	S3500 800GB SATA 1.8" MLC Enterprise Value SSD
81Y5286	Console Breakout Cable

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x440: http://www.redbooks.ibm.com/abstracts/tips1207.html?Open

IBM Flex System x280 X6 Compute Node

Model[1]	Intel Xeon Processor (2 maximum; no scaling beyond 2 supported)	Memory Speed in RAS mode	eXFlash DIMMs[a]	Disk adapter	Disk bays (used/max)	Disks	10 GbE Embedded	I/O slots (used/max)	Announced
7903-A2x	2x E7-2850 v2 12C 2.3GHz 24MB 1600MHz 105W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014
7903-B2x	2x E7-2880 v2 15C 2.5GHz 37.5MB 1600MHz 130W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014
7903-C2x	2x E7-2890 v2 15C 2.8GHz 37.5MB 1600MHz 155W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014

a. IBM eXFlash DIMM support is planned (IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.)[3]

Components	Specification
Form factor	Double-wide compute node.
Chassis support	IBM Flex System Enterprise Chassis.
Scalability	Not supported.
Processor	Two **Intel Xeon E7-2800 v2** processors, each with **15 cores** (up to 2.8 GHz) or 12 cores (2.3 GHz). Two QPI links (1 connected), up to 8.0 GTps. Up to **1600 MHz memory speed**. Up to **37.5 MB L3 cache** per processor. Intel C602J chipset.
Memory	**Up to 48 DIMM sockets** (24 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs and LRDIMMs are supported. Support for up to 1600 MHz memory speed, depending on the processor. Eight memory channels per processor (three DIMMs per channel).
Memory maximums	With LRDIMMs: **Up to 3TB** with 48x 64 GB LRDIMMs and two processors. With RDIMMs: Up to 768 GB with 48x 16 GB RDIMMs and two processors.
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), memory mirroring, rank sparing.
Memory-channel storage	*Planned future support*[3]: Optional **eXFlash DIMMs** are installed in memory DIMM slots but are seen by the OS as storage devices. Memory channels with eXFlash DIMM(s) must also have at least one RDIMM. Cannot be mixed with LRDIMMs. Maximum 16 eXFlash DIMMs can be installed in x280. Maximum 32 eXFlash DIMMs can be installed in a 2-node or 4-node complex. **With 12x 400GB, maximum 6.4 TB**
Disk drive bays	*Standard*: **Two 2.5-inch** hot-swap SAS/SATA drive bays that support SAS, SATA, and SSD drives.
Maximum internal storage	With two 2.5-inch hot-swap drives: **Up to 3.2 TB** with 1.6 TB 2.5" NL SAS HDDs, or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" NL SATA HDDs, or up to 3.2 TB with 1.6 TB 2.5" SAS SSDs. Intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	**RAID 0, 1, 1E, 10 with integrated ServeRAID M1200e** (LSI SAS3004), upgradable to RAID 5, 50.
Network interfaces	None standard; optional Ethernet adapters.
PCI Expansion slots	Up to **four I/O connectors** for adapters. Two connectors have PCI Express 3.0 x24 (x16 + x8) interface with support for dual-ASIC adapters (slots 1 & 2), two other connectors have PCI Express 3.0 x8 interface (slots 3 & 4).
Ports	*External*: One USB 3.0. Console breakout cable port that provides local KVM and serial ports (cable standard with Flex System chassis; additional cables are optional). *Internal*: Two internal USB 2.0 for embedded hypervisor.
Systems management	UEFI, IBM Integrated Management Module 2 (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, and **remote presence**. Support for IBM Flex System Manager, IBM Systems Director, and IBM ServerGuide.
Security features	Power-on password, admin password, Secure Boot, Trusted Platform Module V1.2.
Video	Matrox G200eR2 video core with 16 MB video memory that is integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Operating systems supported	Microsoft Windows Server 2008 R2, 2012, 2012 R2; SUSE Linux Enterprise Server 11; Red Hat Enterprise Linux 6, 7; VMware vSphere 5.1, 5.5
Service and support	Optional service upgrades are available through IBM ServicePac offerings: Four-hour or 2-hour response time, 8-hour fix time, 1-year or 2-year warranty extension, and remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 435 mm (17.14 in.), height 55 mm (2.19 in.), depth 500 mm (19.7 in.)
Weight	Maximum weight: 12.25 kg (27 lbs).

Popular and system-unique options:

Part	Description
46W0741	64GB (1x64GB, 8Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00D5036	8GB (1x8GB, 1Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00AE930	ServeRAID M1200 Zero Cache/RAID 5 Upgrade for IBM Systems (FOD)
00AJ222	IBM 1.6TB SAS 2.5" MLC G3HS Enterprise SSD
00AJ146	IBM 1.2TB 10K 6Gbps SAS 2.5" G3HS HDD
49Y7900	IBM Flex System EN2024 4-port 1Gb Ethernet Adapter
00Y3306	IBM Flex System CN4054R 10Gb Virtual Fabric Adapter

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System X6 Compute Nodes: http://www.redbooks.ibm.com/abstracts/tips1160.html?Open

IBM Flex System x480 X6 Compute Node

Model[1]	Intel Xeon Processor (2 maximum per node, maximum 2 nodes)	Memory Speed in RAS mode	eXFlash DIMMs[a]	Disk adapter	Disk bays (used/max)	Disks	10 GbE Embedded	I/O slots (used/max)	Announced
7903-D2x	2x E7-4809 v2 6C 1.9GHz 12MB 1333MHz 105W	2 x 16GB (1333MHz)[b]	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	May 2014
7903-F2x	2x E7-4820 v2 8C 2.0GHz 16MB 1600MHz 105W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014
7903-G2x	2x E7-4830 v2 10C 2.2GHz 20MB 1600MHz 105W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014
7903-H2x	2x E7-4850 v2 12C 2.3GHz 24MB 1600MHz 105W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	May 2014
7903-J2x	2x E7-4870 v2 15C 2.3GHz 30MB 1600MHz 130W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014
7903-L2x	2x E7-4880 v2 15C 2.5GHz 37.5MB 1600MHz 130W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	May 2014
7903-M2x	2x E7-4890 v2 15C 2.8GHz 37.5MB 1600MHz 155W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014

a. IBM eXFlash DIMM support is planned (IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.)[3]
b. Model D2x includes DIMMs that are rated at 1600 MHz, but operate at 1333 MHz to match the processor memory speed

Components	Specification (per node except where noted)
Form factor	Double-wide compute node.
Chassis support	IBM Flex System Enterprise Chassis.
Scalability	**Scales up to 4-socket** by adding one x480 Compute Node + 4S scalability kit
Processor	Two **Intel Xeon E7-4800 v2** processors, each with **15 cores** (up to 2.8 GHz), 12 cores (up to 2.6 GHz), 10 cores (2.2 GHz), 8 cores (2.0 GHz), or 6 cores (1.9 GHz). **Three QPI links**, up to 8.0 GTps each. Up to **1600 MHz memory speed**. Up to **37.5 MB L3 cache** per processor. Intel C602J chipset.
Memory	**Up to 48 DIMM sockets** (24 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs and LRDIMMs are supported. Support for up to 1600 MHz memory speed, depending on the processor. Eight memory channels per processor (three DIMMs per channel).
Memory maximums	With LRDIMMs: **Up to 3TB** with 48x 64 GB LRDIMMs and two processors. With RDIMMs: Up to 768 GB with 48x 16 GB RDIMMs and two processors.
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), memory mirroring, rank sparing.
Memory-channel storage	*Planned future support*[3]: Optional **eXFlash DIMMs** are installed in memory DIMM slots but are seen by the OS as storage devices. Memory channels with eXFlash DIMM(s) must also have at least one RDIMM. Cannot be mixed with LRDIMMs. Maximum 16 eXFlash DIMMs can be installed in x280. Maximum 32 eXFlash DIMMs can be installed in a 2-node or 4-node complex. **With 32x 400GB, maximum 12.8 TB**
Disk drive bays	*Standard*: **Two 2.5-inch** hot-swap SAS/SATA drive bays that support SAS, SATA, and SSD drives.
Maximum internal storage	With two 2.5-inch hot-swap drives: **Up to 3.2 TB** with 1.6 TB 2.5" NL SAS HDDs, or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" NL SATA HDDs, or up to 3.2 TB with 1.6 TB 2.5" SAS SSDs. Intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	**RAID 0, 1, 1E, 10 with integrated ServeRAID M1200e** (LSI SAS3004), upgradable to RAID 5, 50.
Network interfaces	None standard; optional Ethernet adapters.
PCI Expansion slots	Up to **four I/O connectors** for adapters. Two connectors have PCI Express 3.0 x24 (x16 + x8) interface with support for dual-ASIC adapters (slots 1 & 2), two other connectors have PCI Express 3.0 x8 interface (slots 3 & 4).
Ports	*External*: One USB 3.0. Console breakout cable port that provides local KVM and serial ports (cable standard with Flex System chassis; additional cables are optional). *Internal*: Two internal USB 2.0 for embedded hypervisor.
Security features	Power-on password, admin password, Secure Boot, Trusted Platform Module V1.2.
Video	Matrox G200eR2 video core with 16 MB video memory that is integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Systems management	UEFI, IBM Integrated Management Module 2 (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, and **remote presence**. Support for IBM Flex System Manager, IBM Systems Director, and IBM ServerGuide.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Operating systems supported	Microsoft Windows Server 2008 R2, 2012, 2012 R2; SUSE Linux Enterprise Server 11; Red Hat Enterprise Linux 6, 7; VMware vSphere 5.1, 5.5

Components	Specification (per node except where noted)
Service and support	Optional service upgrades are available through IBM ServicePac offerings: Four-hour or 2-hour response time, 8-hour fix time, 1-year or 2-year warranty extension, and remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 435 mm (17.14 in.), height 55 mm (2.19 in.), depth 500 mm (19.7 in.)
Weight	Maximum weight: 12.25 kg (27 lbs).

Popular and system-unique options:

Part	Description
46W0741	64GB (1x64GB, 8Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00D5036	8GB (1x8GB, 1Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00Y3871	IBM Flex System X6 4-Socket Scalability Connector
00AJ222	IBM 1.6TB SAS 2.5" MLC G3HS Enterprise SSD
00AJ146	IBM 1.2TB 10K 6Gbps SAS 2.5'' G3HS HDD
49Y7900	IBM Flex System EN2024 4-port 1Gb Ethernet Adapter
00Y3306	IBM Flex System CN4054R 10Gb Virtual Fabric Adapter

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System X6 Compute Nodes: http://www.redbooks.ibm.com/abstracts/tips1160.html?Open

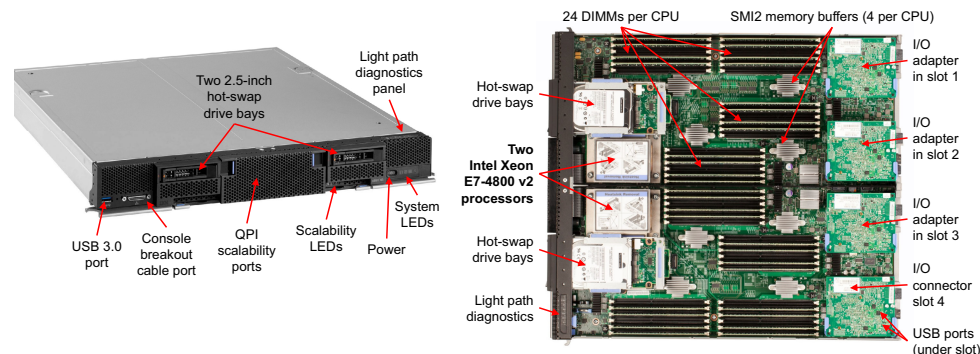# IBM Flex System x880 X6 Compute Node

Model[1]	Intel Xeon Processor (2 maximum per node, maximum 4 nodes)	Memory Speed in RAS mode	eXFlash DIMMs[a]	Disk adapter	Disk bays (used/max)	Disks	10 GbE Embedded	I/O slots (used/max)	Announced
7903-N2x	2x E7-8850 v2 12C 2.3GHz 24MB 1600MHz 105W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014
7903-Q2x	2x E7-8880 v2 15C 2.5GHz 37.5MB 1600MHz 130W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014
7903-R2x	2x E7-8890 v2 15C 2.8GHz 37.5MB 1600MHz 155W	2 x 16GB 1600 MHz	Optional	LSI 3004 SAS	2.5" hot-swap (0 / 2)	Open	No	0 / 4	June 2014

a. IBM eXFlash DIMM support is planned (IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.)[3]

Components	Specification (per node except where noted)
Form factor	Double-wide compute node.
Chassis support	IBM Flex System Enterprise Chassis.
Scalability	Scales up to 4-socket by adding one x880 Compute Node + 4S scalability kit **Scales up to 8-socket** by adding three x880 Compute Nodes + 8S scalability kit
Processor	Two **Intel Xeon E7-8800 v2** processors, each with **15 cores** (up to 2.8 GHz), 12 cores (up to 3.0 GHz), 10 cores (up to 3.2 GHz), or 6 cores (up to 3.4 GHz). **Three QPI links**, up to 8.0 GTps each. Up to **1600 MHz memory speed**. Up to **37.5 MB L3 cache** per processor. Intel C602J chipset.
Memory	**Up to 48 DIMM sockets** (24 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs and LRDIMMs are supported. Support for up to 1600 MHz memory speed, depending on the processor. Eight memory channels per processor (three DIMMs per channel).
Memory maximums	With LRDIMMs: **Up to 3TB** with 48x 64 GB LRDIMMs and two processors. With RDIMMs: Up to 768 GB with 48x 16 GB RDIMMs and two processors.
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), memory mirroring, rank sparing.
Memory-channel storage	*Planned future support[3]*: Optional **eXFlash DIMMs** are installed in memory DIMM slots but are seen by the OS as storage devices. Memory channels with eXFlash DIMM(s) must also have at least one RDIMM. Cannot be mixed with LRDIMMs. Maximum 16 eXFlash DIMMs can be installed in x280. Maximum 32 eXFlash DIMMs can be installed in a 2-node or 4-node complex. **With 32x 400GB, maximum 12.8 TB**
Disk drive bays	*Standard*: **Two 2.5-inch** hot-swap SAS/SATA drive bays that support SAS, SATA, and SSD drives.
Maximum internal storage	With two 2.5-inch hot-swap drives: **Up to 3.2 TB** with 1.6 TB 2.5" NL SAS HDDs, or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" NL SATA HDDs, or up to 3.2 TB with 1.6 TB 2.5" SAS SSDs. Intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	**RAID 0, 1, 1E, 10 with integrated ServeRAID M1200e** (LSI SAS3004), upgradable to RAID 5, 50. Two adjacent compute nodes each with two drives can form a 4-drive RAID-10 array.
Network interfaces	None standard; optional Ethernet adapters.
PCI Expansion slots	Up to **four I/O connectors** for adapters. Two connectors have PCI Express 3.0 x24 (x16 + x8) interface with support for dual-ASIC adapters (slots 1 & 2), two other connectors have PCI Express 3.0 x8 interface (slots 3 & 4).
Ports	*External*: One USB 3.0. Console breakout cable port that provides local KVM and serial ports (cable standard with Flex System chassis; additional cables are optional). *Internal*: Two internal USB 2.0 for embedded hypervisor.
Systems management	UEFI, IBM Integrated Management Module 2 (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **light path diagnostics panel**, automatic server restart, and **remote presence**. Support for IBM Flex System Manager, IBM Systems Director, and IBM ServerGuide.
Security features	Power-on password, admin password, Secure Boot, Trusted Platform Module V1.2.
Video	Matrox G200eR2 video core with 16 MB video memory that is integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD.
Operating systems supported	Microsoft Windows Server 2008 R2, 2012, 2012 R2; SUSE Linux Enterprise Server 11; Red Hat Enterprise Linux 6, 7; VMware vSphere 5.1, 5.5
Service and support	Optional service upgrades are available through IBM ServicePac offerings: Four-hour or 2-hour response time, 8-hour fix time, 1-year or 2-year warranty extension, and remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 435 mm (17.14 in.), height 55 mm (2.19 in.), depth 500 mm (19.7 in.)

Components	Specification (per node except where noted)
Weight	Maximum weight: 12.25 kg (27 lbs).
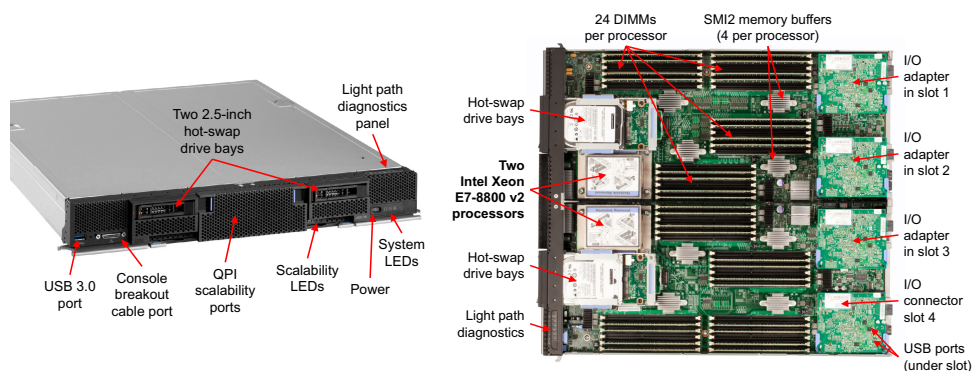
Popular and system-unique options:

Part	Description
46W0741	64GB (1x64GB, 8Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
46W0672	16GB (1x16GB, 2Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00D5036	8GB (1x8GB, 1Rx4, 1.35V) PC3L-12800 CL11 ECC DDR3 1600MHz LP RDIMM
00Y3871	IBM Flex System X6 4-Socket Scalability Connector
00Y3874	IBM Flex System X6 8-Socket Scalability Connector
00AE930	ServeRAID M1200 Zero Cache/RAID 5 Upgrade for IBM Systems (FOD)
00AJ222	IBM 1.6TB SAS 2.5" MLC G3HS Enterprise SSD
00AJ146	IBM 1.2TB 10K 6Gbps SAS 2.5" G3HS HDD
49Y7900	IBM Flex System EN2024 4-port 1Gb Ethernet Adapter
00Y3306	IBM Flex System CN4054R 10Gb Virtual Fabric Adapter

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System X6 Compute Nodes: http://www.redbooks.ibm.com/abstracts/tips1160.html?Open

Withdrawn systems

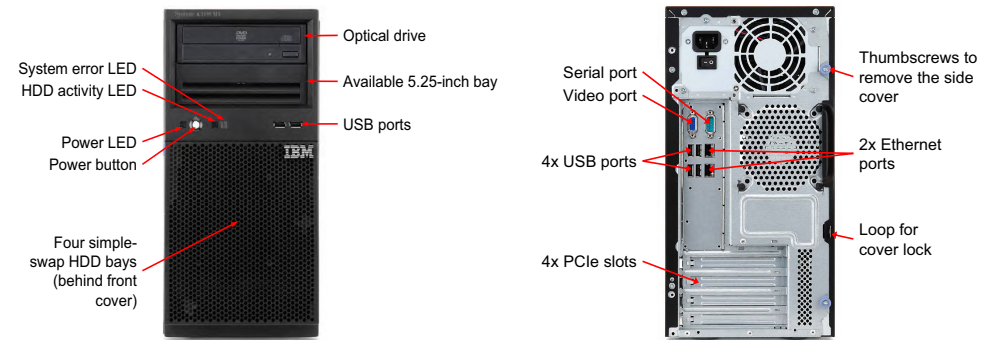This section summarizes servers that were withdrawn from marketing in 2012 onwards. For other withdrawn systems see this document:

http://www.redbooks.ibm.com/redpapers/pdfs/usxref-w.pdf

IBM System x3100 M4 (withdrawn)

Model[1]	Intel Processor (one maximum)	Memory	RAID controller	Disk bays	Disks	Network	Optical	PCIe 3.0	Power supply	Announced / Withdrawn
2582-42x	1x Core i3-2100 3.1 GHz 2C 3 MB 1333 MHz	1x 2 GB 1333 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	No	1x 350 W fixed	Sep 2011 / Oct 2012
2582-62x	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz	1x 2 GB 1333 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	No	1x 350 W fixed	Sep 2011 / Oct 2012
2582-82x	1x Xeon E3-1270 3.4 GHz 4C 8 MB 1333 MHz	1x 4 GB 1333 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	No	1x 300 W fixed	Sep 2011 / Oct 2012

Components	Specification
Form factor	Tower (can be a 4U rack form factor using the optional Tower-to-Rack Conversion Kit).
Processor	One quad-core Intel Xeon E3-1200 or **Xeon E3-1200 v2 series processor** (up to 3.6 GHz/8 MB/1600 MHz) or one dual-core Intel Core i3 processor (up to 3.4 GHz/3 MB/1600 MHz), or one dual-core Pentium processor (up to 3.1 GHz/3 MB/1333 MHz) or one Intel Celeron (1.6 GHz/1 MB/1066 MHz)
L3 cache	Up to 8 MB L3 for Intel Xeon E3-1200 and E3-1200 v2 processors. Up to 3 MB L3 for Intel Core i3 and Pentium processors.
Chip set	Intel C202.
Memory DIMM slots	**Four DDR3 DIMM slots.**
Memory capacity	Up to **32 GB with 8 GB DDR3 UDIMMs** and four populated DIMM slots. RDIMMs are not supported.
Memory protection	ECC.
Disk drive bays	Up to **four 3.5" Simple Swap SATA HDDs**.
Maximum internal storage	**Up to 16 TB** with 4 TB 3.5" SATA HDDs.
RAID support	**Software RAID 0, 1, 10 with ServeRAID C100 controller**; hardware RAID 0, 1, 1E with ServeRAID H1110, BR10il v2, or M1015. Optional RAID 5, 50 with ServeRAID M5014. Optional upgrade to RAID 5 is available for M1015.
Optical drive bays	One 5.25" HH bay, support for DVD-ROM or multiburner. **Half-High SATA DVD-ROM standard** in standard models.
Tape drive bays	One 5.25" HH bay, support for DDS, RDX, or LTO.
Network interfaces	Integrated two-port Gigabit Ethernet (**Intel 82574L**). One port is shared with the IBM Integrated Management Module (IMM).
PCI expansion slots	**Four PCI Express slots**: ▶ Slot 1, PCIe 3.0 x8, full-height, half-length (PCIe 2.0 in some models) ▶ Slot 2, PCIe 3.0 x16 (x8 wired), full-height, half-length (PCIe 2.0 in some models) ▶ Slot 3, PCIe 2.0 x4, full-height, half-length ▶ Slot 4, PCIe 2.0 x1, full-height, half-length
External ports	Two USB 2.0 ports on front. Four USB 2.0, one DB-15 video, one DB-9 serial, two RJ-45 Gigabit Ethernet network ports (one dedicated and one shared with the IMM) on rear. One internal USB port for internal USB tape drive.
Cooling	One speed-controlled nonredundant fan.
Power supply	One fixed 350 W ac or 300 W ac 80 PLUS Bronze power supply (model dependent).
Hot-swap parts	None.
Systems management	UEFI, IBM IMM, Predictive Failure Analysis, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Operating systems supported	Microsoft Windows Server 2008 R2, 2008, 2012, 2012 R2; Red Hat Enterprise Linux 5 and 6; SUSE Linux Enterprise Server 10 and 11; VMware ESX 4.1, 5.0, 5.1, 5.5
Limited warranty	One-year customer replaceable unit and on-site limited warranty with 9x5/next-business-day (NBD) response time.
Service and support	Optional service upgrades available through IBM ServicePacs: 24x7/NBD or four hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 360 mm (14.2 in), width: 180 mm (7.1 in), depth: 480 mm (18.9 in).
Weight	Minimum configuration: 10 kg (22.0 lb), maximum configuration: 13 kg (28.7 lb).

Popular and system-unique options:

Part	Description
44T1570	2 GB (1x 2 GB, 1Rx8, 1.5 V) PC3-10600 CL9 ECC 1333 LP UDIMM
44T1571	4 GB (1x 4 GB, 2Rx8) PC3-10600 CL9 ECC 1333 LP UDIMM
90Y3165	8 GB (1x 8 GB, 4Gb, 2Rx8, 1.5V) PC3-10600 DDR3-1333 LP UDIMM
00D4955	4GB (1x4GB, 2Rx8, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP UDIMM
00D4959	8GB (1x8GB, 2Rx8, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP UDIMM
43W7622	IBM 1TB 7200 SATA 3.5" Simple Swap HDD
42D0787	IBM 2TB 7200 NL SATA 3.5" SS HDD
81Y9778	IBM 3TB 7.2K 6 Gbps SATA 3.5" SS HDD
81Y4492	ServeRAID H1110 SAS/SATA Controller
46M0831	ServeRAID M1015 SAS/SATA Controller
46M0832	ServeRAID M1000 Series Advance Feature Key
46M0916	ServeRAID M5014 SAS/SATA Controller
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
69Y5182	Tower to 4U Rack Conversion Kit for IBM System x3100 M4

For a list of all supported options, see the IBM Redbooks Product Guide for the IBM System x3100 M4:
http://www.redbooks.ibm.com/abstracts/tips0811.html?Open

IBM System x3100 M4 Express Models (withdrawn)

Model[1,2]	Intel Processor (one maximum)	Memory	RAID	Disk bays	Disks	Network	Optical	PCIe 3.0	Power supply	Announced / Withdrawn
Latin America (LA)										
2582-EHU	1x Xeon E3-1220v2 3.1 GHz 4C 8MB 1600 MHz	1x 4 GB 1600	C100	4x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 350 W	May 2012 / Sep 2014
2582-EJU	1x Xeon E3-1230v2 3.3 GHz 4C 8MB 1600 MHz	1x 4 GB 1600	C100	4x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 350 W	May 2012 / Sep 2014
North America (NA)										
2582-EBU	1x Corei3-2100 3.1 GHz 2C 3 MB 1333 MHz	1x 2 GB 1333	C100	4x 3.5" SS	Open	2x GbE	Multiburner	No	1x 350 W	Sep 2011 / Sep 2012
2582-EDU	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz	1x 2 GB 1333	C100	4x 3.5" SS	Open	2x GbE	Multiburner	No	1x 350 W	Sep 2011 / Sep 2012
2582-EEU	1x Xeon E3-1230 3.2 GHz 4C 8 MB 1333 MHz	1x 4 GB 1333	C100	4x 3.5" SS	Open	2x GbE	Multiburner	No	1x 350 W	Sep 2011 / Sep 2012
2582-EHU	1x Xeon E3-1220v2 3.1 GHz 4C 8MB 1600 MHz	1x 4 GB 1600	C100	4x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 350 W	May 2012 / Sep 2014
2582-EJU	1x Xeon E3-1230v2 3.3 GHz 4C 8MB 1600 MHz	1x 4 GB 1600	C100	4x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 350 W	May 2012 / Sep 2014
Europe Integrated Operating Team (IOT)										
2582-K5G	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz	1x 2 GB 1333	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	DVD	No	1x 350 W	Jan 2012 / Jun 2012
2582-K6G	1x Xeon E3-1230 3.2 GHz 4C 8 MB 1333 MHz	1x 4 GB 1333	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	Multiburner	No	1x 350 W	Jan 2012 / Aug 2012
2582-K7G	1x Pentium G850 2.9 GHz 2C 3 MB1333 MHz	1x 2 GB 1333	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	DVD	No	1x 350 W	Jan 2012 / Oct 2012
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
2582-KAG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3	1x 4 GB 1600	M1015	8x 2.5" HS	Open	2x GbE	Multiburner	Yes	1x 430 W HS	Aug 2012 / Apr 2014
2582-KCG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3	1x 4 GB 1600	C100	2x 3.5" SS	2x 1TB 7200 SS SATA	2x GbE	Multiburner	Yes	1x 350 W	Apr 2013 / Apr 2014
2582-K2G	1x Xeon E3-1240 3.3 GHz 4C 8 MB 1333 MHz	1x 2 GB 1333	C100	4x 3.5" SS	2x 500 GB 7200 SATA	2x GbE	Multiburner	No	1x 350 W	Oct 2011 / Jul 2012
2582-K5G	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz	1x 2 GB 1333	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	DVD	No	1x 350 W	Jan 2012 / Jun 2012
2582-K6G	1x Xeon E3-1230 3.2 GHz 4C 8 MB 1333 MHz	1x 4 GB 1333	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	Multiburner	No	1x 350 W	Jan 2012 / Aug 2012
2582-K7G	1x Pentium G850 2.9 GHz 2C 3 MB1333 MHz	1x 2 GB 1333	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	DVD	No	1x 350 W	Jan 2012 / Oct 2012
2582-K8G	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 MHz	1x 4 GB 1600	H1110	4x 3.5" SS	2x 500 GB 7200 SATA	2x GbE	Multiburner	Yes	1x 350 W	May 2012 / Apr 2013
2582-K9G	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 MHz	1x 4 GB 1600	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	DVD-ROM	Yes	1x 350 W	May 2012 / Jul 2014
Russia/Commonwealth of Independent States (CIS)										
2582-K4G	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz	1x 2 GB 1333	C100	4x 3.5" SS	Open	2x GbE	Multiburner	No	1x 350 W	Oct 2011 / Sep 2012
2582-K9G	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 MHz	1x 4 GB 1600	C100	4x 3.5" SS	1x 500 GB 7200 SATA	2x GbE	DVD-ROM	Yes	1x 350 W	May 2012 / Jul 2014

IBM System x3100 M5 Express Models (compact tower chassis) (withdrawn)

Model[1,2]	Intel Processor (one maximum)	Memory	RAID	Disk bays	Disks	Network	Optical	Power supply	Fans	Announced / Withdrawn
Europe										
5457-EAx	Intel Core i3 4150 3.5GHz 3MB 1600MHz 2C (54W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	DVD	1x 350W fixed	1 / 2	May 2014 / Jun 2014
5457-ECx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014 / Jun 2014
5457-EDx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	2x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014 / Jun 2014
5457-A5G	Intel Pentium G3440 3.3GHz 3MB 1600MHz 2C (53W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	1x 300W fixed	1 / 2	Aug 2014
5457-B5G	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	Open	2x GbE	DVD	1x 300W fixed	1 / 2	Aug 2014
Middle East & Africa (MEA)										
5457-EAx	Intel Core i3 4150 3.5GHz 3MB 1600MHz 2C (54W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	DVD	1x 350W fixed	1 / 2	May 2014 / Jun 2014
5457-ECx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014 / Jun 2014
5457-EDx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	2x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014 / Jun 2014
Russia/Commonwealth of Independent States (CIS)										
5457-EAx	Intel Core i3 4150 3.5GHz 3MB 1600MHz 2C (54W)	1x 4 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	DVD	1x 350W fixed	1 / 2	May 2014 / Jun 2014
5457-ECx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	1x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014 / Jun 2014
5457-EDx	Intel Xeon E3-1220 v3 3.1GHz 8MB 1600MHz 4C (80W)	1x 8 GB 1600 MHz	ServeRAID C100	4x 3.5" SS	2x 1TB NL SATA	2x GbE	Multiburner	1x 350W fixed	1 / 2	May 2014 / Jun 2014

IBM System x3200 M3 (withdrawn)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
7327/7328-42x	1x Intel Xeon X3440 2.53 GHz 4C 8 MB 1333 MHz	None	2x 1 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Optional	2x GbE	DVD	1x 401 W	Oct 2009 / Jun 2013
7327/7328-54x	1x Intel Xeon X3450 2.67 GHz 4C 8 MB 1333 MHz	None	2x 1 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Optional	2x GbE	DVD	2x 430 W	Oct 2009 / Mar 2013
7327/7328-62x	1x Intel Xeon X3460 2.8 GHz 4C 8 MB 1333 MHz	None	2x 1 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Optional	2x GbE	DVD	1x 401 W	Oct 2009 / Mar 2013
7327/7328-C1x	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	2x 1 GB RDIMM	Integrated SATA	4x 3.5" SS SATA	Optional	2x GbE	DVD	1x 351 W	Oct 2009 / Jun 2013
7327/7328-C2x	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	2x 1 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Optional	2x GbE	DVD	1x 351 W	Oct 2009 / Jun 2013
7327/7328-A2x	1x Intel Pentium G6950 2.80 GHz 2C 3 MB 1333 MHz	None	1x 1 GB UDIMM	Integrated SATA	4x 3.5" SS SATA	Optional	2x GbE	DVD	1x 401 W	Oct 2010 / Jun 2013
7327/7328-B2x	1x Intel Core i3 540 3.06 GHz 2C 4 MB 1333 MHz	None	1x 1 GB UDIMM	Integrated SATA	4x 3.5" SS SATA	Optional	2x GbE	DVD	1x 401 W	Oct 2010 / Apr 2013

Components	Specification
Form factor	Tower (can be a 5U rack form factor using the optional Tower-to-Rack Conversion Kit).
Processor	One **quad-core Intel Xeon 3400 series processor** (up to 3.06 GHz/8 MB) or one dual-core Intel Core i3 series processor (up to 3.2 GHz/4 MB) with up to 1333 MHz of memory speed, or one dual-core Intel Pentium G6950 (2.8 GHz/3 MB) or Celeron G1101 (2.26 GHz/2 MB) with up to 1066 MHz of memory speed. Supports specific quad-core and dual-core processors by using configure to order (CTO). One processor maximum.
Memory cache	Up to 8 MB L3 for Intel Xeon 3400 series processors. Up to 4 MB L3 for Intel Core i3 series processors.
Chip set	Intel 3420.
Memory DIMM slots	**Six DDR3 DIMM slots.**
Memory capacity	Up to **32 GB with 8 GB DDR3 RDIMMs** and four populated DIMM slots, or up to 16 GB with 4 GB DDR3 UDIMMs and four populated DIMM slots. Dual-core processors support only UDIMMs.
Memory protection	ECC.
Disk drive bays	Up to **four 3.5" Simple Swap SATA HDDs**, up to **four 3.5" Hot-Swap SAS/SATA HDDs**, or up to eight 2.5" hot-swap SAS HDDs (model dependent).
Maximum internal storage	Up to 4.8 TB with 600 GB 2.5" SAS HDDs or up to **8.0 TB with 2 TB 3.5" SATA HDDs**. Intermix of SAS and SATA is not supported.
RAID support	No RAID support on integrated SATA controller (used on simple-swap standard models); RAID 0, 1, or 1E with ServeRAID-BR10il v2 (used on hot-swap standard models). Optional RAID 5 and 50 with M5014 and M5015. Optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Optical drive bays	One 5.25" HH bay, support for DVD-ROM or multiburner. DVD-ROM standard.
Tape drive bays	One 5.25" HH bay, support for internal tape drive, DVD-ROM, or multiburner.
Network interfaces	Integrated two-port Gigabit Ethernet (**Intel 82574L**). One port is shared with the integrated management module (IMM).
PCI expansion slots	**Six total slots** with one PCIe x4 Gen 2 internal slot dedicated to the BR10il v2 RAID controller and five externally accessible slots: ▶ Slot 1, PCIe x8 Gen 2 half length ▶ Slot 2, PCIe x8 Gen 2 half length ▶ Slot 3, PCIe x1 Gen 2 full length ▶ Slot 4, PCI 32bit/33 MHz (5 V) full length ▶ Slot 5, PCI 32bit/33 MHz (5 V) full length
Ports	Two USB 2.0 ports on front. Four USB 2.0, one DB-15 video, one DB-9 serial, two RJ-45 Gigabit Ethernet network ports (one dedicated, one shared with the IMM) on rear. One internal USB port for embedded hypervisor.
Cooling	Three speed-controlled non-redundant fans.
Power supply	One fixed 401 W ac power supply or two hot-swap redundant 430 W ac power supplies (model dependent).
Hot-swap parts	Hard disk drives and power supplies (model dependent).
Systems management	UEFI, IBM IMM, Predictive Failure Analysis, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. **Optional Virtual Media Key** for remote presence (graphics, keyboard, mouse, and virtual media).
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200e integrated into IMM; maximum resolution of 1280x1024 at 85 Hz.

Components	Specification
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008, DC/Windows Small Business Server 2008, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, and VMware ESX 4 and VMware ESXi 4 embedded hypervisor.
Limited warranty	One-year (7327) or three-year (7328) customer replaceable unit and on-site limited warranty with 9x5/next business day (NBD) response time.
Service and support	Optional service upgrades are available through IBM ServicePacs: 24x7/NBD or 4 hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 438 mm (17.25 in), width: 216 mm (8.5 in), depth: 540 (21.25 in).
Weight	Minimum configuration: 16.3 kg (36 lb), maximum configuration: 25.2 kg (56 lb).
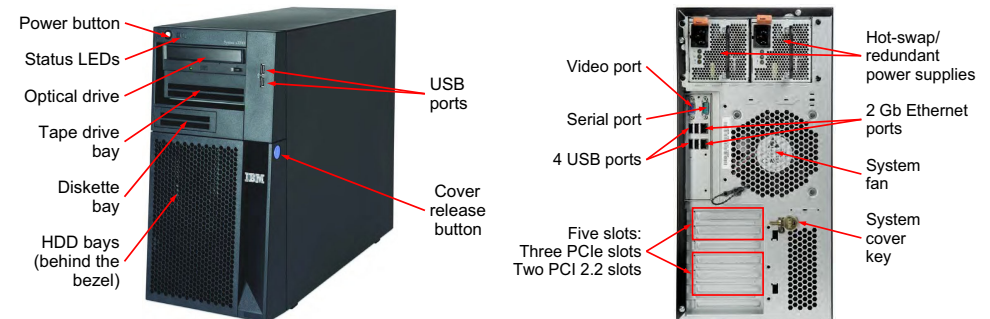
Popular and system-unique options:

Part	Description
44T1570	2 GB (1x 2 GB, 1Rx8, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP UDIMM (4 max)
44T1571	4 GB (1x 4 GB, 2Rx8) PC3-10600 CL9 ECC DDR3 1333MHz LP UDIMM (4 max)
44T1599	4 GB (1x 4 GB, 2Rx8) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM (6 max)
46C7482	8 GB (1x 8 GB, 4Rx8) PC3-8500 CL7 ECC DDR3 1066MHz LP RDIMM (4 max)
42D0787	IBM 2 TB 7200 NL SATA 3.5" SS HDD
81Y9778	IBM 3 TB 7.2K 6 Gbps NL SATA 3.5" SS HDD
42D0782	IBM 2 TB 7200 NL SATA 3.5" HS HDD
81Y9774	IBM 3 TB 7.2K 6 Gbps NL SATA 3.5" HS HDD
42D0767	IBM 2 TB 7.2K 6 Gbps NL SAS 3.5" HS HDD
81Y9758	IBM 3 TB 7.2K 6 Gbps NL SAS 3.5" HS HDD
46M0916	ServeRAID M5014 SAS/SATA Controller
46C7527	IBM Virtual Media Key For Entry Systems
41Y8287	IBM USB Memory Key for VMware ESXi 4.1
42C8923	Tower to 5U Rack Conversion Kit for IBM System x3200 M3

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3200 M3*:
http://www.redbooks.ibm.com/abstracts/tips0802.html?Open

IBM System x3200 M3 Express Models (withdrawn)

| Model[1,2]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
North America (NA)										
7328-E3U	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	2x 4 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Open	2x GbE	DVD-ROM	1x 401 W	Nov 2009 / Dec 2012
7328-E6U	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	2x 2 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Open	2x GbE	DVD-ROM	1x 401 W	Jun 2010 / Dec 2012
Europe Integrated Operating Team (IOT)										
7328-EAG	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	1x 2 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Open	2x GbE	Multiburner	1x 401 W	Sep 2009 / Sep 2012
7328-EBG	1x Intel Xeon X3440 2.53 GHz 4C 8 MB 1333 MHz	None	1x 2 GB RDIMM	M1015	4x 3.5" HS SAS/SATA	Open	2x GbE	Multiburner	1x 401 W	Sep 2009 / Dec 2010
7328-K3G	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	2x 2 GB RDIMM	M1015	4x 3.5" HS SAS/SATA	Open	2x GbE	Multiburner	2x 430 W	Feb 2010 / Mar 2012
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
7328-EAG	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	1x 2 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Open	2x GbE	Multiburner	1x 401 W	Sep 2009 / Sep 2012
7328-K3G	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	2x 2 GB RDIMM	M1015	4x 3.5" HS SAS/SATA	Open	2x GbE	Multiburner	2x 430 W	Feb 2010 / Mar 2012
7328-K4G	1x Intel Xeon X3440 2.53 GHz 4C 8 MB 1333 MHz	None	1x 4 GB RDIMM	BR10il v2	4x 3.5" SS SATA	2x 500 GB	2x GbE	Multiburner	1x 401 W	Sep 2009 / Aug 2012
7328-K8G	1x Intel Xeon X3440 2.53 GHz 4C 8 MB 1333 MHz	None	1x 2 GB UDIMM	BR10il v2	4x 3.5" HS SAS/SATA	2x 500 GB	2x GbE	Multiburner	1x 401 W	Oct 2010 / Oct 2012
Russia/Commonwealth of Independent States (CIS)										
7328-KAG	1x Intel Pentium G6950 2.80 GHz 2C 3 MB 1333 MHz	None	1x 2 GB UDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Open	2x GbE	Multiburner	1x 401 W	Oct 2010 / Mar 2012
7328-K7G	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	1x 2 GB UDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Open	2x GbE	Multiburner	1x 401 W	Sep 2009 / Oct 2012
Latin America (LA)										
7328-E3U	1x Intel Core i3-530 2.93 GHz 2C 4 MB 1333 MHz	None	2x 2 GB UDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Open	2x GbE	Multiburner	2 x 430 W	Nov 2009 / Dec 2012
7328-E5U	1x Intel Xeon X3450 2.67 GHz 4C 8 MB 1333 MHz	None	2x 2 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	2x 250 GB	2x GbE	DVD-ROM	2x 430 W	Jan 2010 / Oct 2011
7328-E6U	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	2x 2 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	Open	2x GbE	DVD-ROM	1x 401 W	Jun 2010 / Dec 2012
7328-E7P	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	1 x 2 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	1x 250 GB	2x GbE	Multiburner	1x 401 W	Jun 2011 / May 2012
7328-E8P	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	2 x 2 GB RDIMM	BR10il v2	4x 3.5" HS SAS/SATA	1x 250 GB	2x GbE	Multiburner	1x 401 W	Jun 2011 / May 2012
Japan										
7328-PEX[a]	1x Intel Xeon X3440 2.53 GHz 4C 8 MB 1333 MHz	None	1x 4 GB RDIMM	M5104 + battery	4x 3.5" HS SAS/SATA	3x 450 GB 15K SAS[a]	2x GbE	DVD-ROM	1x 401 W	Jun 2012 / Sep 2012

a. 7328-PEX included Windows Server 2008 R2 standard edition preinstalled on the three HDDs configured as a single RAID-5 array

IBM System x3250 M3 (withdrawn)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
4251/4252-42x	1 Xeon X3440 2.53 GHz 4C 8 MB 1333 MHz	None	2x 1 GB RDIMM	BR10il v2	2x 3.5" hot-swap	Optional	2x GbE	Optional	1x 351 W	Sep 2009 / July 2013
4251/4252-52x	1 Xeon X3450 2.67 GHz 4C 8 MB 1333 MHz	None	2x 1 GB RDIMM	BR10il v2	2x 3.5" hot-swap	Optional	2x GbE	Optional	1x 351 W	Sep 2009 / Mar 2013
4251/4252-62x	1 Xeon X3460 2.8 GHz 4C 8 MB 1333 MHz	None	2x 1 GB RDIMM	BR10il v2	4x 2.5" hot-swap	Optional	2x GbE	Optional	1x 351 W	Sep 2009 / Mar 2013
4251/4252-C2x	1 Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	None	2x 1 GB RDIMM	Integrated SATA	2x 3.5" simple-swap	Optional	2x GbE	Optional	1x 351 W	Sep 2009 / July 2013
4251/4252-A2x	1 Pentium G6950 2.80 GHz 2C 3 MB 1333 MHz	None	1x 1 GB UDIMM	Integrated SATA	2x 3.5" simple-swap	Optional	2x GbE	Optional	1x 351 W	Oct 2010 / July 2013
4251/4252-B2x	1 Core i3 540 3.06 GHz 2C 4 MB 1333 MHz	None	1x 1 GB UDIMM	Integrated SATA	2x 3.5" simple-swap	Optional	2x GbE	Optional	1x 351 W	Oct 2010 / Apr 2013
4252-E1U	1x Intel Xeon X3450 2.67 GHz 4C 8 MB 1333 MHz	None	2x 2 GB RDIMM	BR10il v2	2x 3.5" hot-swap	Optional	2x GbE	Multiburner	1x 351 W	Sep 2009 / Aug 2012
4252-E3U	1x Intel Xeon X3440 2.53 GHz 4C 8 MB 1333 MHz	None	2x 4 GB RDIMM	BR10il v2	2x 3.5" hot-swap	Optional	2x GbE	Multiburner	1x 351 W	Nov 2009 / Aug 2012

Components	Specification
Form factor	1U rack.
Processor	One **quad-core Intel Xeon 3400 series processor** (up to 3.06 GHz/8 MB) or one dual-core Intel Core i3 series processor (up to 3.2 GHz/4 MB) with up to 1333 MHz of memory speed, or one dual-core Intel Pentium G6950 (2.8 GHz/3 MB) or Celeron G1101 (2.26 GHz/2 MB) with up to 1066 MHz of memory speed. Supports specific quad-core and dual-core processors by using configure to order (CTO).
Memory cache	Up to 8 MB L3 for Intel Xeon 3400 series processors. Up to 4 MB L3 for Intel Core i3 series processors.
Chip set	Intel 3420.
Memory DIMM slots	**Six DDR3 slots**.
Memory capacity	Up to **32 GB with 8 GB DDR3 RDIMMs** and four populated DIMM slots or up to 16 GB with 4 GB DDR3 UDIMMs and four populated DIMM slots. Dual-core processors only support UDIMMs. ECC memory protection.
Disk drive bays	Up to **two 3.5" simple-swap SATA HDDs**, up to **two 3.5" hot-swap SAS/SATA HDDs**, or up to four 2.5" hot-swap SAS/SATA HDDs (model dependent).
Maximum internal storage	Up to 2.4 TB with 600 GB SAS HDDs or up to 4.0 TB with 2-TB SATA HDDs. Intermix of SAS and SATA is not supported.
RAID support	No RAID support on integrated SATA controller (used on simple-swap standard models); RAID 0, 1, or 1E with ServeRAID-BR10il v2 (used on hot-swap standard models). Optional RAID 5 and 50 with ServeRAID M5014 and M5015. Optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Optical drive bays	One with support for DVD-ROM or multiburner.
Tape drive bays	No internal tape drive support.
Network interfaces	Integrated two-port Gigabit Ethernet based on **Intel 82574L** chipset. One port is shared with the integrated management module (IMM).
PCI expansion slots	Standard models support **two PCI Express 2.0 x8 slots**. Both slots are implemented by using one riser card installed into a single riser socket on the system board. Slot details: ▶ Slot 1: PCIe 2.0 x8, low profile, half length ▶ Slot 2: PCIe 2.0 x8, full height, three-quarters length An alternative riser card with one PCI Express 2.0 x8 slot and one PCI-X 133-MHz 64-bit slot is also available, but only by using CTO. Slot details: ▶ Slot 1: PCIe 2.0 x8, low profile, half length ▶ Slot 2: PCI-X 133 MHz 64-bit, full height, three-quarters length The server has an additional internal PCI Express socket dedicated to use of the ServeRAID BR10il v2 controller if installed.
External ports	Two USB 2.0 ports on front. Four USB 2.0, one DB-15 video, one DB-9 serial, two RJ-45 Gigabit Ethernet network ports (one dedicated and one shared with the IMM) on rear. One internal USB port for embedded hypervisor.
Cooling	IBM Calibrated Vectored Cooling with five fans and **N+1 redundancy**.
Power supply	One fixed 351 W ac power supply (standard models) or one fixed 351 W ac HE power supply (only available by using CTO).
Hot-swap parts	Hard disk drives.
Systems management	UEFI, IBM IMM, Predictive Failure Analysis, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. **Optional Virtual Media Key** for remote presence (graphics, keyboard, mouse, and virtual media).

Components	Specification
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200e integrated into IMM; maximum resolution of 1024x768 at 75 Hz.
Operating systems supported	Microsoft Windows Server 2003, 2003 R2, 2008, and 2008 R2, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESX 4/4.1, VMware ESXi 4/4.1, and VMware vSphere 5
Limited warranty	One-year (4251) or three-year (4252) customer replaceable unit and on-site limited warranty with 9x5/next business day (NBD) response time.
Service and support	Optional service upgrades are available through IBM ServicePacs: 24x7/NBD or 4 hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 43 mm (1.75 in), width: 440 mm (17.32 in), depth: 559 mm (22.00 in).
Weight	Minimum configuration: 11.0 kg (24.4 lb), maximum: 12.7 kg (28 lb).
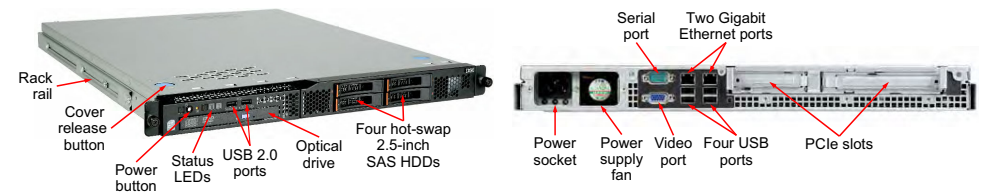
Popular and system-unique options:

Part	Description
44T1599	4 GB (1x 4 GB, 2Rx8) PC3-10600 CL9 ECC 1333 LP RDIMM
46C7482	8 GB (1x 8 GB, 4Rx8) PC3-8500 CL7 ECC 1066 LP RDIMM
44T1570	2 GB (1x 2 GB, 1Rx8, 1.5 V) PC3-10600 CL9 ECC 1333 LP UDIMM
44T1571	4 GB (1x 4 GB, 2Rx8) PC3-10600 CL9 ECC 1333 LP UDIMM
81Y9670	IBM 300 GB 15K 6Gbps SAS 2.5" SFF HS HDD
81Y9650	IBM 900 GB 10K 6Gbps SAS 2.5" SFF HS HDD
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
42D0782	IBM 2 TB 7200 NL SATA 3.5" HS HDD
81Y9774	IBM 3TB 7.2K 6Gbps NL SATA 3.5" HS HDD
42D0787	IBM 2 TB 7200 NL SATA 3.5" SS HDD
81Y9778	IBM 3TB 7.2K 6Gbps NL SATA 3.5" SS HDD
46M0831	ServeRAID M1015 SAS/SATA Controller
46C7527	IBM Virtual Media Key For Entry Systems
41Y8278	IBM USB Memory Key for VMware Hypervisor ESXi 4.0

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3250 M3*:
http://www.redbooks.ibm.com/abstracts/tips0803.html?Open

IBM System x3250 M3 Express Models (withdrawn)

Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
Europe Integrated Operating Team (IOT)										
4252-K8G	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	Not supported	1x 2 GB UDIMM	M1015	2x 3.5" hot-swap	Optional	2x GbE	Multiburner	1x 351 W	Jul 2011 / Jan 2012
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
4252-EAG	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	Not supported	2x 1 GB RDIMM	BR10il v2	2x 3.5" hot-swap	Optional	2x GbE	Multiburner	1x 351 W	Nov 2009 / Oct 2012
4252-K3G	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	Not supported	2x 2 GB UDIMM	M1015	2x 3.5" hot-swap	Optional	2x GbE	Multiburner	1x 351 W	Feb 2010 / Oct 2012
4252-K4G	1x Intel Xeon X3440 2.53 GHz 4C 8 MB 1333 MHz	Not supported	1x 4 GB RDIMM	BR10il v2	2x 3.5" hot-swap	2 x 500 GB SATA	2x GbE	Multiburner	1x 351 W	Sep 2010 / Jul 2012
4252-K8G	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	Not supported	1x 2 GB UDIMM	M1015	2x 3.5" hot-swap	2x 500 GB SATA	2x GbE	Multiburner	1x 351 W	Jul 2011 / Jan 2012
Russia/Commonwealth of Independent States (CIS)										
4252-K4G	1x Intel Xeon X3430 2.4 GHz 4C 8 MB 1333 MHz	Not supported	1x 2 GB UDIMM	BR10il v2	2x 3.5" hot-swap	Optional	2x GbE	Multiburner	1x 351 W	Sep 2010 / Jul 2012
4252-K5G	1x Intel Xeon X3450 2.67 GHz 4C 8 MB 1333 MHz	Not supported	2x 2 GB UDIMM	BR10il v2	2x 3.5" hot-swap	Optional	2x GbE	Multiburner	1x 351 W	Sep 2010 / Jul 2012

IBM System x3250 M4 (withdrawn)

Model[1]	Intel Processor (one maximum)	Second CPU	Memory	RAID	Disk bays	Disks	Network	Optical	PCIe 3.0	Power	Announced / Withdrawn
2583-42x	1x Core i3-2100 3.1 GHz 2C 3 MB 1333 MHz 65W	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Optional	No	1x 300 W / 1	Sep 2011 / Oct 2012
2583-62x	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz 80W	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Optional	No	1x 300 W / 1	Sep 2011 / Oct 2012
2583-72x	1x Xeon E3-1270 3.4 GHz 4C 8 MB 1333 MHz 80W	None	1x 4 GB 1333 MHz	BR10il v2	4x 2.5" HS	Open	2x GbE	Optional	No	1x 460 W / 2	Sep 2011 / Oct 2012
2583-EAU	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz 65W	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	No	1x 300 W	Sep 2011 / Sep 2012
2583-EBU	1x Xeon E3-1230 3.2 GHz 4C 8 MB 1333 MHz 65W	None	1x 4 GB 1333 MHz	BR10il v2	4x 2.5" HS	Open	2x GbE	Multiburner	No	1x 460 W	Sep 2011 / Sep 2012

Components	Specification
Form factor	1U Rack.
Processor	One quad-core Intel Xeon E3-1200 or **Xeon E3-1200 v2 series processor** (up to 3.6 GHz/8 MB/1600 MHz) or one dual-core Intel Core i3 2100 series processor (up to 3.3 GHz/3 MB) with up to 1333 MHz of memory speed. Supports specific quad-core and dual-core processors by using configure to order (CTO).
L3 cache	Up to 8 MB L3 for Intel Xeon E3-1200 and E3-1200 v2 processors. Up to 3 MB L3 for Intel Core i3 and Pentium processors.
Chip set	Intel C202.
Memory DIMM slots	**4 DIMM slots** supporting UDIMMs. RDIMMs are not supported.
Memory capacity	Up to **32 GB with four 8 GB DDR3 UDIMMs**.
Memory protection	ECC.
Disk drive bays	Three configurations: ▶ Up to two 3.5" simple-swap SATA HDDs (some models) ▶ Up to four 2.5" hot-swap SAS HDDs (some models) ▶ Up to four 2.5" simple-swap SAS HDDs (CTO only)
Maximum internal storage	**Up to 8 TB with 4 TB SATA HDDs**, or up to 4.8 TB with 1.2 TB SAS HDDs. Intermix of SAS and SATA is not supported.
RAID support	**Software RAID 0, 1 with ServeRAID C100 controller**. Some models with hardware RAID 0, 1, 1E with ServeRAID-BR10il v2 or H1110. Optional RAID 5 with ServeRAID M1015. Optional RAID 5, 50 with ServeRAID M5014 and M5015.
Optical drive bays	One, support for optional DVD-ROM or multiburner.
Tape drive bays	No internal tape drive support.
Network interfaces	**Integrated two-port Gigabit Ethernet** using **Intel 82574L** controller. One port is shared with IMM2.
PCI expansion slots	**Two PCI Express slots**: ▶ One PCI Express 3.0 x8, full-height, half-length (PCIe 2.0 in some models) ▶ One PCI Express 2.0 x4 (for use only by ServeRAID BR10il v2 or H1110 or the Broadcom NetXtreme Dual Port Ethernet Compact Adapter
External ports	Front: Two USB 2.0 ports Rear: Four USB 2.0, one DB-15 video, one DB-9 serial, two RJ-45 Gigabit Ethernet network ports (one is dedicated, one is shared with IMM2) Internal: One USB 2.0 port for embedded hypervisor
Cooling	IBM Calibrated Vectored Cooling with **four fans and N+1 redundancy**.
Power supply	One fixed 300 W ac power supply or up to two redundant 460 W ac power supplies (model dependent).
Hot-swap parts	Hot-swap SAS drives (some models).
Systems management	UEFI, IBM Integrate Management Module II (IMM2), Predictive Failure Analysis, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eR2 with 16 MB memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M 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 4.1, ESXi 4.1, vSphere 5
Limited warranty	**Three-year** customer-replaceable unit and on-site limited warranty with 9x5/next-business-day (NBD) response time.

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 24x7/NBD or four hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 43 mm (1.7 in), width: 439 mm (17.3 in), depth: 576 mm (22.7 in).
Weight	Minimum configuration: 9.3 kg (20.4 lb), maximum: 10.7 kg (23.5 lb).

Popular and system-unique options:

Part	Description
44T1570	2 GB (1x 2 GB, 1Rx8) PC3-10600 CL9 ECC 1333 LP UDIMM
44T1571	4 GB (1x 4 GB, 2Rx8) PC3-10600 CL9 ECC 1333 LP UDIMM
00D4959	8GB (1x8GB, 2Rx8, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP UDIMM
49Y2003	IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
49Y6190	IBM 4TB 7.2K 6Gbps NL SATA 3.5" SS HDD
81Y9742	IBM 1TB 7.2K 6Gbps NL SATA 2.5" SFF SS HDD
81Y4492	ServeRAID H1110 SAS/SATA Controller
46M0831	ServeRAID M1015 SAS/SATA Controller
46M0916	ServeRAID M5014 SAS/SATA Controller
A1R5	Broadcom NetXtreme Dual Port Ethernet Compact Adapter (CTO only)
95Y3762	Emulex Dual Port 10GbE SFP+ VFA III
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
46M0902	UltraSlim Enhanced SATA Multi-Burner
94Y6236	IBM 460W Redundant Power Supply

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3250 M4*:
http://www.redbooks.ibm.com/abstracts/tips0812.html?Open

IBM System x3250 M4 Express Models (withdrawn)

Model[1,2]	Intel Processor (one maximum)	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	PCIe 3.0	Power	Announced / Withdrawn
North America (NA)											
2583-ECU	1x Xeon E3-1220v2 3.1 GHz 4C 8 MB 1600 MHz 69W	None	1x 4 GB 1600 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 300 W	May 2012 / Sep 2014
2583-EDU	1x Xeon E3-1230v2 3.3 GHz 4C 8 MB 1600 MHz 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	Open	2x GbE	Multiburner	Yes	1x 460 W	May 2012 / Sep 2014
Latin America (LA)											
2583-ECU	1x Xeon E3-1220v2 3.1 GHz 4C 8 MB 1600 MHz 69W	None	1x 4 GB 1600 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 300 W	May 2012 / Sep 2014
2583-EDU	1x Xeon E3-1230v2 3.3 GHz 4C 8 MB 1600 MHz 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	Open	2x GbE	Multiburner	Yes	1x 460 W	May 2012 / Sep 2014
Europe Integrated Operating Team (IOT)											
2583-E1G	1x Corei3-2100 3.1 GHz 2C 3 MB 1333 MHz 65W	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	No	1x 300 W	Sep 2011 / Oct 2012
2583-E2G	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz 65W	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	No	1x 300 W	Sep 2011 / Jun 2012
2583-E3G	1x Xeon E3-1230 3.2 GHz 4C 8 MB 1333 MHz 65W	None	1x 4 GB 1333 MHz	C100	2x 3.5" SS	1x 250 GB	2x GbE	Multiburner	No	1x 300 W	Sep 2011 / Jan 2012
2583-K1G	1x Pentium G850 2.9GHz 2C 3 MB 1333 MHz 65W	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	1x 250 GB	2x GbE	Multiburner	No	1x 300 W	Oct 2011 / Jan 2012
2583-K4G	1x Xeon E3-1240 3.3 GHz 4C 8 MB 1333 MHz 80W	None	1x 4 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	No	1x 300 W	Dec 2011 / Jan 2013
2583-KHG	1x Xeon E3-1230v2 3.3GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 300 W	Jan 2013 / May 2014
2583-KJG	1x Xeon E3-1240v2 3.4GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	Open	2x GbE	Multiburner	Yes	1x 460 W	Jan 2013 / Apr 2014
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)											
2583-E1G	1x Corei3-2100 3.1 GHz 2C 3 MB 1333 MHz 65W	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	No	1x 300 W	Sep 2011 / Oct 2012
2583-E2G	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz 65W	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	No	1x 300 W	Sep 2011 / Jun 2012
2583-E3G	1x Xeon E3-1230 3.2 GHz 4C 8 MB 1333 MHz 65W	None	1x 4 GB 1333 MHz	C100	2x 3.5" SS	1x 250 GB	2x GbE	Multiburner	No	1x 300 W	Sep 2011 / Jan 2012
2583-K1G	1x Pentium G850 2.9GHz 2C 3 MB 1333 MHz	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	1x 250 GB	2x GbE	Multiburner	No	1x 300 W	Oct 2011 / Jan 2012
2583-KAG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	H1110	2x 3.5" SS	2x 500GB 7200 3.5" SS SATA	2x GbE	Multiburner	Yes	1x 300 W	May 2012 / Apr 2014
2583-KBG	1x Xeon E3-1230v2 3.3GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	2x 500GB 7200 2.5" HS SAS	2x GbE	Multiburner	Yes	1x 300 W	Sep 2012 / Apr 2014
2583-KDG	1x Xeon E3-1230v2 3.3GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 300 W	May 2012 / Apr 2013
2583-KEG	1x Xeon E3-1230v2 3.3GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	Open	2x GbE	Multiburner	Yes	1x 300 W	May 2012 / Apr 2013
2583-KHG	1x Xeon E3-1230v2 3.3GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 300 W	Jan 2013 / May 2014
2583-KJG	1x Xeon E3-1240v2 3.4GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	Open	2x GbE	Multiburner	Yes	1x 460 W	Jan 2013 / Apr 2014
2583-KKG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	C100	2x 3.5" SS	2x 1TB 7200 3.5" SS SATA	2x GbE	Multiburner	Yes	1x 300 W	Apr 2013 / May 2014
Russia/Commonwealth of Independent States (CIS)											
2583-E2G	1x Xeon E3-1220 3.1 GHz 4C 8 MB 1333 MHz	None	1x 2 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	No	1x 300 W	Sep 2011 / Jun 2012
2583-E4G	1x Xeon E3-1240 3.3 GHz 4C 8 MB 1333 MHz	None	1x 4 GB 1333 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	No	1x 300 W	Sep 2011 / Jun 2012
2583-KAG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	H1110	2x 3.5" SS	2x 500GB 7200 3.5" SS SATA	2x GbE	Multiburner	Yes	1x 300 W	May 2012 / Apr 2014
2583-KBG	1x Xeon E3-1230v2 3.3GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	2x 500GB 7200 2.5" HS SAS	2x GbE	Multiburner	Yes	1x 300 W	Sep 2012 / Apr 2014
2583-KDG	1x Xeon E3-1230v2 3.3GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	C100	2x 3.5" SS	Open	2x GbE	Multiburner	Yes	1x 300 W	May 2012 / Apr 2013
2583-KEG	1x Xeon E3-1230v2 3.3GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	Open	2x GbE	Multiburner	Yes	1x 300 W	May 2012 / Apr 2013
2583-KJG	1x Xeon E3-1240v2 3.4GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	H1110	4x 2.5" HS	Open	2x GbE	Multiburner	Yes	1x 460 W	Jan 2013 / Apr 2014
2583-KKG	1x Xeon E3-1220v2 3.1GHz 4C 8MB 1600 DDR3 69W	None	1x 4 GB 1600 MHz	C100	2x 3.5" SS	2x 1TB 7200 3.5" SS SATA	2x GbE	Multiburner	Yes	1x 300 W	Apr 2013 / May 2014

IBM System x3300 M4 Express Models (withdrawn)

Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
Europe Integrated Operating Team (IOT)										
7382-E1G	1x Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	00D2581	1x 4GB	ServeRAID C105	4x 3.5" SS / 8	Open	2x GbE	Multiburner	1x 460W	Jul 2012 / Jan 2013
7382-E2G	1x Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	00D2583	1x 8GB	ServeRAID H1110	4x 3.5" HS / 8	Open	2x GbE	Multiburner	1x 460W	Jul 2012 / Jul 2014
7382-E3G	1x Xeon E5-2407 4C 2.2GHz 10MB 1066MHz 80W	00D2582	1x 4GB	ServeRAID M1115	8x 2.5" HS / 16	Open	2x GbE	Multiburner	1x 550W	Jul 2012 / Jul 2014
7382-E4G	1x Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	00D2583	1x 8GB	ServeRAID M5110	8x 2.5" HS / 16	Open	2x GbE	Multiburner	1x 550W	Jul 2012 / Jul 2014
7382-E5G	1x Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	00D2581	1x 4GB	ServeRAID C105	4x 3.5" SS / 8	1x 1TB 3.5" SATA SS	2x GbE	Multiburner	1x 460W	Jul 2012 / Jan 2014
7382-K1G	1x Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	00D2581	1x 8 GB	ServeRAID M5110	4x 3.5" HS / 8	Open	2x GbE	DVD-ROM	1x 550W	Nov 2012 / Jul 2014
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
7382-E1G	1x Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	00D2581	1x 4GB	ServeRAID C105	4x 3.5" SS / 4	Open	2x GbE	Multiburner	1x 460W	Jul 2012 / Jan 2013
7382-E2G	1x Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	00D2583	1x 8GB	ServeRAID H1110	4x 3.5" HS / 4	Open	2x GbE	Multiburner	1x 460W	Jul 2012 / Apr 2013
7382-E3G	1x Xeon E5-2407 4C 2.2GHz 10MB 1066MHz 80W	00D2582	1x 4GB	ServeRAID M1115	8x 2.5" HS / 16	Open	2x GbE	Multiburner	1x 550W	Jul 2012 / Jul 2014
7382-E4G	1x Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	00D2583	1x 8GB	ServeRAID M5110	8x 2.5" HS / 16	Open	2x GbE	Multiburner	1x 550W	Jul 2012 / Apr 2014
7382-E5G	1x Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	00D2581	1x 4GB	ServeRAID C105	4x 3.5" SS / 4	1x 1TB 3.5" SATA SS	2x GbE	Multiburner	1x 460W	Jul 2012 / Jan 2014
7382-K1G	1x Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	00D2581	1x 8 GB	ServeRAID M5110	4x 3.5" HS / 8	Open	2x GbE	DVD-ROM	1x 550W	Nov 2012 / Jul 2014
Russia/Commonwealth of Independent States (CIS)										
7382-E2G	1x Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	00D2583	1x 8GB	ServeRAID H1110	4x 3.5" HS / 4	Optional	2x GbE	Multiburner	1x 460W	Jul 2012 / Jul 2014
7382-E4G	1x Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	00D2583	1x 8GB	ServeRAID M5110	8x 2.5" HS / 16	Optional	2x GbE	Multiburner	1x 550W	Jul 2012 / Jul 2014
7382-E6G	1x Xeon E5-2407 4C 2.2GHz 10MB 1066MHz 80W	00D2582	1x 4GB	ServeRAID M5110	8x 2.5" HS / 16	Optional	2x GbE	Multiburner	1x 550W	Jul 2012 / Jul 2014
7382-K1G	1x Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	00D2581	1x 8 GB	ServeRAID M5110	4x 3.5" HS / 8	Open	2x GbE	DVD-ROM	1x 550W	Nov 2012 / Jul 2014

IBM System x3400 M3 (withdrawn)

Model	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
7378/7379-A2x	1x Xeon E5603 4C 1.60 GHz 4 MB 1066 MHz	81Y5942	1x 2 GB	Integrated SATA	4x 3.5" SS / 4	Optional	2 x GbE	DVD-ROM	1x 670 W Fixed	Feb 2011 / Sep 2013
7378/7379-A4x	1x Xeon E5603 4C 1.60 GHz 4 MB 1066 MHz	81Y5942	1x 2 GB	ServeRAID BR10il v2	4x 3.5" HS / 4	Optional	2 x GbE	DVD-ROM	1x 670 W Fixed	Feb 2011 / Sep 2013
7378/7379-B2x	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 2 GB	Integrated SATA	4x 3.5" SS /4	Optional	2 x GbE	DVD-ROM	1x 670 W Fixed	Feb 2011 / Sep 2013
7378/7379-B4x	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 2 GB	ServeRAID BR10il v2	4x 3.5" HS / 4	Optional	2 x GbE	DVD-ROM	1x 670 W Fixed	Feb 2011 / Sep 2013
7378/7379-C2x	1x Xeon E5607 4C 2.26 GHz 8 MB 1066 MHz	81Y5944	1x 2 GB	ServeRAID BR10il v2	4x 3.5" HS / 4	Optional	2 x GbE	DVD-ROM	1x 670 W Fixed	Feb 2011 / Sep 2013
7378/7379-56x	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 4 GB	ServeRAID BR10il v2	4x 3.5" HS / 4	Optional	2 x GbE	DVD-ROM	1x 670 W Fixed	Feb 2011 / Sep 2013
7378/7379-58x	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 4 GB	ServeRAID M1015	8x 2.5" HS / 16	Optional	2 x GbE	DVD-ROM	1 x 920 W HS	Feb 2011 / Sep 2013
7378/7379-D2x	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y5945	1x 4 GB	ServeRAID M1015	8x 2.5" HS / 8	Optional	2 x GbE	DVD-ROM	1x 670 W Fixed	Feb 2011 / Sep 2013
7378/7379-F2x	1x Xeon E5649 2.53 GHz 6C 12 MB 1333 MHz	81Y5946	1x 4 GB	ServeRAID M5014	16x 2.5" HS / 16	Optional	2 x GbE	DVD-ROM	1 x 920 W HS	Feb 2011 / Sep 2013

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 of memory speed. Supports Intel Xeon 5500 by using CTO.
Memory cache	Up to 12 MB L3 for Xeon 5600 processors.
Chip set	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 DIMMs), memory mirroring, memory sparing.
Disk drive bays	**Up to 16 2.5" hot-swap SAS/SATA HDDs or SSDs**, or up to eight 3.5" hot-swap SAS/SATA HDDs or up to four 3.5" Simple-Swap SATA HDDs. For bay configurations, see the *IBM System x3400 M3 Product Guide*.
Maximum internal storage	**Up to 24 TB with 3 TB 3.5" HS SATA HDDs**, up to 12 TB with 3-TB 3.5" SS SATA HDDs, or up to 9.6 TB with 600 GB 2.5" HS SAS HDDs. Intermix of SAS and SATA is supported. Number of drives limited if 670 W power supply used.
RAID support	RAID 0, 1, or 1E with ServeRAID BR10il v2 or M1015; RAID 0, 1, 5, 10, or 50 with M5014 and M5015. An optional upgrade to RAID 5 is available for M1015. An optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Network interfaces	**Integrated two Gigabit Ethernet ports**. **Broadcom 5716C** controller.
PCI expansion slots	The server supports up to **eight adapter slots** (six slots on the system board and one or two slots on the extender card). The slots have these form factors: ▸ 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
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).
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.
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.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Video	**Matrox G200eV with 16-MB memory** integrated into the IMM. Maximum resolution is 1280x1024 at 75 Hz with 16M colors.

Components	Specification
Systems management	UEFI, IMM, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director, Active Energy Manager, IBM ServerGuide. Optional Virtual Media Key for remote presence.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008, RHEL 5 and 6, SLES 10 and 11, VMware ESX 4.0 and 4.1, ESXi 4.0 and 4.1.
Limited warranty	One-year (7378) or three-year (7379) customer-replaceable unit and on-site 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: 37.85 kg (83.4 lb).
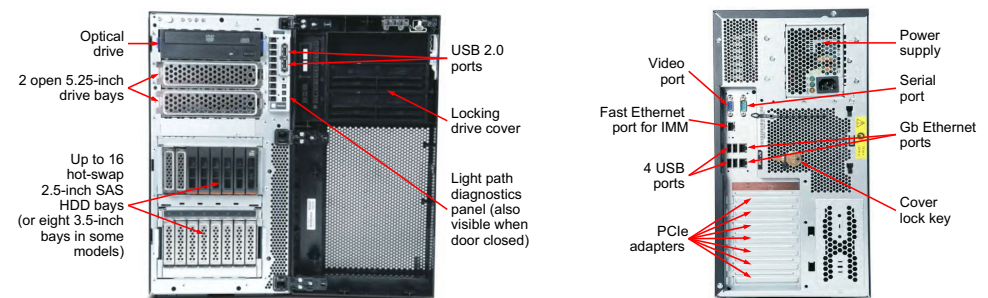
Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1435	4 GB (1x 4 GB, 2Rx4, 1.5 V) PC3-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1436	8 GB (1x 8 GB, 2Rx4, 1.5 V) PC3-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
69Y0894	4x 3.5-inch LFF hot-swap SAS/SATA HDD upgrade kit
69Y0895	8x 2.5-inch SFF hot-swap SAS/SATA HDD upgrade kit (incl 6 Gbps SAS expander)
46M0916	ServeRAID M5014 SAS/SATA Controller
81Y9774	IBM 3 TB 7.2K 6Gbps NL SATA 3.5" HS HDD
44X0381	IBM Redundant Power Supply for x3400/3500 (920W HS)
46C7527	IBM Virtual Media Key For Entry Systems
69Y0893	5Ux26" Tower to Rack Conversion Kit for x3400/x3500

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3400 M3*: http://www.redbooks.ibm.com/abstracts/tips0808.html?0pen

IBM System x3400 M3 Express Models (withdrawn)

Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
North America (NA)										
7379-E4U	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 2 GB	M1015	4x 3.5" SS / 4	Optional	2x GbE	DVD-ROM	1x 920 W	Feb 2011 / Dec 2012
7379-E5U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 2 GB	M1015	4x 3.5" HS / 8	Optional	2x GbE	DVD-ROM	1x 920 W	Feb 2011 / Dec 2012
7379-E6U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 2 GB	M1015	8x 2.5" HS / 16	Optional	2x GbE	DVD-ROM	1x 920 W	Feb 2011 / Dec 2012
Latin America (LA)										
7379-E4U	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 2 GB	M1015	4x 3.5" SS / 4	Optional	2x GbE	DVD-ROM	1x 920 W	Feb 2011 / Dec 2012
7379-E5U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 2 GB	M1015	4x 3.5" HS / 8	Optional	2x GbE	DVD-ROM	1x 920 W	Feb 2011 / Dec 2012
7379-E6U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 2 GB	M1015	8x 2.5" HS / 16	Optional	2x GbE	DVD-ROM	1x 920 W	Feb 2011 / Dec 2012
7379-E7P	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 4 GB	M1015	4x 3.5" SS / 4	Optional	2x GbE	DVD-ROM	1x 920 W	Jun 2011 / Sep 2013
7379-E8P	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 4 GB	M5014	8x 3.5" HS / 8	1x 500 GB	2x GbE	DVD-ROM	1x 920 W	Jun 2011 / Sep 2013
Europe Integrated Operating Team (IOT)										
7379-K4G	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 4 GB	M1015 + Advance Feature Key	8x 2.5" HS / 16	Optional	2x GbE	Multiburner	2x 920 W	Apr 2010 / Nov 2012
7379-KDG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 4 GB	M5014	8x 2.5" HS / 16	2x 146 GB	2x GbE	Multiburner	1x 920 W	Oct 2010 / Jan 2012
7379-KFG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 4 GB	M1015	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W	Mar 2011 / Nov 2012
7379-KGG	1x Xeon E5607 2.26 GHz 4C 8 MB 1066 MHz	81Y5944	1x 4 GB	M1015 + Advance Feature Key	8x 2.5" HS / 16	2x 300 GB	2x GbE	Multiburner	1x 920 W	Mar 2011 / Jan 2012
7379-KHG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 4 GB	M5014	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	2x 920 W	Mar 2011 / Mar 2012
7379-KKG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 4 GB	M5014	8x 2.5" HS / 16	Optional	2x GbE	Multiburner	2x 920 W	Mar 2011 / Nov 2012
7379-KVG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	3x 4 GB	M1015	8x 2.5" HS / 16	2x 300 GB	2x GbE	Multiburner	2x 920 W	Sep 2011 / Nov 2012
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
7379-KDG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 4 GB	M5014	8x 2.5" HS / 16	2x 146 GB	2x GbE	Multiburner	1x 920 W	Oct 2010 / Jan 2012
7379-KBG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 4 GB	M5014	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W	Oct 2010 / Apr 2011
7379-KLG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 4 GB	M1015	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W	Mar 2011 / Oct 2012
7379-KRG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 4 GB	M1015	8x 2.5" HS / 16	3 x 500 GB	2x GbE	Multiburner	1x 920 W	Jul 2011 / Mar 2012
7379-KTG	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz		2x 4 GB	M5014	8x 2.5" HS / 16	2 x 146 GB	2x GbE	Multiburner	2x 920 W	Jul 2011 / Jan 2012
Russia/Commonwealth of Independent States (CIS)										
7379-KMG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 4 GB	M5014	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W	Apr 2011 / Jul 2012
7379-KPG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 4 GB	M5014	4x 3.5" HS / 8	Optional	2x GbE	Multiburner	1x 920 W	Apr 2011 / Jan2013
7379-KQG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	2x 4 GB	M5015 + Battery	8x 2.5" HS / 16	Optional	2x GbE	Multiburner	1x 920 W	Apr 2011 / Jul 2012

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
7380-42x	1x Xeon E5620 2.40 GHz 4C 12 MB, 1066 MHz	69Y0851	1x 4 GB	M1015	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920 W HS	Mar 2010 / Mar 2013
7380-B2x	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y5943	1x 4 GB	M1015	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920 W HS	Feb 2011 / Mar 2013
7380-44x	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y0851	1x 4 GB	M1015	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920 W HS	Feb 2011 / Mar 2013
7380-D2x	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y5945	1x 4 GB	M1015	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920 W HS	Feb 2011 / Mar 2013
7380-F2x	1x Xeon E5649 2.53 GHz 6C 12 MB 1333 MHz	81Y5946	1x 4 GB	M5014	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920 W HS	Feb 2011 / Mar 2013
7380-74x	1x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	69Y0854	1x 4 GB	M5015 + Battery	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920 W HS	Feb 2011 / Mar 2013
7380-G2x	1x Xeon X5675 3.06 GHz 6C 12 MB 1333 MHz	81Y5949	1x 4 GB	M5015 + Battery	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920 W HS	Feb 2011 / Mar 2013
7380-H2x	1x Xeon X5690 3.46 GHz 6C 12 MB 1333 MHz	81Y5951	1x 4 GB	M5015 + Battery	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920 W HS	Feb 2011 / Mar 2013

Components	Specification
Form factor	Tower or 5U Rack.
Processor	Up to **two six-core** (up to 3.46 GHz) or quad-core (up to 3.6 GHz) **Intel Xeon 5600 series processors** with QuickPath Interconnect technology up to 6.4 GT/s, and up to 1333 MHz of memory speed. Intel Xeon 5500 by using CTO.
Memory cache	Up to 12 MB L3 for Xeon 5600 processors.
Chip set	Intel 5520.
Memory	Up to **16 DIMM sockets** (eight DIMMs per processor). **Up to 192 GB** with 16 GB DDR3 RDIMMs and 12 populated DIMM slots (up to 96 GB with six 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 DIMMs), memory mirroring, memory sparing.
Disk drive bays	Up to **twenty-four 2.5" hot-swap SAS/SATA HDDs or SSDs**, up to eight 3.5" hot-swap SAS/SATA HDDs, or up to four 3.5" Simple-Swap SATA HDDs.
Maximum internal storage	**Up to 24 TB with 3 TB 3.5" HS SATA HDDs**, up to 12 TB with 3 TB 3.5" SS SATA HDDs, or up to 14.4 TB with 600 GB 2.5" HS SAS HDDs. Intermix of SAS and SATA is supported.
RAID support	**RAID 0, 1, or 1E with M1015**; RAID 0, 1, 5, 10, or 50 with M5014 and M5015. Optional upgrade to RAID 5 is available for M1015. Optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Optical drive bays	One with support for HH DVD or multiburner (for all models except 8x 3.5" HDDs) or one with support for UltraSlim DVD or multiburner (for 8x 3.5" 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).
Network interfaces	Integrated two Gigabit Ethernet ports based on **Broadcom BCM5709C** chipset.
PCI expansion slots	The server supports up to **eight adapter slots** (six slots on the system board and one or two slots on the extender card). The slots have these form factors: ▶ System board: – 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 (included in standard and express models): – Slot 7: PCIe x8 (x4 wired), full height, full length ▶ PCI-X extender card: (optional, for CTO configurations only): – Slot 7: PCI-X 64-bit/133 MHz, full height, full length – Slot 8: PCI-X 64-bit/133 MHz, full height, full 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 six hot swap fans with N+1 redundancy (three fans standard, three fans optional, come with optional power supply).
Power supply	Up to **two redundant hot-swap 920 W ac** power supplies.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eV with 16 MB of memory integrated into the integrated management module (IMM). Maximum resolution is 1280x1024 at 75 Hz with 16M colors.

Components	Specification
Systems management	UEFI, IBM IMM, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Standard Virtual Media Key for remote presence (graphics, keyboard, mouse, media).
Hot-swap parts	Hard disk drives, power supplies, and fans.
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	Three-year customer-replaceable unit and on-site 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 software.
Dimensions	Width: 218 mm (8.6 in), depth: 767 mm (30.2 in), height: 440 mm (17.3 in).
Weight	Minimum configuration: 27.4 kg (60.4 lb), Maximum: 38.9 kg (85.6 lb).

Popular and system-unique options (see the model table for processor options):

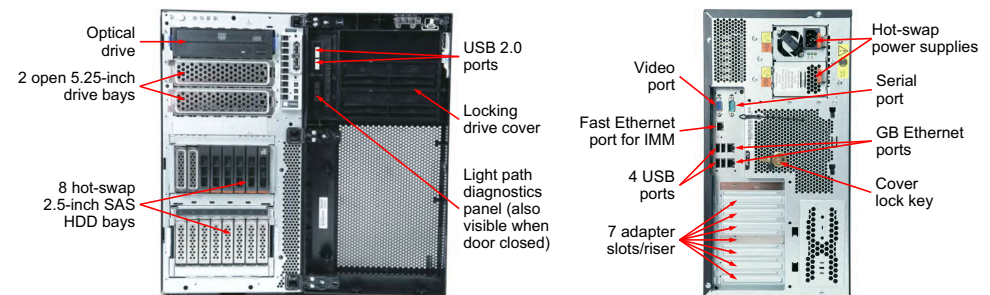| Part	Description
49Y1435	4 GB (1x 4 GB, 2Rx4, 1.5 V) PC3-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1407	4 GB (1x 4 GB, 2Rx8, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1400	16 GB (1x 16 GB, 4Rx4, 1.35 V) PC3L-8500 CL7 ECC DDR3 1066 MHz LP RDIMM
69Y0894	Additional 4x 3.5-inch LFF hot-swap SAS/SATA HDD upgrade kit
69Y0895	Additional 8x 2.5-inch SFF hot-swap SAS/SATA HDD upgrade kit (incl. 6 Gbps SAS exp.
81Y9774	IBM 3TB 7.2K 6Gbps NL SATA 3.5" HS HDD
81Y9758	IBM 3TB 7.2K 6Gbps NL SAS 3.5" HS HDD
44W2244	IBM 600GB 15K 6Gbps SAS 3.5" Hot-Swap HDD
44X0381	IBM Redundant Power Supply for x3400/3500
41Y8287	IBM USB Memory Key for VMware ESXi 4.1
69Y0893	5Ux26" Tower to Rack Conversion Kit for x3400/x3500

For a list of all supported options, see the IBM Redbooks Product Guide for the IBM System x3500 M3:
http://www.redbooks.ibm.com/abstracts/tips0809.html?0pen

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
7380-32x	1x Xeon E5506 2.13 GHz 4C 4 MB 1066 MHz	49Y6867	1x 4 GB	M1015	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Mar 2010 / Aug 2011
7380-52x	1x Xeon E5630 2.53 GHz 4C 12 MB 1066 MHz	69Y0852	1x 4 GB	M1015	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Mar 2010 / Aug 2011
7380-72x	1x Xeon X5650 2.66 GHz 6C 12 MB 1066 MHz	69Y0854	2x 4 GB	M5015 with battery	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Mar 2010 / Aug 2011
7380-82x	1x Xeon X5670 2.93 GHz 6C 12 MB 1066 MHz	69Y0856	2x 4 GB	M5015 with battery	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Mar 2010 / Aug 2011
7380-92x	1x Xeon X5680 3.33 GHz 6C 12 MB 1066 MHz	69Y0857	2x 4 GB	M5015 with battery	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Apr 2010 / Aug 2011
7380-94x	1x Xeon X5680 3.33 GHz 6C 12 MB 1066 MHz	69Y0857	2x 4 GB	M5015 with battery	16x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Jul 2010 / Aug 2011
7380-62x	1x Xeon E5640 2.66 GHz 4C 12 MB 1066 MHz	69Y0853	2x 4 GB	M5014	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Mar 2010 / May 2012

Components	Specification
Form factor	Tower or 5U Rack.
Processor	Up to **two six-core** (up to 3.46 GHz) or quad-core (up to 3.6 GHz) **Intel Xeon 5600 series processors** with QuickPath Interconnect technology up to 6.4 GT/s, and up to 1333 MHz of memory speed. Intel Xeon 5500 by using CTO.
Memory cache	Up to 12 MB L3 for Xeon 5600 processors.
Chip set	Intel 5520.
Memory	Up to **16 DIMM sockets** (eight DIMMs per processor). **Up to 192 GB** with 16 GB DDR3 RDIMMs and 12 populated DIMM slots (up to 96 GB with six 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 DIMMs), memory mirroring, memory sparing.
Disk drive bays	Up to **twenty-four 2.5" hot-swap SAS/SATA HDDs or SSDs**, up to eight 3.5" hot-swap SAS/SATA HDDs, or up to four 3.5" Simple-Swap SATA HDDs.
Maximum internal storage	**Up to 24 TB with 3 TB 3.5" HS SATA HDDs**, up to 12 TB with 3 TB 3.5" SS SATA HDDs, or up to 14.4 TB with 600 GB 2.5" HS SAS HDDs. Intermix of SAS and SATA is supported.
RAID support	**RAID 0, 1, or 1E with M1015**; RAID 0, 1, 5, 10, or 50 with M5014 and M5015. Optional upgrade to RAID 5 is available for M1015. Optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Optical drive bays	One with support for HH DVD or multiburner (for all models except 8x 3.5" HDDs) or one with support for UltraSlim DVD or multiburner (for 8x 3.5" 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).
Network interfaces	Integrated two Gigabit Ethernet ports based on **Broadcom BCM5709C** chipset.
PCI expansion slots	The server supports up to **eight adapter slots** (six slots on the system board and one or two slots on the extender card). The slots have these form factors: ▶ System board: – 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 (included in standard and express models): – Slot 7: PCIe x8 (x4 wired), full height, full length ▶ PCI-X extender card: (optional, for CTO configurations only): – Slot 7: PCI-X 64-bit/133 MHz, full height, full length – Slot 8: PCI-X 64-bit/133 MHz, full height, full 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 six hot swap fans with N+1 redundancy (three fans standard, three fans optional, come with optional power supply).
Power supply	Up to **two redundant hot-swap 920 W ac** power supplies.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eV with 16 MB of memory integrated into the integrated management module (IMM). Maximum resolution is 1280x1024 at 75 Hz with 16M colors.

Components	Specification
Systems management	UEFI, IBM IMM, Predictive Failure Analysis, Light Path Diagnostics, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, IBM ServerGuide. Standard Virtual Media Key for remote presence (graphics, keyboard, mouse, media).
Hot-swap parts	Hard disk drives, power supplies, and fans.
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	Three-year customer-replaceable unit and on-site 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 software.
Dimensions	Width: 218 mm (8.6 in), depth: 767 mm (30.2 in), height: 440 mm (17.3 in).
Weight	Minimum configuration: 27.4 kg (60.4 lb), Maximum: 38.9 kg (85.6 lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1435	4 GB (1x 4 GB, 2Rx4, 1.5 V) PC3-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1407	4 GB (1x 4 GB, 2Rx8, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1400	16 GB (1x 16 GB, 4Rx4, 1.35 V) PC3L-8500 CL7 ECC DDR3 1066 MHz LP RDIMM
69Y0894	Additional 4x 3.5-inch LFF hot-swap SAS/SATA HDD upgrade kit
69Y0895	Additional 8x 2.5-inch SFF hot-swap SAS/SATA HDD upgrade kit (incl. 6 Gbps SAS exp.
81Y9774	IBM 3TB 7.2K 6Gbps NL SATA 3.5" HS HDD
81Y9758	IBM 3TB 7.2K 6Gbps NL SAS 3.5" HS HDD
44W2244	IBM 600GB 15K 6Gbps SAS 3.5" Hot-Swap HDD
44X0381	IBM Redundant Power Supply for x3400/3500
41Y8287	IBM USB Memory Key for VMware ESXi 4.1
69Y0893	5Ux26" Tower to Rack Conversion Kit for x3400/x3500

For a list of all supported options, see the IBM Redbooks Product Guide for the IBM System x3500 M3:
http://www.redbooks.ibm.com/abstracts/tips0809.html?Open

IBM System x3500 M3 Express Models (withdrawn)

Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
7380-K4G	1x Xeon E5607 2.26 GHz 4C 8 MB 1066 MHz	81Y5944	1x 4 GB	M5014	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	Multiburner	1x 920 W	Mar 2011 / Mar 2012
7380-E1x	1x Xeon E5620 2.4 GHz 4C 12 MB 1066 MHz	69Y0851	3x 4 GB	M1015	8x 3.5" HS SAS/SATA / 8	Optional	2x GbE	DVD-ROM	1x 920W HS	Apr 2010 / May 2011
7380-E2x	2x Xeon E5630 2.53 GHz 4C 12 MB 1066 MHz	69Y0852	6x 4 GB	M5014	8x 3.5" HS SAS/SATA / 8	Optional	2x GbE	DVD-ROM	2x 920W HS	Apr 2010 / May 2011
7380-E3x	1x Xeon X5650 2.66 GHz 6C 12 MB 1066 MHz	69Y0854	3x 4 GB	M5014	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	2x 920W HS	Apr 2010 / May 2011
7380-E4x	1x Xeon E5620 2.4 GHz 4C 12 MB 1066 MHz	69Y0851	3x 2 GB	M5014	8x 3.5" HS SAS/SATA / 8	Optional	2x GbE	DVD-ROM	2x 920W HS	Jun 2010 / May 2011
7380-E5x	1x Xeon E5607 2.26 GHz 4C 12 MB 1066 MHz	81Y5944	3x 2 GB	M1015	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Mar 2011 / Aug 2011
7380-E6x	1x Xeon E5645 2.40 GHz 6C 12 MB 1066 MHz	81Y5945	3x 2 GB	M1015	8x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Mar 2011 / Aug 2011
7380-E8x	1x Xeon E5645 2.40 GHz 6C 12 MB 1066 MHz	81Y5945	3x 2 GB	M1015	16x 2.5" HS SAS/SATA / 24	Optional	2x GbE	DVD-ROM	1x 920W HS	Mar 2011 / Aug 2011

IBM System x3500 M4 (E5-2600) Express Models (withdrawn)

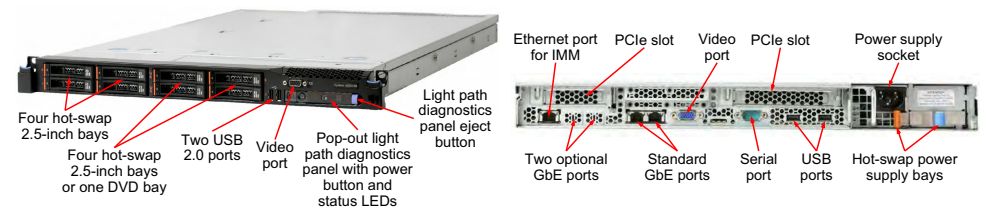| Model[1,2]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
North America (NA)										
7383-EAU	1x E5-2609 4C 2.4GHz 10MB 1066MHz 80W	90Y5944	1x 4 GB	M1115	8x 3.5" HS/ 8	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Sep 2014
7383-EBU	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Flash	8x 3.5" HS/ 8	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Sep 2014
7383-ECU	1x E5-2640 6C 2.5GHz 15MB 1333MHz 95W	90Y5947	2x 8 GB	M5110 512MB Flash	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	2x 750 W	Mar 2012 / Sep 2014
7383-EDU	1x E5-2650 8C 2.0GHz 20MB 1600MHz 95W	90Y5948	1x 8 GB	M5110 1GB Flash	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Sep 2014
Latin America (LA)										
7383-EAU	1x E5-2609 4C 2.4GHz 10MB 1066MHz 80W	90Y5944	1x 4 GB	M1115	8x 3.5" HS/ 8	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Sep 2014
7383-EBU	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Flash	8x 3.5" HS/ 8	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Sep 2014
7383-ECU	1x E5-2640 6C 2.5GHz 15MB 1333MHz 95W	90Y5947	2x 8 GB	M5110 512MB Flash	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	2x 750 W	Mar 2012 / Sep 2014
7383-EDU	1x E5-2650 8C 2.0GHz 20MB 1600MHz 95W	90Y5948	1x 8 GB	M5110 1GB Flash	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Sep 2014
Europe Integrated Operating Team (IOT)										
7383-E1G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	90Y5942	1x 4 GB	M1115	8x 3.5" HS/ 8	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Jan 2014
7383-E2G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	90Y5942	1x 4 GB	M1115	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Jan 2014
7383-E3G	1x E5-2609 4C 2.4GHz 10MB 1066MHz 80W	90Y5944	1x 4 GB	M5110 512MB	8x 2.5" HS / 32	2x 300GB 10k 2.5" SAS	4x GbE	Multiburner	1x 750 W	Mar 2012 / Jun 2012
7383-E4G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	2x 750 W	Mar 2012 / Jun 2012
7383-E5G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Flash	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Jun 2012
7383-E6G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Flash	8x 2.5" HS / 32	2x 300GB 10k 2.5" SAS	4x GbE	Multiburner	1x 750 W	Mar 2012 / Jun 2012
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
7383-E1G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	90Y5942	1x 4 GB	M1115	8x 3.5" HS/ 8	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Apr 2013
7383-E2G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	90Y5942	1x 4 GB	M1115	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Oct 2013
7383-E3G	1x E5-2609 4C 2.4GHz 10MB 1066MHz 80W	90Y5944	1x 4 GB	M5110 512MB	8x 2.5" HS / 32	2x 300GB 10k 2.5" SAS	4x GbE	Multiburner	1x 750 W	Mar 2012 / Jun 2012
7383-E5G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Flash	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Jan 2014
7383-E6G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Flash	8x 2.5" HS / 32	2x 300GB 10k 2.5" SAS	4x GbE	Multiburner	1x 750 W	Mar 2012 / Apr 2013
7383-K1G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Flash	8x 2.5" HS / 32	3x 300GB 10k 2.5" SAS	4x GbE	Multiburner	2x 750 W	Mar 2012 / Apr 2014
7383-K3G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Cache + Battery	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	2x 750 W	Mar 2012 / Apr 2014
Russia/Commonwealth of Independent States (CIS)										
7383-E1G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	90Y5942	1x 4 GB	M1115	8x 3.5" HS/ 8	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Jan 2014
7383-K2G	1x E5-2609 4C 2.4GHz 10MB 1066MHz 80W	90Y5944	1x 4 GB	M5110 512MB Cache + Battery	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	1x 750 W	Mar 2012 / Jan 2013
7383-K3G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Cache + Battery	8x 2.5" HS / 32	Optional	4x GbE	Multiburner	2x 750 W	Mar 2012 / Apr 2014
7383-K4G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	90Y5945	1x 8 GB	M5110 512MB Flash	8x 2.5" HS/ 8	Optional	4x GbE	Multiburner	2x 750 W	Mar 2012 / Jan 2014

IBM System x3530 M4 Express Models (withdrawn)

Model[1,2]	Processor	Second CPU	Memory	RAID	Disk bays	Disks	Network	I/O slots	Optical	Power	Announced / Withdrawn
North America (NA)											
7160-EAU	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	94Y6379	1x 8 GB 1333 MHz	M1115	4x 3.5" HS / 4	Open	2x GbE / 4	3 / 3	Optional	1x 460 W HS / 2	May 2012 / Sep 2014
7160-EBU	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	94Y6378	1x 8 GB 1333 MHz	M1115	4x 3.5" HS / 4	Open	2x GbE / 4	3 / 3	Optional	1x 460 W HS / 2	May 2012 / Dec 2012
7160-ECU	1x E5-2440 6C 2.4GHz 15MB 1333MHz 95W	94Y6376	1x 8 GB 1333 MHz	M5110	8x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS / 2	May 2012 / Jun 2014
Latin America (LA)											
7160-EAU	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	94Y6379	1x 8 GB 1333 MHz	M1115	4x 3.5" HS / 4	Open	2x GbE / 4	3 / 3	Optional	1x 460 W HS / 2	May 2012 / Sep 2014
7160-EBU	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	94Y6378	1x 8 GB 1333 MHz	M1115	4x 3.5" HS / 4	Open	2x GbE / 4	3 / 3	Optional	1x 460 W HS / 2	May 2012 / Dec 2012
7160-ECU	1x E5-2440 6C 2.4GHz 15MB 1333MHz 95W	94Y6376	1x 8 GB 1333 MHz	M5110	8x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS / 2	May 2012 / Jun 2014
Europe Integrated Operating Team (IOT)											
7160-E1G	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	94Y6379	1x 4 GB 1333 MHz	C105	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 3	None	1x 460 W Fixed / 1	May 2012 / Nov 2012
7160-E2G	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	94Y6378	1x 8 GB 1333 MHz	C105	4x 3.5" HS / 4	1x 500 GB 7.2K SATA	2x GbE / 4	2 / 3	None	1x 460 W Fixed / 1	May 2012 / Jan 2013
7160-E3G	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	94Y6378	1x 8 GB 1333 MHz	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS / 2	May 2012 / Apr 2013
7160-E4G	1x E5-2430 6C 2.2GHz 15MB 1333MHz 95W	94Y6377	1x 8 GB 1333 MHz	M5110	8x 2.5" HS / 8	2x 300 GB 10K SAS	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS / 2	May 2012 / Jan 2013
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)											
7160-E1G	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	94Y6379	1x 4 GB 1333 MHz	C105	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 3	None	1x 460 W Fixed / 1	May 2012 / Jul 2014
7160-E2G	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	94Y6378	1x 8 GB 1333 MHz	C105	4x 3.5" HS / 4	1x 500 GB 7.2K SATA	2x GbE / 4	2 / 3	None	1x 460 W Fixed / 1	May 2012 / Jan 2013
7160-E3G	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	94Y6378	1x 8 GB 1333 MHz	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS / 2	May 2012 / Apr 2014
7160-E4G	1x E5-2430 6C 2.2GHz 15MB 1333MHz 95W	94Y6377	1x 8 GB 1333 MHz	M5110	8x 2.5" HS / 8	2x 300 GB 10K SAS	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS / 2	May 2012 / Oct 2013
7160-K5G	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	90Y5003	1x 8 GB 1333 MHz	M5110	8x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Multiburner	1x 460 W	Apr 2013 / Oct 2013
Russia/Commonwealth of Independent States (CIS)											
7160-E1G	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	94Y6379	1x 4 GB 1333 MHz	C105	4x 3.5" HS / 4	Open	2x GbE / 4	2 / 3	None	1x 460 W Fixed / 1	May 2012 / Jul 2014
7160-E3G	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	94Y6378	1x 8 GB 1333 MHz	M1115	8x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Multiburner	1x 460 W HS / 2	May 2012 / Apr 2014
7160-K1G	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	90Y5003	1x 8 GB 1333 MHz	M5110	4x 3.5" HS / 4	Open	2x GbE / 4	3 / 3	None	1x 460 W	Nov 2012 / Jan 2014
7160-K2G	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	90Y5004	1x 8 GB 1333 MHz	M5110	4x 3.5" HS / 4	Open	2x GbE / 4	3 / 3	None	1x 460 W	Nov 2012 / Apr 2014
7160-K3G	1x E5-2407 4C 2.2GHz 10MB 1066MHz 80W	90Y5004	1x 8 GB 1333 MHz	M5110	8x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Multiburner	1x 460 W	Nov 2012 / Apr 2014
7160-K4G	1x E5-2440 6C 2.4GHz 15MB 1333MHz 95W	90Y5000	1x 8 GB 1333 MHz	M5110	8x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Multiburner	1x 675 W	Nov 2012 / Oct 2013
7160-K5G	1x E5-2420 6C 1.9GHz 15MB 1333MHz 95W	90Y5003	1x 8 GB 1333 MHz	M5110	8x 2.5" HS / 8	Open	2x GbE / 4	3 / 3	Multiburner	1x 460 W	Apr 2013 / Jan 2014

IBM System x3550 M3 (withdrawn)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
7944-12x	1x Xeon E5603 1.60 GHz 4C 4 MB 1066 MHz	81Y6548	1x 4 GB	BR10il v2	4 / 8	Optional	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7944-22x	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6549	1x 4 GB	M1015	4 / 8	Optional	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7944-32x	1x Xeon E5607 2.26 GHz 4C 8 MB 1066 MHz	81Y6550	1x 4 GB	M1015	4 / 8	Optional	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7944-D2x	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4006	1x 4 GB	M1015	4 / 8	Optional	2x GbE	Optional	1x 675 W	Mar 2010 / Mar 2014
7944-D4x	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4006	1x 4 GB	M1015	4 / 8	Optional	2x GbE	Optional	1x 460 W	Feb 2011 / Mar 2014
7944-H4x	1x Xeon L5640 2.26 GHz 6C 12 MB 1333 MHz	59Y4005	1x 4 GB	M5015 + Battery	4 / 8	Optional	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7944-52x	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6547	1x 4 GB	M5014	4 / 8	Optional	2x GbE	Optional	1x 460 W	Feb 2011 / Mar 2014
7944-54x	2x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	Standard	2x 4 GB	M5014	4 / 8	Optional	2x GbE	Optional	2x 675 W HE	Feb 2011 / Mar 2014
7944-62x	1x Xeon E5649 2.53 GHz 6C 12 MB 1333 MHz	81Y6552	1x 4 GB	M5014	4 / 8	Optional	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7944-J4x	1x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	59Y4009	1x 4 GB	M5015 + Battery	4 / 8	Optional	2x GbE	Optional	1x 675 W	Feb 2011 / Dec 2013
7944-72x	1x Xeon X5675 3.06 GHz 6C 12 MB 1333 MHz	81Y6554	1x 4 GB	M5015 + Battery	4 / 8	Optional	2x GbE	Optional	1x 675 W	Feb 2011 / Dec 2013
7944-82x	1x Xeon X5690 3.46 GHz 6C 12 MB 1333 MHz	81Y6556	1x 4 GB	M5015 + Battery	4 / 8	Optional	2x GbE	Optional	1x 675 W HE	Feb 2011 / Dec 2013
7944-E4U	1x Xeon E5607 2.26 GHz 4C 8 MB 1066 MHz	81Y6550	3x 2 GB	M1015	4 / 8	Optional	2x GbE	Multiburner	1x 460 W	Feb 2011 / Sep 2012
7944-E5U	1x Xeon E5649 2.53 GHz 6C 12 MB 1333 MHz	81Y6552	3x 2 GB	M1015	4 / 8	Optional	2x GbE	Multiburner	1x 460 W	Feb 2011 / Sep 2012
7944-E6U	1x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	59Y4009	3x 4 GB	M1015	4 / 8	Optional	2x GbE	Multiburner	2x 675 W	Feb 2011 / Sep 2012

Components	Specification
Form factor	1U rack.
Processor	Up to two six-core (up to 3.46 GHz) or quad-core (up to 3.6 GHz) **Intel Xeon 5600 processors** with QuickPath Interconnect technology up to 6.4 GT/s. Up to 1333 MHz of memory speed. Up to 12 MB L3 cache. Intel 5520 chipset.
Memory	Up to **18 DIMM sockets** (9 DIMMs per processor). **Up to 288 GB** with 16 GB DDR3 RDIMMs and 18 populated DIMM slots (up to 144 GB with 9 DIMMs per processor) or up to 48 GB with 4 GB DDR3 UDIMMs and 12 populated DIMM slots (up to 24 GB with 6 DIMMs per processor).
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), memory mirroring and sparing.
Disk drive bays	**Up to eight 2.5" hot-swap SAS/SATA HDDs** or solid-state drives (SSDs). For specific supported bay configurations, see the *x3550 M3 Product Guide*.
Maximum internal storage	Up to 7.2 TB with 900 GB SAS HDDs, **up to 8.0 TB with 1-TB SATA HDDs**, or up to 1.6 TB with 200 GB SSDs. Intermix of SAS, SATA, and SSD is supported.
RAID support	**RAID 0, 1, or 1E with ServeRAID-BR10il v2 or M1015**; RAID 0, 1, 5, 10, or 50 with M5014 and M5015. Optional upgrade to RAID 5 is available for M1015. Optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Optical drive bays	One with optional Optical Drive Enablement Kit, support for DVD-ROM or multiburner. If used, the maximum number of HDD bays is limited to four.
Tape drive bays	None.
Network interfaces	**Integrated 2-Gigabit Ethernet ports**, plus two ports on an optional Gigabit Ethernet with a daughter card (does not use PCI slot). **Broadcom BCM5709**.
PCI expansion slots	**Up to three slots** (up to two standard slots are available; one slot is dedicated to RAID controller), depending on the riser cards used. Standard models have: ► Slot 1: PCI Express 2.0 x16, low profile ► Slot 2: PCI Express 2.0 x16, full height, half length Each slot is implemented using a riser card. Each PCIe riser card can be replaced with a PCI-X riser card offering one PCI-X 64-bit/133 MHz slot.
External ports	Two USB 2.0 and one DB-15 video on front. Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 management, up to 4 RJ-45 GbE network ports (two standard, two optional) on rear. One internal USB port for embedded hypervisor.
Cooling	IBM Calibrated Vectored Cooling with six counter-rotating **hot swap fans** with N+1 redundancy. Altimeter is to control fan speed based on atmospheric pressure.
Power supply	Up to **2 redundant hot-swap** 460 W ac or 675 W ac or 675-W high efficiency (HE) ac power supplies with 90%+ efficiency. Available 675 W -48 V DC.
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 (video, keyboard, mouse, virtual media).
Hot-swap parts	Hard disk drives, power supplies, and fans.
Video	Matrox G200eV with 16 MB of memory integrated into the IMM. Maximum resolution is 1280x1024 at 75 Hz with 16M colors.
Security features	Power-on password, administrator password, and Trusted Platform Module.

Components	Specification
Operating systems supported	Microsoft Windows Server 2003 and 2003 R2, Microsoft Windows Server 2008 R2 and 2008, Red Hat Enterprise Linux 4, 5 and 6, Red Hat Enterprise MRG 1.0 Realtime, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4/4.1 and VMware ESXi 4/4.1 embedded hypervisor, Sun Solaris 10, VMware vSphere 5.
Limited warranty	**Three-year** customer replaceable unit and on-site limited warranty with 9x5/next business day (NBD) response time.
Service and support	Optional service upgrades are available through IBM ServicePacs: 24x7/next business day or 4 hours on-site repair, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and third-party (Microsoft, Linux, VMware) software.
Dimensions	Height: 43 mm (1.7 in), width: 440 mm (17.3 in), depth: 711 mm (28.0 in).
Weight	Minimum configuration 12.7 kg (28 lb), maximum configuration 15.9 kg (35.1 lb).

Four hot-swap 2.5-inch bays
Four hot-swap 2.5-inch bays or one DVD bay
Two USB 2.0 ports
Video port
Pop-out light path diagnostics panel with power button and status LEDs
Light path diagnostics panel eject button
Ethernet port for IMM
PCIe slot
Video port
PCIe slot
Power supply socket
Two optional GbE ports
Standard GbE ports
Serial port
USB ports
Hot-swap power supply bays

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1406	4 GB (1x 4 GB, 1Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1397	8 GB (1x 8 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1563	16 GB (1x16 GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
81Y9650	IBM 900 GB 10K 6 Gbps SAS 2.5" SFF HS HDD
59Y3992	IBM System x3550 M3 R2 plus 4 HDD Kit with 8HDD Bezel
59Y3952	IBM System x3550 M3 R2 ODD Kit
46M1070	IBM System x3550 M2 PCI-Express (1x16) Riser Card
46M1071	IBM System x3550 M2 PCI-X Riser Card (one PCI-X 1.0a 64-bit 133 MHz slot)
46M1075	IBM 675 W Redundant Power Supply
81Y6557	IBM 675W High Efficiency Redundant AC Power Supply
81Y6558	IBM 460W Redundant AC Power Supply
46C7526	IBM Virtual Media Key

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3550 M3*:

IBM System x3550 M3 Express Models (withdrawn)

Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
Europe Integrated Operating Team (IOT)										
7944-K3Gx	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4006	1x 4 GB	M5014	8 / 8	Optional	2x GbE	Optional	1x 675 W	Apr 2010 / Nov 2012
7944-KAG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6549	1x 4 GB	M1015	4 / 8	Optional	2x GbE	Multiburner	1x 460 W	Mar 2011 / Apr 2012
7944-KEG	1x Xeon E5645 2.40 GHz 4C 12 MB 1333 MHz	81Y6547	2x 4 GB	M5014	4 / 8	Optional	2x GbE	Multiburner	2x 460 W	Mar 2011 / Jan 2012
7944-KLG	1x Xeon E5640 2.66 GHz 4C 12 MB 1333 MHz	59Y4008	1x 4 GB	M5014	4 / 8	Optional	2x GbE	Multiburner	1x 460 W	Jul 2011 / Mar 2012
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
7944-K3G	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4006	1x 4 GB	M5014	8 / 8	Optional	2x GbE	Optional	1x 675 W	Apr 2010 / Nov 2012
7944-KAG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6549	1x 4 GB	M1015	4 / 8	Optional	2x GbE	Multiburner	1x 460 W	Mar 2011 / Apr 2012
7944-KEG	1x Xeon E5645 2.40 GHz 4C 12 MB 1333 MHz	81Y6547	2x 4 GB	M5014	4 / 8	Optional	2x GbE	Multiburner	2x 460 W	Mar 2011 / Jan 2012
7944-KJG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	59Y4008	1x 4 GB	M1015	4 / 8	2x 500 GB	2x GbE	Multiburner	1x 460 W	Jul 2011 / Mar 2012
Russia/Commonwealth of Independent States (CIS)										
7944-KDG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6549	1x 4 GB	M5015 + Battery	4 / 8	Optional	2x GbE	Multiburner	1x 675 W	Apr 2011 / Jul 2012
7944-KFG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4006	2x 4 GB	M5015 + Battery	4 / 8	Optional	2x GbE	Multiburner	1x 675 W	Apr 2011 / Jul 2012
7944-KGG	1x Xeon E5645 2.40 GHz 4C 12 MB 1333 MHz	81Y6547	2x 4 GB	M5015 + Battery	4 / 8	Optional	2x GbE	Multiburner	2x 675 W	Apr 2011 / Oct 2012
7944-KHG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4006	3x 4 GB	M5015 + Battery	4 / 8	3x 146GB	2x GbE	Multiburner	1x 675 W	May 2011 / Jan 2012
Latin America (LA)										
7944-E7U	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6549	1x 4 GB	M1015	4 / 8	1x 500 GB	2x GbE	Multiburner	1x 460 W	Jun 2011
7944-E8U	1x Xeon E5645 2.40 GHz 4C 12 MB 1333 MHz	81Y6547	2x 4 GB	M5014	4 / 8	Optional	2x GbE	Multiburner	2x 460 W	Jun 2011

IBM System x3550 M4 (E5-2600) Express Models (withdrawn)

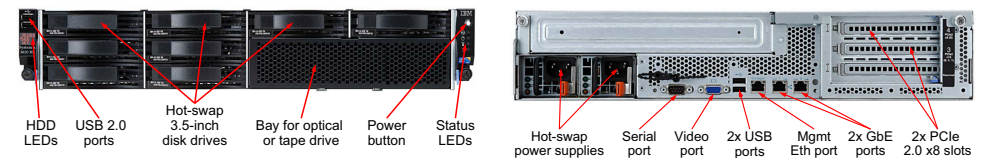| Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
North America (NA)										
7914-EAU	1x Xeon E5-2609 4C 2.4GHz 10MB 1066MHz 80W	69Y5674	1x 4 GB	M1115	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Sep 2014
7914-EBU	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	1x 8GB	M5110 512MB Flash	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Sep 2014
7914-ECU	1x Xeon E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5676	1x 8GB	M5110 512MB Flash	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Dec 2012
7914-EDU	1x Xeon E5-2650 8C 2.0GHz 20MB 1600MHz 95W	69Y5678	1x 8GB	M5110 1GB Flash	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Dec 2012
Latin America (LA)										
7914-EAU	1x Xeon E5-2609 4C 2.4GHz 10MB 1066MHz 80W	69Y5674	1x 4 GB	M1115	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Sep 2014
7914-EBU	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	1x 8GB	M5110 512MB Flash	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Sep 2014
7914-ECU	1x Xeon E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5676	1x 8GB	M5110 512MB Flash	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Dec 2012
7914-EDU	1x Xeon E5-2650 8C 2.0GHz 20MB 1600MHz 95W	69Y5678	1x 8GB	M5110 1GB Flash	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Dec 2012
Europe Integrated Operating Team (IOT)										
7914-E1G	1x Xeon E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5672	1x 4 GB	M1115	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Apr 2014
7914-E2G	1x Xeon E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5672	1x 4 GB	M1115	4x 2.5" HS / 8	2 x 500GB 2.5" HS SATA	4x GbE	Multiburner	1x 550W	Mar 2012/ Apr 2013
7914-E3G	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	1x 8 GB	M5110 512MB Cache	8x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Jun 2012
7914-E4G	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	1x 8 GB	M1115	3x 3.5" HS/ 3	Optional	4x GbE	Optional	1x 550W	Mar 2012 / Jun 2012
7914-E5G	1x Xeon E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5676	1x 8 GB	M5110 512MB Flash	4x 2.5" HS / 8	2 x 300GB 2.5" 10k HS SAS	4x GbE	Multiburner	2x 550W	Mar 2012 / Jun 2012
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
7914-E1G	1x Xeon E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5672	1x 4 GB	M1115	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Apr 2014
7914-E2G	1x Xeon E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5672	1x 4 GB	M1115	4x 2.5" HS / 8	2 x 500GB 2.5" HS SATA	4x GbE	Multiburner	1x 550W	Mar 2012 / Apr 2013
7914-E3G	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	1x 8 GB	M5110 512MB Cache	8x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Jun 2012
7914-E4G	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	1x 8 GB	M1115	3x 3.5" HS/ 3	Optional	4x GbE	Optional	1x 550W	Mar 2012 / Jun 2012
7914-E5G	1x Xeon E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5676	1x 8 GB	M5110 512MB Flash	4x 2.5" HS / 8	2 x 300GB 2.5" 10k HS SAS	4x GbE	Multiburner	2x 550W	Mar 2012 / Jun 2012
7914-K2G	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	1x 8 GB	M5110 512MB Flash	3x 3.5" HS/ 3	Optional	4x GbE	Optional	1x 550W	Mar 2012 / Jan 2014
7914-K3G	1x Xeon E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5676	2x 8 GB	M5110 512MB Flash	8x 2.5" HS / 8	Optional	4x GbE	Multiburner	2x 550W	Mar 2012 / Jul 2014
Russia/Commonwealth of Independent States (CIS)										
7914-E1G	1x Xeon E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5672	1x 4 GB	M1115	4x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Apr 2014
7914-K1G	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	1x 8 GB	M5110 512MB Flash	8x 2.5" HS / 8	Optional	4x GbE	Multiburner	1x 550W	Mar 2012 / Apr 2014
7914-K2G	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5675	1x 8 GB	M5110 512MB Flash	3x 3.5" HS/ 3	Optional	4x GbE	Optional	1x 550W	Mar 2012 / Jan 2014
7914-K3G	1x Xeon E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5676	2x 8 GB	M5110 512MB Flash	8x 2.5" HS / 8	Optional	4x GbE	Multiburner	2x 550W	Mar 2012 / Apr 2014

IBM System x3620 M3 (withdrawn)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
7376-A2x	1x Xeon E5603 1.60 GHz 4C 4 MB 1066 MHz	81Y6703	1x 2 GB	Integrated SATA	4x 3.5" SS	Open	2x GbE	Optional	1x 460 W	Feb 2011/Mar 2013
7376-B2x	1x Xeon E5607 2.26 GHz 4C 8 MB 1066 MHz	81Y6705	1x 4 GB	M1015	8x 3.5" HS	Open	2x GbE	Optional	1x 460 W	Feb 2011/Mar 2013
7376-44x	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	1x 4 GB	M1015	8x 3.5" HS	Open	2x GbE	Optional	1x 460 W	Feb 2011/Mar 2013
7376-D2x	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6707	1x 4 GB	M5014	8x 3.5" HS	Open	2x GbE	Optional	1x 460 W	Feb 2011/Mar 2013
7376-64x	1x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	69Y1229	1x 4 GB	M5015 + Battery	8x 3.5" HS	Open	2x GbE	Optional	1x 675 W	Feb 2011/Mar 2013
7376-46x[a]	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	1x 8 GB	M5015 + Battery	8x 3.5" HS	1x 500 GB 7200 3.5" HS SATA II	2x GbE	Multiburner	1x 460 W	Jan 2012/Mar 2013

a. Model 46x has Microsoft Windows Storage Server 2008 R2 Standard Edition preinstalled.

Components	Specification
Form factor	**2U rack**.
Processor	**Up to two six-core** (up to 3.06 GHz) or quad-core (up to 3.2 GHz) **Intel Xeon 5600 series processors** with QuickPath Interconnect technology up to 6.4 GT/s. Up to 1333 MHz of memory speed. Supports basic quad-core and dual-core Intel Xeon 5500 series processors either in standard models or CTO.
Memory cache	Up to 12 MB L3 for Intel Xeon 5600 series processors. Up to 4 MB L3 for Intel Xeon 5500 series processors.
Chip set	Intel 5500.
Memory DIMM slots	**12 DDR3 DIMM slots** (six per installed processor).
Memory capacity	**Up to 192 GB** with 16 GB DDR3 RDIMMs and 12 populated DIMM slots (up to 96 GB with 6 DIMMs per processor).
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), and memory mirroring.
Disk drive bays	**Four 3.5" simple-swap** SATA HDD bays; or **eight 3.5" hot-swap** SAS/SATA HDD bays (model dependent).
Maximum internal storage	Up to 4.8 TB with 600 GB 3.5" SAS HDDs or **up to 24.0 TB** with 3 TB 3.5" NL SAS HDDs. Intermix of SAS and SATA is supported.
RAID support	Software RAID 0 or 1 with integrated 6-port SATA controller. RAID 0, 1, or 1E with an optional ServeRAID M1015 controller. RAID 0, 1, 5, 10, or 50 with optional ServeRAID M5014 or M5015 controller. Optional upgrade to RAID 5 is available for M1015. Optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Optical drive bays	Optional. Optical Disk Drive (ODD) Enablement Kit is required to support internal optical drive. Support for multiburner.
Tape drive bays	Optional. Tape Enablement Kit is required to support internal tape drive.
Network interfaces	**Integrated two-port Gigabit Ethernet** using an **Intel 82575** chip set.
PCI expansion slots	**Three PCI Express 2.0 slots**: ► One PCI Express 2.0 x16 (x4 wired) (dedicated to ServeRAID BR10il v2) ► One PCI Express 2.0 x16 (x8 wired), full height, half length ► One PCI Express 2.0 x8 (x8 wired), full height, half length
External ports	Front: Two USB 2.0 ports. Rear: Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, two RJ-45 Gigabit Ethernet network ports. Internal: USB port for embedded hypervisor. USB port for USB tape drive.
Cooling	IBM Calibrated Vectored Cooling with four counter-rotating non-hot-swap fans with N+1 redundancy.
Power supply	Up to **2 redundant hot-swap** 460 W ac or 675 W or 675 W high-efficiency ac power supplies with 90%+ efficiency.
Hot-swap parts	Hard disk drives and power supplies.
Systems management	UEFI, IBM Integrated Management Module (IMM), Predictive Failure Analysis, Integrated Service Processor, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide. Optional **Virtual Media Key** for remote presence (graphics, keyboard, mouse, and virtual media).
Video	Matrox G200eV with 16 MB of memory integrated into the IMM. Maximum resolution is 1280x1024 at 75 Hz with 16M colors.
Security features	Power-on password and administrator password.
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 and VMware ESXi.

Components	Specification
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty with 9x5 next-business-day response time.
Service and support	Optional service upgrades are available through IBM ServicePacs: 24x7 with next business day or 4 hours on-site repair, 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: 488 mm (19.2 in), depth: 749 mm (29.5 in), height: 87 mm (3.4 in).
Weight	Minimum configuration: 16.30 kg (35.94 lb); maximum: 22.45 kg (49.50 lb).

HDD LEDs USB 2.0 ports Hot-swap 3.5-inch disk drives Bay for optical or tape drive Power button Status LEDs Hot-swap power supplies Serial port Video port 2x USB ports Mgmt Eth port 2x GbE ports 2x PCIe 2.0 x8 slots

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1435	4 GB (1x 4 GB, 2Rx4, 1.5 V) PC3-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1406	4 GB (1x 4 GB, 1Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1436	8 GB (1x 8 GB, 2Rx4, 1.5 V) PC3-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1397	8 GB (1x 8 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC 1333 MHz LP RDIMM
49Y1400	16 GB (1x 16 GB, 4Rx4, 1.35 V) PC3L-8500 CL7 ECC DDR3 1066 MHz LP RDIMM
42D0767	IBM 2 TB 7.2 K 6 Gbps NL SAS 3.5" HS HDD
81Y9758	IBM 3TB 7.2K 6Gbps NL SAS 3.5" HS HDD
44W2244	IBM 600 GB 15 K 6 Gbps SAS 3.5" Hot-Swap HDD
81Y9778	IBM 3TB 7.2K 6Gbps NL SATA 3.5" SS HDD
69Y1360	IBM x3620 M3 Software RAID to Hardware RAID Upgrade Kit
69Y0798	IBM x3620 M3 Tape Enablement Kit
69Y0797	IBM x3620 M3 ODD Enablement Kit
46M0902	UltraSlim Enhanced SATA Multi-Burner
69Y1213	675W Redundant Power Supply
81Y6754	IBM 460 W Redundant AC Power Supply
46C7527	IBM Virtual Media Key for Entry Systems

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3620 M3*:
http://www.redbooks.ibm.com/abstracts/tips0806.html?Open

IBM System x3620 M3 Express Models (withdrawn)

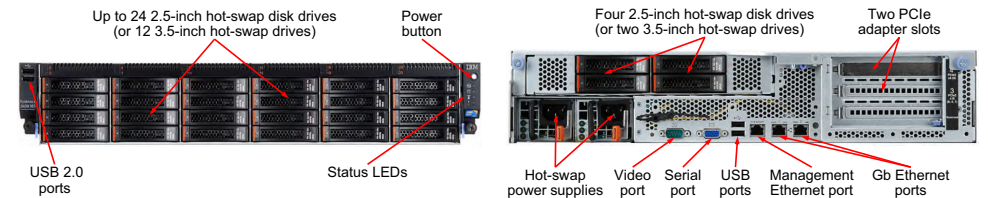| Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
7376-K6G	1x Xeon E5620 2.4 GHz 4C 12 MB 1066 MHz	69Y1225	1x 4 GB	M5014	8x 3.5" HS	Optional	2x GbE	Multiburner	1x 460 W	Mar 2011/Mar 2012
Russia/Commonwealth of Independent States (CIS)										
7376-K7G	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6704	1x 4 GB	M5015 + Battery	8x 3.5" HS	Optional	2x GbE	Multiburner	1x 675 W	Apr 2011/Jul 2012
7376-K8G	1x Xeon E5620 2.4 GHz 4C 12 MB 1066 MHz	69Y1225	1x 4 GB	M5015 + Battery	8x 3.5" HS	Optional	2x GbE	Multiburner	1x 675 W	Apr 2011/Jul 2012
7376-E2U	1x Xeon E5620 2.4 GHz 4C 12 MB 1066 MHz	69Y1225	3x 2 GB	M5014	8x 3.5" HS	Open	2x GbE	Optional	1x 675 W	Jun 2010/Aug 2012
7376-E3U	1x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	69Y1229	3x 4 GB	M5015 + Battery	8x 3.5" HS	Open	2x GbE	Optional	2x 675 W	Jun 2010/Aug 2012
7376-E4U	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6704	1x 4 GB	M1015	8x 3.5" HS	Open	2x GbE	Multiburner	1x 460 W	Feb 2011/Aug 2012

IBM System x3630 M3 (Withdrawn)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
7377-A2x	1x Xeon E5603 1.60 GHz 4C 4 MB 1066 MHz	81Y6703	1x 4 GB	M1015	12x 3.5" HS/14	Optional	2x GbE	None	1x 675 W	Feb 2011 / Dec 2013
7377-B2x	1x Xeon E5607 2.26 GHz 4C 8 MB 1066 MHz	81Y6705	1x 4 GB	M1015	12x 3.5" HS/14	Optional	2x GbE	None	1x 675 W	Feb 2011 / Dec 2013
7377-C2x	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	1x 4 GB	M5014	24x 2.5" HS/28	Optional	2x GbE	None	1x 675 W	Feb 2011 / Dec 2013
7377-D2x	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6707	1x 4 GB	M5014	12x 3.5" HS/14	Optional	2x GbE	None	1x 675 W	Feb 2011 / Dec 2013
7377-F2x	1x Xeon E5649 2.53 GHz 6C 12 MB 1333 MHz	81Y6708	1x 4 GB	M5014	24x 2.5" HS/28	Optional	2x GbE	None	1x 675 W	Feb 2011 / Dec 2013
7377-64x	1x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	69Y1229	1x 4 GB	M5015 + Battery	12x 3.5" HS/14	Optional	2x GbE	None	1x 675 W	Feb 2011 / Dec 2013
7377-G2x	1x Xeon X5675 3.06 GHz 6C 12 MB 1333 MHz	81Y6711	1x 4 GB	M5015 + Battery	24x 2.5" HS/28	Optional	2x GbE	None	1x 675 W	Feb 2011 / Dec 2013
7377-C4x[a]	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	1x 8 GB	M5015 + Battery	24x 2.5" HS/28	1x 300 GB 10K 2.5" HS HDD	2x GbE	None	2x 675 W HE	Jan 2012 / Dec 2013

a. Model C4x has Microsoft Windows Storage Server 2008 R2 Standard Edition preinstalled.

Components	Specification
Form factor	**2U rack**.
Processor	**Up to two six-core** (up to 3.06 GHz) or quad-core (up to 3.2 GHz) **Intel Xeon 5600 series processors** with QuickPath Interconnect technology up to 6.4 GT/s, and up to 1333 MHz of memory speed. Up to two four-core (up to 2.26 GHz) or dual-core (2.0 GHz) Intel Xeon 5500 series processors.
Memory cache	Up to 12 MB L3 for Intel Xeon 5600 series processors. Up to 4 MB L3 for Intel Xeon 5500 series processors.
Chip set	Intel 5500.
Memory DIMM slots	**12 DDR3 DIMM slots** (6 per installed processor).
Memory capacity	**Up to 192 GB** with 16 GB DDR3 RDIMMs and 12 populated DIMM slots (up to 96 GB with six DIMMs per processor).
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), and memory mirroring.
Disk drive bays	Up to **fourteen 3.5-inch hot-swap** SAS or SATA HDDs, or up to **twenty-eight 2.5-inch hot-swap** SAS or SATA HDDs.
Maximum internal storage	Up to 16.8 TB with 600 GB 3.5" SAS HDDs, or up to 42 TB with 3TB 3.5" NL SATA or NL SAS HDDs. Intermix of SAS and SATA is supported.
RAID support	**RAID 0, 1, or 1E with ServeRAID M1015**. **Optional upgrade to RAID 5**. RAID 0, 1, 5, 10, or 50 with ServeRAID M5014 and M5015. Optional upgrade to RAID 6 and 60.
Optical drive bays	None internal. Use an external drive.
Tape drive bays	None internal. Use an external drive.
Network interfaces	**Integrated two-port Gigabit Ethernet** using an **Intel 82575** chip set.
PCI expansion slots	**Two PCI Express 2.0 slots**: ▶ One PCI Express 2.0 x16 (x8 wired), full height, half length ▶ One PCI Express 2.0 x8 (x8 wired) (for the standard ServeRAID controller)
External ports	Front: Two USB 2.0 ports. Rear: Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, two RJ-45 Gigabit Ethernet network ports. Internal: One internal USB port for embedded hypervisor.
Cooling	IBM Calibrated Vectored Cooling with four counter-rotating non-hot-swap fans with N+1 redundancy.
Power supply	Up to **two redundant hot-swap** 675 W ac or 675 W high-efficiency (HE) ac power supplies with 90%+ efficiency.
Hot-swap parts	Hard disk drives and power supplies.
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, mouse, and media).
Security features	Power-on password and administrator password.
Video	Matrox G200eV with 16 MB of memory integrated into the IMM. Maximum resolution is 1280x1024 at 75 Hz with 16M colors.
Operating systems supported	Microsoft Windows Server 2003/2003 R2, 2008/2008R2, Microsoft Windows Small Business Server, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4/4.1 and VMware ESXi 4/4.1.
Preinstalled	Model C4x has Microsoft Windows Storage Server 2008 R2 Standard Edition preinstalled.

Components	Specification
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty with 9x5 next-business-day response time.
Service and support	Optional service upgrades are available through IBM ServicePacs: 24x7 with next business day or 4 hours on-site repair, 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: 488 mm (19.2 in), depth: 749 mm (29.5 in), height: 87 mm (3.4 in).
Weight	Minimum configuration: 16.20 kg (35.68 lb), maximum: 29.20 kg (64.32 lb).

Up to 24 2.5-inch hot-swap disk drives (or 12 3.5-inch hot-swap drives) — Power button — Four 2.5-inch hot-swap disk drives (or two 3.5-inch hot-swap drives) — Two PCIe adapter slots — USB 2.0 ports — Status LEDs — Hot-swap power supplies — Video port — Serial port — USB ports — Management Ethernet port — Gb Ethernet ports

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1435	4 GB (1x 4 GB, 2Rx4, 1.5 V) PC3-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1406	4 GB (1x 4 GB, 1Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1397	8 GB (1x 8 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC 1333 MHz LP RDIMM
49Y1436	8 GB (1x 8 GB, 2Rx4, 1.5 V) PC3-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1400	16 GB (1x 16 GB, 4Rx4, 1.35 V) PC3L-8500 CL7 ECC DDR3 1066 MHz LP RDIMM
69Y1527	2.5-inch Hot Swap Cage Assembly, Rear, 4x 2.5"
69Y1511	3.5-inch Hot Swap Cage Assembly, Rear, 2x 3.5"
81Y9758	IBM 3TB 7.2K 6Gbps NL SAS 3.5" HS HDD
81Y9774	IBM 3TB 7.2K 6Gbps NL SATA 3.5" HS HDD
49Y2003	IBM 600 GB 10 K 6 Gbps SAS 2.5" SFF Slim-HS HDD
69Y1213	675 W Redundant Power Supply
46C7527	IBM Virtual Media Key for Entry Systems
41Y8287	IBM USB Memory Key for VMware ESXi 4.1

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3630 M3*:
http://www.redbooks.ibm.com/abstracts/tips0807.html?0pen

IBM System x3630 M3 Express Models (withdrawn)

Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
North America (NA)										
7377-E1U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	6x 2 GB	M5015 + Battery	12x 3.5-inch	4x 1 TB	2x GbE	No	2x 675 W	Nov 2010 / Dec 2012
7377-E2U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	5x 4 GB	M5015 + Battery	12x 3.5-inch	6x 1 TB	2x GbE	No	2x 675 W	Nov 2010 / Dec 2012
Latin America (LA)										
7377-E1U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	6x 2 GB	M5015 + Battery	12x 3.5-inch	4x 1 TB	2x GbE	No	2x 675 W	Nov 2010 / Dec 2012
7377-E2U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	6x 4 GB	M5015 + Battery	12x 3.5-inch	6x 1 TB	2x GbE	No	2x 675 W	Nov 2010 / Dec 2012
Russia/Commonwealth of Independent States (CIS)										
7377-K1G	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6704	1x 4 GB	M5015 + Battery	12x 3.5-inch	Optional	2x GbE	Multiburner	1x 675 W	Apr 2011 / Jul 2012
7377-K2G	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	1x 4 GB	M5015 + Battery	12x 3.5-inch	Optional	2x GbE	Multiburner	1x 675 W	May 2011 / Jul 2012
7377-E1U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	6x 2 GB	M5015 + Battery	12x 3.5-inch	4x 1 TB	2x GbE	No	2x 675 W	Nov 2010 / Dec 2012
7377-E2U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	69Y1225	5x 4 GB	M5015 + Battery	12x 3.5-inch	6x 1 TB	2x GbE	No	2x 675 W	Nov 2010 / Dec 2012

IBM System x3650 M3 (withdrawn)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
7945-D2x	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4020	1x 4 GB	M1015	8 / 16 max	Open	2x GbE	Optional	1x 675 W	Mar 2010 / Mar 2014
7945-12x	1x Xeon E5603 1.60 GHz 4C 4 MB 1066 MHz	81Y6538	1x 4 GB	BR10il v2	4 / 16 max	Open	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7945-22x	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6539	1x 4 GB	M1015	8 / 16 max	Open	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7945-32x	1x Xeon E5607 2.26 GHz 4C 8 MB 1066 MHz	81Y6540	1x 4 GB	M1015	8 / 16 max	Open	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7945-D4x	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4020	1x 4 GB	M1015	8 / 16 max	Open	2x GbE	Optional	1x 460 W	Feb 2011 / Mar 2014
7945-H4x	1x Xeon L5640 2.26 GHz 6C 12 MB 1333 MHz	59Y4019	1x 4 GB	M5015 + Battery	8 / 16 max	Open	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7945-52x	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6537	1x 4 GB	M5014	8 / 16 max	Open	2x GbE	Optional	1x 460 W	Feb 2011 / Mar 2014
7945-54x	2x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	Standard	2x 4 GB	M5014	8 / 16 max	Open	2x GbE	Optional	2x 675 W HE	Feb 2011 / Mar 2014
7945-62x	1x Xeon E5649 2.53 GHz 6C 12 MB 1333 MHz	81Y6542	1x 4 GB	M5014	8 / 16 max	Open	2x GbE	Optional	1x 460 W	Feb 2011 / Dec 2013
7945-J4x	1x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	59Y4023	1x 4 GB	M5015 + Battery	8 / 16 max	Open	2x GbE	Optional	1x 675 W	Feb 2011 / Dec 2013
7945-L4x	1x Xeon X5660 2.80 GHz 6C 12 MB 1333 MHz	59Y4024	1x 4 GB	M5015 + Battery	8 / 16 max	Open	2x GbE	Optional	1x 675 W	Feb 2011 / Dec 2013
7945-72x	1x Xeon X5675 3.06 GHz 6C 12 MB 1333 MHz	81Y6544	1x 4 GB	M5015 + Battery	8 / 16 max	Open	2x GbE	Optional	1x 675 W HE	Feb 2011 / Dec 2013
7945-82x	1x Xeon X5690 3.46 GHz 6C 12 MB 1333 MHz	81Y6546	1x 4 GB	M5015 + Battery	8 / 16 max	Open	2x GbE	Optional	1x 675 W HE	Feb 2011 / Dec 2013

Components	Specification
Form factor	**2U rack**.
Processor	**Up to two six-core** (up to 3.46 GHz) or quad-core (up to 3.6 GHz) **Intel Xeon 5600 series processors** with QuickPath Interconnect technology up to 6.4 GT/s. Up to 1333 MHz of memory speed.
Memory cache	Up to 12 MB L3 for Xeon 5600 processors.
Chip set	Intel 5520.
Memory	**Up to 18 DIMM sockets** (9 DIMMs per processor). **Up to 288 GB** with 16 GB DDR3 RDIMMs and 18 populated DIMM slots (up to 144 GB with 9 DIMMs per processor), or up to 48 GB with 4 GB DDR3 UDIMMs and 12 populated DIMM slots (up to 24 GB with 6 DIMMs per processor).
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), memory mirroring, and memory sparing.
Disk drive bays	Up to **16 2.5" hot-swap SAS/SATA HDDs** or **16 2.5" solid-state drives**.
Maximum internal storage	**Up to 9.6 TB with 600 GB SAS HDDs**, up to 8.0 TB with 500 GB SATA HDDs, or up to 800 GB with 50 GB SSD HDDs. Intermix of SAS, SATA, SSD is supported.
RAID support	RAID 0, 1, or 1E with ServeRAID-BR10il v2 or M1015; RAID 0, 1, 5, 10, or 50 with M5014 and M5015. Optional upgrade to RAID 5 is available for M1015. Optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Optical drive bays	One with support for DVD-ROM or multiburner. Separate bay.
Tape drive bays	Optional Tape Enablement Kit is available to support one DDS5, DDS6, or RDX internal tape drive. If used, the max number of HDD bays is limited to 8.
Network interfaces	**Integrated two ports, plus two ports on optional Gigabit Ethernet with Ethernet Daughter Card** (does not use a PCIe slot). **Broadcom 5709** controller. Supports TOE, WOL, 802.1Q VLAN tagging, and teaming.
PCI expansion slots	**Up to five PCI slots** (up to four available, one slot is dedicated to RAID controller), depending on the riser cards used (three riser cards are available: 2x PCI-E x8 Gen 2, 1x PCI-E x16 Gen 2, and 2x PCI-X 64 bit/133 MHz). Up to two riser cards are supported.
External ports	Two USB 2.0 and one DB-15 video on front. Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, up to four RJ-45 network ports (two standard, two optional) on rear. One internal USB port for embedded hypervisor.
Cooling	IBM Calibrated Vectored Cooling with three counter-rotating hot swap fans with N+1 redundancy. Altimeter controls fan speed based on atmospheric pressure.
Power supply	Up to **two redundant hot-swap** 460 W ac or 675 W ac or 675 W high-efficiency (HE) ac power supplies with 90%+ efficiency. 675 W -48 V DC models are available by using CTO.
Systems management	UEFI, IBM integrated management module (IMM), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide. Optional **Virtual Media Key** for remote presence (graphics, keyboard, mouse, and virtual media).
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eV with 16 MB of memory integrated into the IMM. Maximum resolution is 1280x1024 at 75 Hz with 16M colors.

Components	Specification
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 4.1 and VMware ESXi 4.1 embedded hypervisor, Sun Solaris 10.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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	Height: 85 mm (3.36 in); width: 443 mm (17.5 in); depth: 698 mm (27.5 in).
Weight	Minimum configuration: 21.1 kg (46.5 lb); Max. configuration: 29.6 kg (65 lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1406	4 GB (1x 4GB, 1Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1397	8 GB (1x 8 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC 1333 MHz LP RDIMM
49Y1563	16 GB (1x 16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y2003	IBM 600 GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
42D0637	IBM 300 GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
42D0677	IBM 146 GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD
69Y4236	IBM System x3650 M3 Hot-Swap SAS/SATA 4 Pac HDD Upgrade Option
59Y3825	Hot-swap SAS SATA 8 Pack HDD Enablement Option (with 6 Gb/sec expander)
69Y5034	Hot-swap SAS SATA 8 Pack HDD Enablement Kit (with two ServeRAID M5015 adapters)
59Y3806	IBM System x3650 M3 Tape Enablement Kit
46M1073	PCI Express (1x16) Riser Card
46M1075	IBM 675 W Redundant Power Supply
81Y6557	IBM 675W High Efficiency Redundant AC Power Supply
46C7526	IBM Virtual Media Key

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3650 M3*: http://www.redbooks.ibm.com/abstracts/tips0805.html?Open

IBM System x3650 M3 with SAP preinstalled (withdrawn)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Preinstalled	Announced Withdrawn
7945-JCx	2x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	Standard	6x 4 GB	M5015 + Battery	8 / 16	7x 300 GB SAS + 1x 500 GB SATA	2x GbE	Multiburner	2x 675 HE	SAP Discovery System v4[a]	May 2010 / Sep 2012
7945-J6x	2x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz		6x 4 GB	M5015 + Battery	8 / 16	7x 300 GB SAS + 1x 500 GB SATA	2x GbE	Multiburner	2x 675 HE	SAP Discovery System v4[b]	May 2010 / Sep 2012

a. Jxx models include SAP Discovery System v4 that has SUSE Linux ES SAP Business All-in-one installed.
b. Jxx models include SAP Discovery System v4 that has SUSE Linux ES SAP Business All-in-one installed.

Components	Specification
Form factor	**2U rack.**
Processor	**Up to two six-core** (up to 3.46 GHz) or quad-core (up to 3.6 GHz) **Intel Xeon 5600 series processors** with QuickPath Interconnect technology up to 6.4 GT/s. Up to 1333 MHz of memory speed.
Memory cache	Up to 12 MB L3 for Xeon 5600 processors.
Chip set	Intel 5520.
Memory	**Up to 18 DIMM sockets** (9 DIMMs per processor). **Up to 288 GB** with 16 GB DDR3 RDIMMs and 18 populated DIMM slots (up to 144 GB with 9 DIMMs per processor), or up to 48 GB with 4 GB DDR3 UDIMMs and 12 populated DIMM slots (up to 24 GB with 6 DIMMs per processor).
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), memory mirroring, and memory sparing.
Disk drive bays	Up to **16 2.5" hot-swap SAS/SATA HDDs** or **16 2.5" solid-state drives**.
Maximum internal storage	**Up to 9.6 TB with 600 GB SAS HDDs**, or up to 8.0 TB with 500 GB SATA HDDs, or up to 800 GB with 50 GB SSD HDDs. Intermix of SAS, SATA, and SSD is supported.
RAID support	RAID 0, 1, or 1E with ServeRAID-BR10il v2 or M1015; RAID 0, 1, 5, 10, or 50 with M5014 and M5015. Optional upgrade to RAID 5 is available for M1015. Optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Optical drive bays	One with support for DVD-ROM or multiburner. Separate bay.
Tape drive bays	Optional Tape Enablement Kit is available to support one DDS5, DDS6, or RDX internal tape drive. If used, the maximum number of HDD bays is limited to 8.
Network interfaces	**Integrated two ports, plus two ports on optional Gigabit Ethernet with Ethernet Daughter Card** (does not use PCIe slot). **Broadcom 5709** controller. Supports TOE, WOL, 802.1Q VLAN tagging, teaming.
PCI expansion slots	**Up to 5 PCI slots** (up to 4 slots available; one slot is dedicated to the RAID controller) depending on the riser cards used (three riser cards are available: 2x PCI-E x8 Gen 2, 1x PCI-E x16 Gen 2, and 2x PCI-X 64 bit/133 MHz). Up to two riser cards are supported.
External ports	Two USB 2.0 and one DB-15 video on front. Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, up to 4 RJ-45 network ports (two standard, two optional) on rear. One internal USB port for embedded hypervisor.
Cooling	IBM Calibrated Vectored Cooling with three counter-rotating hot swap fans with N+1 redundancy. Altimeter is to control fan speed based on atmospheric pressure.
Power supply	Up to **two redundant hot-swap** 460 W ac or 675 W ac or 675 W high-efficiency (HE) ac power supplies with 90%+ efficiency. 675 W -48 V DC models are available by using CTO.
Systems management	UEFI, IBM integrated management module, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide. Optional **Virtual Media Key** for remote presence (graphics, keyboard, mouse, and virtual media).
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eV with 16 MB of 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 4.1 and VMware ESXi 4.1 embedded hypervisor, Sun Solaris 10.
Preinstalled	Jxx models include SAP Discovery System v4 that has SUSE Linux ES SAP Business All-in-one preinstalled.

Components	Specification
Limited warranty	Three-year customer-replaceable unit and on-site 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 hours 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	Height: 85 mm (3.36 in); width: 443 mm (17.5 in); depth: 698 mm (27.5 in).
Weight	Minimum configuration: 21.1 kg (46.5 lb); Max configuration: 29.6 kg (65 lb).

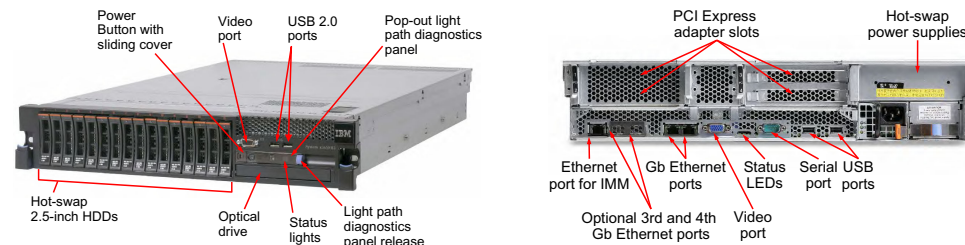**Popular and system-unique options (see the model table for processor options):**

Part	Description
49Y1406	4 GB (1x 4GB, 1Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1397	8 GB (1x 8 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC 1333 MHz LP RDIMM
49Y1563	16 GB (1x 16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y2003	IBM 600 GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
42D0637	IBM 300 GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
42D0677	IBM 146 GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD
69Y4236	IBM System x3650 M3 Hot-Swap SAS/SATA 4 Pac HDD Upgrade Option
59Y3825	Hot-swap SAS SATA 8 Pack HDD Enablement Option (with 6 Gb/sec expander)
69Y5034	Hot-swap SAS SATA 8 Pack HDD Enablement Kit (with two ServeRAID M5015 adapters)
59Y3806	IBM System x3650 M3 Tape Enablement Kit
46M1073	PCI Express (1x16) Riser Card
46M1075	IBM 675 W Redundant Power Supply
81Y6557	IBM 675W High Efficiency Redundant AC Power Supply
46C7526	IBM Virtual Media Key

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3650 M3*:
http://www.redbooks.ibm.com/abstracts/tips0805.html?0pen

IBM System x3650 M3 HF (withdrawn)

Model[1]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
5454-12x	2x Xeon X5698 4.40 GHz 2C 12 MB 1333 MHz 130 W	Standard	2x 8 GB	M5015 + Battery	4 / 4	Open	4x GbE	Multiburner	2x 675 W	Sep 2011 / Sep 2012

Components	Specification
Form factor	**2U rack**.
Processor	**Two dual-core 4.4 GHz (high frequency) Intel Xeon 5698 processors** with QuickPath Interconnect technology at 6.4 GT/s and 1333 MHz of memory speed.
Memory cache	12 MB L3 cache.
Chip set	Intel 5520.
Memory	**Up to 18 DIMM sockets** (9 DIMMs per processor). **Up to 144 GB with 8 GB DDR3 RDIMMs** and 18 populated DIMM slots.
Memory protection	ECC, Chipkill (for x4-based memory DIMMs), memory mirroring, and memory sparing.
Disk drive bays	**Up to four 2.5" hot-swap SAS HDDs**.
Maximum internal storage	**Up to 9.6 TB with 600- GB SAS HDDs**.
RAID support	RAID 0, 1, or 1E with ServeRAID-BR10il v2 or M1015; RAID 0, 1, 5, 10, or 50 with M5014 and M5015. Optional upgrade to RAID 5 is available for M1015. Optional upgrade to RAID 6 and 60 is available for M5014 and M5015.
Optical drive bays	One multiburner. Separate bay.
Tape drive bays	Not supported.
Network interfaces	**Integrated two ports, plus two ports on standard Gigabit Ethernet with Ethernet Daughter Card** (does not use a PCIe slot). **Broadcom 5709** controller. Supports TOE, WOL, 802.1Q VLAN tagging, teaming.
PCI expansion slots	**Up to 5 PCI slots** (up to four slots available; one slot is dedicated to RAID controller), depending on the riser cards used (three riser cards are available: 2x PCI-E x8 Gen 2, 1x PCI-E x16 Gen 2, and 2x PCI-X 64 bit/133 MHz). Up to two riser cards are supported.
External ports	Two USB 2.0 and one DB-15 video on front. Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four Gb Ethernet ports standard on rear. One internal USB port for embedded hypervisor.
Cooling	IBM Calibrated Vectored Cooling with three counter-rotating hot swap fans with N+1 redundancy. Altimeter is to control fan speed based on atmospheric pressure.
Power supply	**Two redundant hot-swap** 675 W ac. 675 W high-efficiency (HE) ac power supplies with 90%+ efficiency available by using CTO.
Systems management	UEFI, IBM integrated management module, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide. Optional Virtual Media Key for remote presence (graphics, keyboard, mouse, and virtual media).
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Matrox G200eV with 16 MB of 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 4.1 and VMware ESXi 4.1 embedded hypervisor, Sun Solaris 10.
Limited warranty	Three-year customer-replaceable unit and on-site 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 hours 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	Height: 85 mm (3.36 in); width: 443 mm (17.5 in); depth: 698 mm (27.5 in).
Weight	Minimum configuration: 21.1 kg (46.5 lb); Max configuration: 29.6 kg (65 lb).

Power Button with sliding cover · Video port · USB 2.0 ports · Pop-out light path diagnostics panel · PCI Express adapter slots · Hot-swap power supplies · Hot-swap 2.5-inch HDDs · Optical drive · Status lights · Light path diagnostics panel release · Ethernet port for IMM · Optional 3rd and 4th Gb Ethernet ports · Gb Ethernet ports · Status LEDs · Serial port · USB ports · Video port

Popular and system-unique options:

Part	Description
49Y1406	4 GB (1x 4GB, 1Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz LP RDIMM
49Y1406	4 GB (1x 4GB, 2Rx8, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y1397	8 GB (1x 8 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC 1333 MHz LP RDIMM
42D0677	IBM 146GB 15K 6Gbps SAS 2.5" SFF Slim-HS HDD
49Y2003	IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
46M1073	PCI Express (1x16) Riser Card
46M1075	IBM 675W Redundant AC Power Supply
46C7526	IBM Virtual Media Key

Limited subset of supported options: This high-frequency (HF) model supports only a limited subset of the usual supported options for the x3650 M3:
► Maximum DIMM size is 8 GB. 16 GB DIMMs are not supported.
► The model offers a maximum of four 2.5-inch drive bays. The HDD upgrade options (69Y4236, 59Y3825, and 69Y5034) are not supported.
► The 600 GB and 146 GB 2.5-inch SAS drives are supported. Other drives are not supported.
► The x3650 M3 Tape Enablement Kit (59Y3806) is not supported.

For a list of all supported options, see the *System x3650 M3 HF (5454)* configuration and option guide at:
http://www.ibm.com/systems/xbc/cog/x3650m3_5454/x3650m3_5454aag.html

IBM System x3650 M3 Express Models (withdrawn)

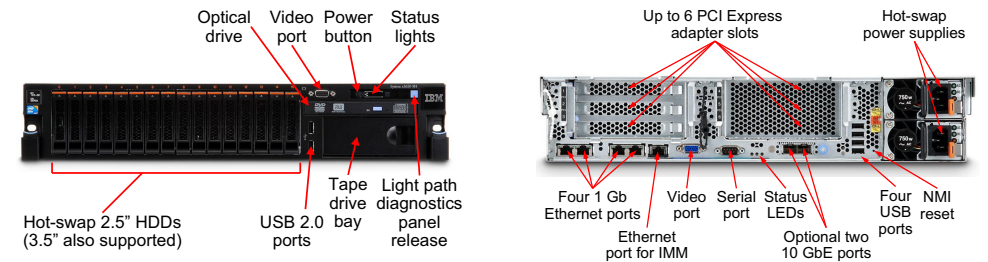| Model[1,2]	Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Optical	Power	Announced / Withdrawn
Europe Integrated Operating Team (IOT)										
7945-K3G	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4020	2x 4 GB	M5014	8 / 16	Open	2x GbE	Multiburner	1x 675 W	Apr 2010 / Oct 2012
7945-K4G	2x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	Included	4x 4 GB	M5015	8 / 16	3x 146 GB 10K SAS	2x GbE	Multiburner	2x 675 W	Apr 2010 / Nov 2012
7945-KEG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6539	1x 4 GB	M1015	8 / 16	Open	2x GbE	Multiburner	1x 460 W	Mar 2011 / Oct 2012
7945-KFG	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6537	1x 4 GB	M5014	8 / 16	2x 146 GB	2x GbE	Multiburner	2x 460 W	Mar 2011 / Jan 2012
7945-KLG	1x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	59Y4023	3x 4 GB	M5015 + Battery	8 / 16	Open	2x GbE	Multiburner	1x 675 W	Jul 2011 / Oct 2012
7945-KMG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4020	1x 4 GB	M5014	8 / 16	Open	2x GbE	Multiburner	1x 460 W	Jul 2011 / Oct 2012
7945-KNG	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6537	1x 4 GB	M5014	8 / 16	Open	2x GbE	Multiburner	1x 460 W	Sep 2011 / Nov 2012
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)										
7945-K3G	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4020	2x 4 GB	M5014	8 / 16	Open	2x GbE	Multiburner	1x 675 W	Apr 2010 / Oct 2012
7945-K4G	2x Xeon X5650 2.66 GHz 6C 12 MB 1333 MHz	Included	4x 4 GB	M5015 + Battery	8 / 16	3x 146 GB 10K SAS	2x GbE	Multiburner	2x 675 W	Apr 2010 / Nov 2012
7945-K7G	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4020	2x 4 GB	M5014	8 / 16	3x 146 GB 10K SAS	2x GbE	Multiburner	2x 675 W	Jul 2010 / Jan 2012
7945-KEG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6539	1x 4 GB	M1015	8 / 16	Open	2x GbE	Multiburner	1x 460 W	Mar 2011 / Oct 2012
7945-KFG	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6537	1x 4 GB	M5014	8 / 16	2x 146 GB	2x GbE	Multiburner	2x 460 W	Mar 2011 / Jan 2012
7945-KKG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6539	1x 4 GB	M1015	8 / 16	2x 500 GB	2x GbE	Multiburner	1x 460 W	Jul 2011 / Mar 2012
7945-KPG	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6537	1x 4 GB	M5015 + Battery	8 / 16	Open	2x GbE	Multiburner	1x 460 W	Oct 2012 / Oct 2012
Russia/Commonwealth of Independent States (CIS)										
7945-KGG	1x Xeon E5606 2.13 GHz 4C 8 MB 1066 MHz	81Y6539	1x 4 GB	M5015 + Battery	8 / 16	Open	4x GbE	Multiburner	1x 675 W	Apr 2011 / Oct 2012
7945-KHG	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4020	2x 4 GB	M5015 + Battery	8 / 16	Open	4x GbE	Multiburner	1x 675 W	Apr 2011 / Oct 2012
7945-KJG	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6537	2x 4GB	M5015 + Battery	8 / 16	Open	4x GbE	Multiburner	1x 675 W	Apr 2011 / Oct 2012
Latin America (LA)										
7945-EAU	1x Xeon E5645 2.40 GHz 6C 12 MB 1333 MHz	81Y6537	1x 4 GB	M1015	8 / 16	1x 146 GB	2x GbE	Multiburner	1x 460 W	Jun 2011
7945-EBU	1x Xeon E5649 2.53 GHz 6C 12 MB 1333 MHz	81Y6542	2x 8 GB	M5014	16 / 16	1x 300 GB	2x GbE	Multiburner	2x 460 W	Jun 2011
North America (NA)										
7945-E4U	1x Xeon E5607 2.26 GHz 4C 8 MB 1066 MHz	81Y6540	3x 2 GB	M1015	8 / 16	Open	2x GbE	Multiburner	1x 460 W	Feb 2011 / Sep 2012
7945-E5U	1x Xeon E5620 2.40 GHz 4C 12 MB 1066 MHz	59Y4020	3x 2 GB	M1015	8 / 16	Open	2x GbE	Multiburner	1x 460 W	Feb 2011 / Sep 2012
7945-E6U	1x Xeon E5649 2.53 GHz 6C 12 MB 1333 MHz	81Y6542	3x 4 GB	M1015	8 / 16	Open	2x GbE	Multiburner	2x 460 W	Feb 2011 / Sep 2012
7945-E7U	2x Xeon X5675 3.06 GHz 6C 12 MB 1333 MHz	Included	6x 4 GB	M5015 + Battery	8 / 16	Open	2x GbE	Multiburner	2x 675 W	Feb 2011 / Sep 2012
7945-E8U	1x Xeon E5649 2.53 GHz 6C 12 MB 1333 MHz	81Y6542	3x 4 GB	M5015	16 / 16	Open	2x GbE	Multiburner	1x 460 W	Apr 2011 / Sep 2012

IBM System x3650 M4 (E5-2600) (Withdrawn)

Model[1]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Slots	Optical	Power	Announced / Withdrawn
7915-GSx (SAP[a])	1x E5-2650 8C 2.0GHz 20MB 1600MHz 95W	69Y5329	4x 8 GB	M5110e 1GB flash	8 / 16 2.5" HS	1x 1TB NL SAS 7x 600GB SAS VMware key[a]	4	3 / 6	Open	2x 750W	Aug 2012 / June 2014

a. Model GSx includes preinstalled SAP Discovery System V5. Also includes IBM Blank USB Memory Key for VMWare ESXi Downloads, part number 41Y8298

Components	Specification
Form factor	**2U rack**.
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight cores (up to 2.9 GHz) or six cores (up to 2.9 GHz) or quad-cores (up to 3.3 GHz). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz of memory speed. Up to 20 MB L3 cache.
Chip set	Intel C602J.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor). RDIMMs, UDIMMs, HCDIMMs (HyperCloud,) and LRDIMMs supported but memory types cannot be intermixed. **Memory speed up to 1600 MHz**.
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors. With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors. With UDIMMs: Up to 64 GB with 16x 4 GB UDIMMs and two processors. With HCDIMMs: Up to 768 GB with 24x 32 GB HCDIMMs and two processors
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	**Up to 32 1.8" SSD bays**, or **up to 16 2.5" hot-swap SAS/SATA bays** or up to six 3.5" hot-swap SAS/SATA bays, or up to six 3.5" Simple Swap SATA bays.
Maximum internal storage	Up to 14.4 TB with 900 GB 2.5" SAS HDDs, up to 16 TB with 1 TB 2.5" NL SAS/SATA HDDs, or **up to 24 TB with 4 TB 3.5" NL SATA HDDs**.
RAID support	RAID 0, 1, or 10 with integrated ServeRAID M5110e; optional upgrades to RAID 5 and 50 are available (zero-cache; 512-MB battery-backed cache; 512-MB or 1 GB flash-backed cache). Optional upgrade to RAID 6 and 60 is available.
Optical drive bays	One with support for DVD-ROM or multiburner. Separate bay.
Tape drive bays	Optional Tape Enablement Kit is available to support one DDS5, DDS6, or RDX internal USB tape drive.
Network interfaces	**Four integrated Gigabit Ethernet** 1000BASE-T ports (RJ-45). Two embedded 10 GbE ports (10GBASE-T RJ-45 or 10GBASE-SR SFP+ based) on an **optional 10 GbE mezzanine card** (does not use a PCIe slot). **Intel I350AM4**.
PCI expansion slots	**Up to six slots** depending on the riser cards installed. The slots are as follows: ▶ Slot 1: PCIe 3.0 x8; full height, full length ▶ Slot 2: PCIe 3.0 x8; full height, half length ▶ Slot 3: PCIe 3.0 x8; full height, half length ▶ Slot 4: Optional, requires second processor and second riser card ▶ Slot 5: Optional, requires second processor and second riser card ▶ Slot 6: Optional, requires second processor and second riser card Optional riser cards available with PCIe x16, PCIe x8 or PCI-X slots.
Ports	Two USB 2.0 and one DB-15 video on front. Four USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 GbE network ports, two optional RJ-45 or SFP+ 10 GbE network ports on rear. Two internal USB ports (for embedded hypervisor and internal tape drive).
Cooling	IBM Calibrated Vectored Cooling with up to four N+N redundant hot swap fans (three standard, additional fan with second processor), each fan has 2 motors.
Power supply	Up to two redundant hot-swap 550 W ac or 750 W ac or 900 W ac power supplies (**80 PLUS Platinum certification**), -48V dc (750 W) option for CTO.
Video	Matrox G200eR2 with 16 MB of memory integrated into the IBM IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Systems management	UEFI, IBM IMM2, Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director and Active Energy Manager, IBM ServerGuide. Optional IMM Advanced Upgrade software feature for remote presence.
Security features	Power-on password, administrator password, and Trusted Platform Module.
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 4.1 and VMware ESXi 4.1 embedded hypervisor, VMware vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and some IBM and third-party applications.
Dimensions	Height: 86 mm (3.4 in), width: 445 mm (17.5 in), depth: 746 mm (29.4 in).
Weight	Minimum configuration: 25 kg (55 lb), maximum: 30 kg (65 lb).

Optical drive, Video port, Power button, Status lights, Up to 6 PCI Express adapter slots, Hot-swap power supplies. Hot-swap 2.5" HDDs (3.5" also supported), USB 2.0 ports, Tape drive bay, Light path diagnostics panel release, Four 1 Gb Ethernet ports, Ethernet port for IMM, Video port, Serial port, Status LEDs, Optional two 10 GbE ports, Four USB ports, NMI reset

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1559	4 GB (1x 4 GB, 1Rx4, 1.5 V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
90Y3109	8 GB (1x 8 GB, 2Gb, 2Rx4,1.5V) PC3-12800 DDR3-1600 LP RDIMM
49Y1563	16 GB (1x 16 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3105	32 GB (1x 32 GB, 4Rx4, 1.35 V) PC 3L-10600 CL9 ECC DDR3 1333 MHz LP LRDIMM
69Y5319	x3650 M4 Plus 8x 2.5" HS HDD Assembly Kit with Expander
69Y5320	x3650 M4 Tape Enablement Kit
69Y5321	x3650 M4 PCIe Gen-III Riser Card (1 x8 FH/FL + 2 x8 FH/HL Slots)
90Y6456	Emulex Dual Port 10GbE SFP+ Embedded VFA III for IBM System x
90Y4600	QLogic 8200 Dual Port 10GbE SFP+ VFA for IBM System x
94Y6668	IBM System x 550W High Efficiency Platinum AC power supply
94Y6669	IBM System x 750W High Efficiency Platinum AC power supply
90Y3901	IBM Integrated Management Module Advanced Upgrade

For a list of all supported options, see the *IBM Redbooks Product Guide* for *IBM System x3650 M4* at:
http://www.redbooks.ibm.com/abstracts/tips0850.html?Open

IBM System x3650 M4 (E5-2600) Express Models (withdrawn)

Model[1,2]	Intel Xeon Processor	Second CPU	Memory	RAID controller	Disk bays	Disks	Network	Slots	Optical	Power	Announced / Withdrawn
North America (NA)											
7915-EAU	1x E5-2609 4C 2.4GHz 10MB 1066MHz 80W	69Y5325	1x 4 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Jun 2014
7915-EBU	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5326	1 x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Dec 2012
7915-ECU	1x E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5327	1 x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 750 W	Mar 2012 / Dec 2012
7915-EDU	1x E5-2640 6C 2.5GHz 15MB 1333MHz 95W	69Y5328	2 x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	2x 750 W	Mar 2012 / Sep 2014
7915-EEU	1x E5-2650 8C 2.0GHz 20MB 1600MHz 95W	69Y5329	1 x 8 GB	M5110e 1GB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 750 W	Mar 2012 / Dec 2012
Latin America (LA)											
7915-EAU	1x E5-2609 4C 2.4GHz 10MB 1066MHz 80W	69Y5325	1x 4 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Jun 2014
7915-EBU	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5326	1 x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Dec 2012
7915-ECU	1x E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5327	1 x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 750 W	Mar 2012 / Dec 2012
7915-EDU	1x E5-2640 6C 2.5GHz 15MB 1333MHz 95W	69Y5328	2 x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	2x 750 W	Mar 2012 / Sep 2014
7915-EEU	1x E5-2650 8C 2.0GHz 20MB 1600MHz 95W	69Y5329	1 x 8 GB	M5110e 1GB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 750 W	Mar 2012 / Dec 2012
Europe Integrated Operating Team (IOT)											
7915-E1G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5323	1x 4 GB	M5110e	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Jun 2012
7915-E2G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5326	1x 8 GB	M5110e	8x 2.5" HS / 16	2 x 300GB 2.5" 10k HS SAS	4x GbE	3 / 6	Multiburner	2x 550 W	Mar 2012 / Jan 2014
7915-E3G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5326	1x 8 GB	M5110e	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Apr 2014
7915-E4G	1x E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5327	1x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	2 x 300GB 2.5" 10k HS SAS	4x GbE	3 / 6	Multiburner	1x 750 W	Mar 2012 / Jun 2012
7915-E5G	2x E5-2650 8C 2.0GHz 20MB 1600MHz 95W	Included	2x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	3 x 300GB 2.5" 10k HS SAS	4x GbE	6 / 6	Multiburner	2x 750 W	Mar 2012 / Jun 2012
7915-K7G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5323	1x 4 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Apr 2013 / Oct 2013
7915-K8G	1x E5-2640 6C 2.5GHz 15MB 1333MHz 95W	69Y5328	1x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 750 W	May 2013 / Apr 2014
Central and Eastern Europe (CEE) and Middle East & Africa (MEA)											
7915-E1G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5323	1x 4 GB	M5110e	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Jun 2012
7915-E2G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5326	1x 8 GB	M5110e	8x 2.5" HS / 16	2 x 300GB 2.5" 10k HS SAS	4x GbE	3 / 6	Multiburner	2x 550 W	Mar 2012 / Jan 2014
7915-E3G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5326	1x 8 GB	M5110e	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Apr 2014
7915-E4G	1x E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5327	1x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	2 x 300GB 2.5" 10k HS SAS	4x GbE	3 / 6	Multiburner	1x 750 W	Mar 2012 / Jun 2012
7915-E5G	2x E5-2650 8C 2.0GHz 20MB 1600MHz 95W	Included	2x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	3 x 300GB 2.5" 10k HS SAS	4x GbE	6 / 6	Multiburner	2x 750 W	Mar 2012 / Oct 2013
7915-K1G	1x E5-2609 4C 2.4GHz 10MB 1066MHz 80W	69Y5325	1x 4 GB	M5110e	6x 3.5" HS/ 6	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Apr 2013
7915-K4G	1x E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5327	1x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	2x 750 W	Mar 2012 / Apr 2014
7915-K5G	1x E5-2650 8C 2.0GHz 20MB 1600MHz 95W	69Y5329	2x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	2x 750 W	Mar 2012 / Jan 2014
7915-K6G	1x E5-2609 4C 2.4 GHz 10 MB 1066MHz 80W	69Y5325	1x 8 GB	M5110e no battery	8x 2.5" HS / 8	2x 300GB 10K 2.5" HS SAS	4x GbE	3 / 6	Multiburner	1x 550 W	Oct 2012 / Apr 2013
7915-K7G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5323	1x 4 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Apr 2013 / Oct 2013
7915-K8G	1x E5-2640 6C 2.5GHz 15MB 1333MHz 95W	69Y5328	1x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 750 W	May 2013 / Apr 2014
Russia/Commonwealth of Independent States (CIS)											
7915-K2G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5323	1x 4 GB	M5110e 512MB Cache + Battery	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012 / Jan 2014
7915-K3G	1x E5-2620 6C 2.0GHz 15MB 1333MHz 95W	69Y5326	1x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Mar 2012
7915-K4G	1x E5-2630 6C 2.3GHz 15MB 1333MHz 95W	69Y5327	1x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	2x 750 W	Mar 2012 / Apr 2014
7915-K5G	1x E5-2650 8C 2.0GHz 20MB 1600MHz 95W	69Y5329	2x 8 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	2x 750 W	Mar 2012 / Jan 2014
7915-K7G	1x E5-2603 4C 1.8GHz 10MB 1066MHz 80W	69Y5323	1x 4 GB	M5110e 512MB Flash	8x 2.5" HS / 16	Open	4x GbE	3 / 6	Multiburner	1x 550 W	Apr 2013 / Oct 2013

IBM System x3690 X5 (7147) workload optimized models (page 1) (withdrawn)

Model[1]	Processor (2 maximum)	Second CPU	MAX5	Memory	Memory mezzanine	RAID adapters	Disk bays	Disks	Network	Optical	Power (4 max)	Announced / Withdrawn
Database workload-optimized models												
7147-D1x	2x Xeon E7-2860 10C 2.26 GHz 24 MB 1066 MHz	88Y5664	Optional	16x 4 GB	Optional	4x B5015	16x 1.8" / 24	16x 200 GB SSD	2x 1Gb + 2x 10Gb[a]	Optional	4x 675 W	Apr 2011 / Mar 2013
7147-D2x	2x Xeon E7-2860 10C 2.26GHz 24 MB 1066 MHz	88Y5664	Optional	16x 4 GB	Optional	2x 6 Gb SSD HBA	16x 1.8" / 24	16x 200 GB SSD	2x 1Gb + 2x 10Gb[a]	Optional	4x 675 W	Apr 2011 / Mar 2013

    a. The D1x, D2x, and F models include one Emulex 10GbE Integrated Virtual Fabric Adapter (no transceivers included). The D3x and D4x models include one Emulex 10GbE Integrated Virtual Fabric Adapter II (no transceivers included)

Components	Specification
Form factor/height	Rack/2U per chassis; MAX5 adds 1U.
Processor (maximum)	**Intel Xeon E7-2800, E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	One or two standard (model-dependent), two maximum.
Cache (maximum)	**Up to 30 MB**.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	**Up to 64 DIMM sockets**: ▶ 16 on the system board ▶ 32 total with an optional memory mezzanine ▶ 64 total with an optional MAX5 and memory mezzanine
Memory maximums	**Up to 2 TB of RAM** using all 32 GB DIMMs: ▶ 512 GB without the memory mezzanine ▶ 1 TB total with the memory mezzanine populated ▶ 2 TB total with the memory mezzanine and MAX5 populated
Expansion slots	**Up to 5 PCIe 2.0 slots** depending on the riser cards used.
Disk bays	**Up to 16x 2.5-inch** SAS hot-swap bays or **up to 24x 1.8-inch solid-state drive** (SSD) hot-swap bays.
Optical drive	Optional.
Maximum internal storage	**16 TB per chassis** (using 1 TB 2.5-inch NL SAS drives).
Network interface	Two 1 Gb Ethernet ports, **Broadcom5709C** controller. **Emulex 10 GB Virtual Fabric Adapter** with two 10 GB Ethernet ports (standard on some models, optional on the others). One Intel Ethernet Quad Port Server Adapter I340-T4 (standard on some workload-optimized models).
Power supply	Server: Up to four 675 W hot-swap redundant power supplies. MAX5: Two 675 W hot-swap redundant power supplies.
Hot-swap parts	Power supplies, fans, and hard disk drives.
RAID support	Most models: **ServeRAID M1015 controller** standard supporting RAID 0, 1, 10, 5, and 50.
Systems management	Alert on LAN 2, automatic server restart, IBM Director, IBM ServerGuide, integrated management module (IMM), light path diagnostics (independently powered), predictive failure analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, and dynamic system analysis.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Datacenter editions 64-bit), 64-bit Red Hat Enterprise Linux and SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere.
Limited warranty	Three-year customer replaceable unit and on-site limited warranty.
Dimensions	Height: 86 mm (3.5 inches, 2U), depth: 698 mm (27.4 inches), width: 429 mm (16.8 inches).
Weight	31.3 kg (69 lb) when fully configured.
* Preinstalled software	Hxx models include SLES for SAP, IBM GPFS, and the SAP HANA software stack preinstalled. F1x model includes VMware ESXi 4.1 Update 1 on an integrated USB key. F2x model includes Red Hat Enterprise Linux with the Red Hat Enterprise. The hypervisor is not preinstalled on any disk.

Popular and system-unique options (see the model table for processor options):

Part	Description
88Y6529	IBM MAX5 V2 for System x
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM
60Y0339	IBM 4x 2.5" HS SAS HDD Backplane
60Y0381	IBM 8x 2.5" HS SAS HDD Backplane
60Y0360	IBM eXFlash 8x 1.8" HS SAS SSD Backplane
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
49Y2003	IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
46M0902	UltraSlim Enhanced SATA Multi-Burner

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3690 X5*:
http://www.redbooks.ibm.com/abstracts/tips0818.html?Open

IBM System x3690 X5 (7147) workload optimized models (page 2) (withdrawn)

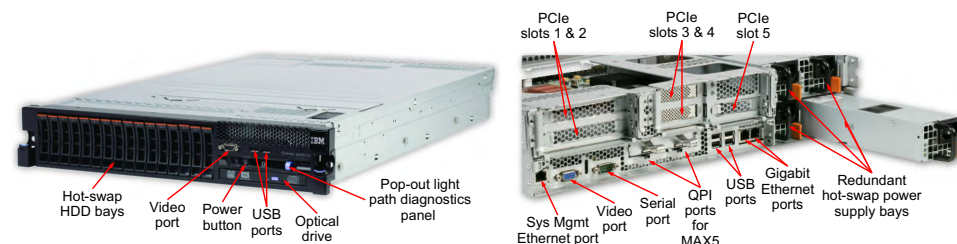| Model[1]	Processor (2 maximum)	Second CPU	MAX5	Memory	Memory mezzanine	RAID adapters	Disk bays	Disks	Network	Optical	Power (4 max)	Announced / Withdrawn
SAP HANA workload-optimized models*												
7147-H1x 7147-H7x[a]	2x Xeon E7-2870 10C 2.40 GHz 30 MB 1066 MHz	88Y5643	Not supported[b]	8x 16 GB	Standard	3x M5015 (with Perf keys)	16x 1.8" / 24 + 8x 2.5" / 16	8x 50 GB SSD + 8x 300 GB SAS	6x 1Gb + 2x 10Gb[c]	Multiburner	4x 675 W	Jun 2011 / Dec 2012
7147-H2x 7147-H8x[a]	2x Xeon E7-2870 10C 2.40 GHz 30 MB 1066 MHz	88Y5643	Not supported[b]	16x 16 GB	Standard	3x M5015 (with Perf keys)	16x 1.8" / 24 + 8x 2.5" / 16	8x 50 GB SSD + 8x 300 GB SAS	6x 1Gb + 2x 10Gb[c]	Multiburner	4x 675 W	Jun 2011 / Dec 2012
7147-H3 7147-H9x[a]	2x Xeon E7-2870 10C 2.40 GHz 30 MB 1066 MHz	88Y5643	Not supported[b]	16x 16 GB	Standard	2x M5015 (with Perf keys)	16x 1.8" / 24	10x 200 GB SSD	6x 1Gb + 2x 10Gb[c]	Multiburner	4x 675 W	Jun 2011 / Dec 2012

a. Models H7x, H8x and H9x are for Canada only and are the same configuration as H1x, H2x and H3x respectively. HAx and HBx are world-wide models.
b. MAX5 is not currently certified for use with SAP HANA and is therefore not supported.
c. The H models include one Emulex 10GbE Integrated Virtual Fabric Adapter II (with two IBM 10GbE SW SFP+ Transceivers) and one Intel Ethernet Quad Port Server Adapter I340-T4. HAx and HBx models also include an additional Emulex 10GbE Virtual Fabric Adapter II (with two IBM 10GbE SW SFP+ Transceivers).

Components	Specification
Form factor/height	Rack/2U per chassis; MAX5 adds 1U.
Processor (maximum)	**Intel Xeon E7-2800, E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	One or two standard (model-dependent), two maximum.
Cache (maximum)	**Up to 30 MB**.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	**Up to 64 DIMM sockets**: ▶ 16 on the system board ▶ 32 total with an optional memory mezzanine ▶ 64 total with an optional MAX5 and memory mezzanine
Memory maximums	**Up to 2 TB of RAM** using all 32 GB DIMMs: ▶ 512 GB without the memory mezzanine ▶ 1 TB total with the memory mezzanine populated ▶ 2 TB total with the memory mezzanine and MAX5 populated
Expansion slots	**Up to 5 PCIe 2.0 slots** depending on the riser cards used.
Disk bays	**Up to 16x 2.5-inch** SAS hot-swap bays or **up to 24x 1.8-inch solid-state drive** (SSD) hot-swap bays.
Optical drive	Optional.
Maximum internal storage	**16 TB per chassis** (using 1 TB 2.5-inch NL SAS drives).
Network interface	Two 1 Gb Ethernet ports, **Broadcom5709C** controller. **Emulex 10 GB Virtual Fabric Adapter** with two 10 GB Ethernet ports (standard on some models, optional on the others). One Intel Ethernet Quad Port Server Adapter I340-T4 (standard on some workload-optimized models).
Power supply	Server: Up to four 675 W hot-swap redundant power supplies. MAX5: Two 675 W hot-swap redundant power supplies.
Hot-swap parts	Power supplies, fans, and hard disk drives.
RAID support	Most models: **ServeRAID M1015 controller** standard supporting RAID 0, 1, 10, 5, and 50.
Systems management	Alert on LAN 2, automatic server restart, IBM Director, IBM ServerGuide, integrated management module (IMM), light path diagnostics (independently powered), predictive failure analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, and dynamic system analysis.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Datacenter editions 64-bit), 64-bit Red Hat Enterprise Linux and SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere.
Limited warranty	Three-year customer replaceable unit and on-site limited warranty.
Dimensions	Height: 86 mm (3.5 inches, 2U), depth: 698 mm (27.4 inches), width: 429 mm (16.8 inches).
Weight	31.3 kg (69 lb) when fully configured.

Components	Specification
* Preinstalled software	Hxx models include SLES for SAP, IBM GPFS, and the SAP HANA software stack preinstalled. F1x model includes VMware ESXi 4.1 Update 1 on an integrated USB key. F2x model includes Red Hat Enterprise Linux with the Red Hat Enterprise. The hypervisor is not preinstalled on any disk.

Popular and system-unique options (see the model table for processor options):

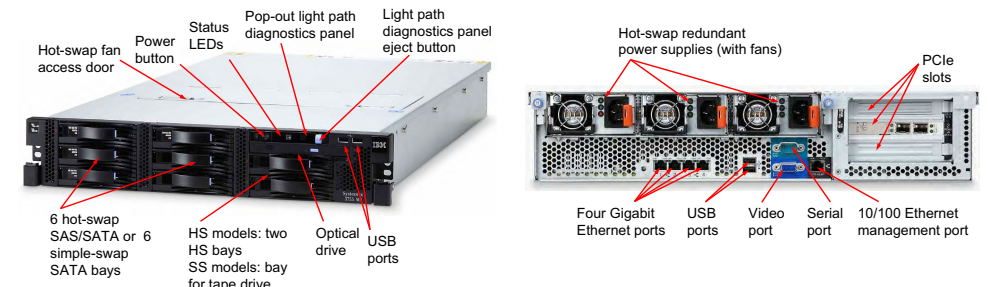| Part	Description
88Y6529	IBM MAX5 V2 for System x
59Y6269	IBM MAX5 to x3690 X5 Cable Kit
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
46C7483	16GB (1x16GB, 4Rx4, 1.5V) PC3-8500 CL7 ECC DDR3 1066MHz
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM
60Y0339	IBM 4x 2.5" HS SAS HDD Backplane
60Y0381	IBM 8x 2.5" HS SAS HDD Backplane
60Y0360	IBM eXFlash 8x 1.8" HS SAS SSD Backplane
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
49Y2003	IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
43W7746	IBM 200 GB SATA 1.8-inch MLC SSD
46M0902	UltraSlim Enhanced SATA Multi-Burner

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3690 X5*: http://www.redbooks.ibm.com/abstracts/tips0818.html?Open

IBM System x3755 M3 (AMD Opteron 6200) (withdrawn)

Model[1]	AMD Opteron processors (4 maximum)	Additional CPUs	Memory	RAID adapter	Disk bays	Disks	Network	Optical	Power supply	Announced / Withdrawn
7164-A2x	4x AMD Opteron 6282SE 16C 2.6 GHz 16 MB 140W	All four standard	8x 4 GB	M5015 + Batt.	8x 3.5" HS SAS/SATA / 8	Optional	4x GbE	Optional	2x 1100 W / 3	Nov 2011 / Mar 2014
7164-B2x	4x AMD Opteron 6276 16C 2.3 GHz 16 MB 115 W	All four standard	8x 4 GB	M5015 + Batt.	8x 3.5" HS SAS/SATA / 8	Optional	4x GbE	Optional	1x 1100 W / 3	Nov 2011 / Mar 2014
7164-D2x	4x AMD Opteron 6272 16C 2.1 GHz 16 MB 115 W	All four standard	8x 4 GB	M1015	8x 3.5" HS SAS/SATA / 8	Optional	4x GbE	Optional	1x 1100 W / 3	Nov 2011 / Mar 2014
7164-G2x	4x AMD Opteron 6234 12C 2.4 GHz 16 MB 115 W	All four standard	8x 4 GB	M1015	8x 3.5" HS SAS/SATA / 8	Optional	4x GbE	Optional	1x 1100 W / 3	Nov 2011 / Mar 2014
7164-J2x	4x AMD Opteron 6220 8C 3.0 GHz 16 MB 115 W	All four standard	8x 4 GB	M1015	8x 3.5" HS SAS/SATA / 8	Optional	4x GbE	Optional	1x 1100 W / 3	Nov 2011 / Mar 2014
7164-L2x	4x AMD Opteron 6262HE 16C 1.6 GHz 16 MB 85W	All four standard	8x 4 GB	M1015	8x 3.5" HS SAS/SATA / 8	Optional	4x GbE	Optional	1x 1100 W / 3	Nov 2011 / Mar 2014

Components	Specification
Form factor	2U rack.
Processor	**Up to four 16-core** (up to 2.5 GHz, 12-core (up to 2.6 GHz), or 8-core (up to 3.0 GHz) **AMD Opteron 6200 series processors** with **HyperTransport 3 technology** up to 6.4 GT/s. Up to 1333 MHz of memory speed.
Memory cache	Up to 16 MB L3.
Chip set	AMD SR5690 and SP5100.
Memory sockets	**Up to 32 DIMM sockets** (eight DIMMs per processor).
Memory	Supports RDIMMs or UDIMMs. With RDIMMs: **Up to 512 GB** using 16 GB DDR3 RDIMMs and four processors. With UDIMMs: Up to 128 GB with 4 GB DDR3 UDIMMs and four processors.
Memory protection	ECC, Chipkill (for x4-based and x8-based memory DIMMs), memory sparing.
Disk drive bays	Up to six 3.5" simple-swap (SS) SATA HDD bays (CTO only), or **up to eight 3.5" hot-swap** (HS) SAS/SATA HDD bays.
Maximum internal storage	**Up to 32.0 TB** with 4 TB 3.5" HS NL SATA HDDs Up to 4.8 TB with 600 GB 3.5" HS SAS HDDs Up to 18.0 TB with 3 TB 3.5" SS SATA HDDs (CTO only) Intermix of SAS and SATA is supported.
RAID support	**RAID 0, 1, or 1E with ServeRAID M1015** with optional RAID 5; **RAID 0, 1, 5, 10, or 50 with ServeRAID M5015**. Optional upgrade to RAID 6 and 60 is available for M5015. BR10ilV2 and M5014 also available (CTO only).
Optical drive bays	One with support for optional UltraSlim DVD-ROM or multiburner.
Tape drive bays	None in standard models with hot-swap HDDs. One optional in CTO models with simple-swap HDDs.
Network interfaces	**Four integrated Gigabit Ethernet ports** using two dual-port **Broadcom 5709C** Ethernet controllers.
PCI expansion slots	The server offers **four PCI Express slots** (with one reserved for the RAID controller): ► Slot 1: PCIe 2.0 x16, full height, full length ► Slot 2: PCIe 2.0 x8, low profile, half length ► Slot 3: PCIe 2.0 x8 (x4 wired), low profile, half length ► Slot 4: PCIe 2.0 x8, low profile, half length (internal only, reserved for RAID controller)
External ports	Two USB 2.0 on front. Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 network ports on rear. One internal USB port for embedded hypervisor.
Cooling	**Five hot swap fans** with **N+1 redundancy** (standard models) or five non-hot swap non-redundant fans (only available by using CTO).
Power supply	Up to **three redundant hot-swap** 1100 W ac power supplies with N+N or N+1 redundancy depending on the configuration.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Systems management	UEFI, Integrated Baseboard Management Controller (iBMC) with standard remote presence (graphics, keyboard, mouse, and virtual media), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director versions 6.2.1 and 6.3, and IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Aspeed AST2050 with 8 MB of memory integrated into iBMC. Maximum resolution is 1280x1024 at 100 Hz with 64 K 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 and vSphere 5 embedded hypervisor.

Components	Specification
Limited warranty	Three-year customer-replaceable unit and on-site 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: 446 mm (17.6 in), depth: 728 mm (28.6 in), height: 87 mm (3.4 in).
Weight	Minimum configuration: 22 kg (48.6 lb), maximum configuration: 33 kg (72.7 lb).

Popular and system-unique options:

Part	Description
49Y1406	4GB (1x4GB, 1Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y1435	4GB (1x4GB, 2Rx4, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y1397	8GB (1x8GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y1436	8GB (1x8GB, 2Rx4, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y1400	16GB (1x16GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM
81Y9774	IBM 3TB 7.2K 6Gbps SATA 3.5" HS HDD
81Y9758	IBM 3TB 7.2K 6Gbps NL SAS 3.5" HS HDD
49Y6185	IBM 4TB 7.2K 6Gbps NL SATA 3.5" HS HDD
44W2244	IBM 600GB 15K 6Gbps SAS 3.5" Hot-Swap HDD
46M0902	IBM UltraSlim Enhanced SATA Multi-Burner
49Y7342	1100W Redundant Power Supply

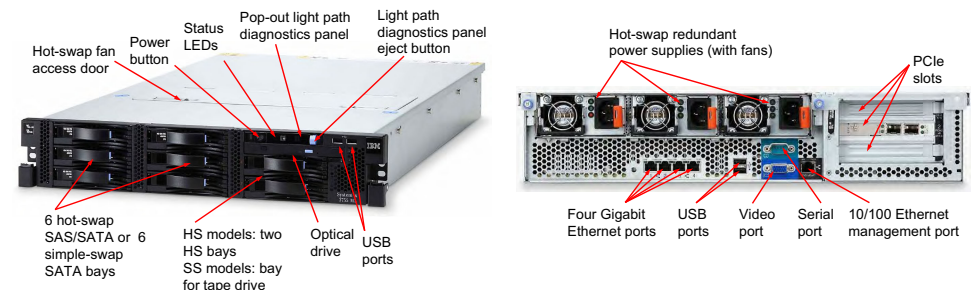For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3755 M3*: http://www.redbooks.ibm.com/abstracts/tips0838.html?Open

IBM System x3755 M3 (AMD Opteron 6100) (withdrawn)

Model[1]	Processor	Additional CPUs	Memory	RAID	Disk bays	Disks	Network	Optical	Power supply	Announced / Withdrawn
7164-22x	2x AMD Opteron 6128 8C 2.0 GHz 12 MB 115 W	49Y7332	2x 4 GB	M1015	8x 3.5" HS SAS/SATA / 8	Open	4x GbE	Optional	1x 1100 W / 3	Aug 2010 / Jun 2012
7164-32x	4x AMD Opteron 6128HE 8C 2.0 GHz 12 MB 79 W	All four standard	4x 4 GB	M1015	8x 3.5" HS SAS/SATA / 8	Open	4x GbE	Optional	2x 1100 W / 3	Aug 2010 / Jun 2012
7164-42x	2x AMD Opteron 6134 8C 2.3 GHz 12 MB 115 W	49Y7335	2x 4 GB	M1015	8x 3.5" HS SAS/SATA / 8	Open	4x GbE	Optional	1x 1100 W / 3	Aug 2010 / Jun 2012
7164-52x	4x AMD Opteron 6136 8C 2.4 GHz 12 MB 115 W	49Y7334	4x 4 GB	M5015+B[a]	8x 3.5" HS SAS/SATA / 8	Open	4x GbE	Optional	2x 1100 W / 3	Aug 2010 / Jun 2012
7164-62x	2x AMD Opteron 6172 12C 2.1 GHz 12 MB 115 W	49Y7336	4x 4 GB	M1015	8x 3.5" HS SAS/SATA / 8	Open	4x GbE	Optional	1x 1100 W / 3	Aug 2010 / Jun 2012
7164-72x	4x AMD Opteron 6174 12C 2.2 GHz 12 MB 115 W	All four standard	4x 4 GB	M5015 + Batt.	8x 3.5" HS SAS/SATA / 8	Open	4x GbE	Optional	2x 1100 W / 3	Aug 2010 / Sep 2012

a. The ServeRAID M5015 in this model includes a battery

Components	Specification
Form factor	2U rack.
Processor	**Up to four 12-core** (up to 2.2 GHz) or 8-core (up to 2.4 GHz) **AMD Opteron 6100 series processors** with **HyperTransport 3 technology** up to 6.4 GT/s, and up to 1333 MHz of memory speed.
Memory cache	Up to 16 MB L3.
Chip set	AMD SR5690 and SP5100.
Memory sockets	**Up to 32 DIMM sockets** (eight DIMMs per processor).
Memory	Supports RDIMMs or UDIMMs. With RDIMMs: **Up to 512 GB** using 16 GB DDR3 RDIMMs and four processors. With UDIMMs: Up to 128 GB with 4 GB DDR3 UDIMMs and four processors.
Memory protection	ECC, Chipkill (for x4-based and x8-based memory DIMMs), memory sparing.
Disk drive bays	Up to six 3.5" simple-swap (SS) SATA HDD bays (CTO only), or **up to eight 3.5" hot-swap** (HS) SAS/SATA HDD bays.
Maximum internal storage	**Up to 24.0 TB** with 3 TB 3.5" HS NL SATA or NL SAS HDDs. Up to 4.8 TB with 600 GB 3.5" HS SAS HDDs. Up to 18.0 TB with 3 TB 3.5" SS SATA HDDs (CTO only). Intermix of SAS and SATA is supported.
RAID support	**RAID 0, 1, or 1E with ServeRAID M1015** with optional RAID 5; **RAID 0, 1, 5, 10, or 50 with ServeRAID M5015**. Optional upgrade to RAID 6 and 60 is available for M5015. BR10ilV2 and M5014 also available (CTO only).
Optical drive bays	One with support for optional UltraSlim DVD-ROM or multiburner.
Tape drive bays	None in standard models with hot-swap HDDs. One optional in CTO models with simple-swap HDDs.
Ethernet	**Four integrated Gigabit Ethernet ports** using two dual-port **Broadcom 5709C** Ethernet controllers.
PCI expansion slots	The server offers **four PCI Express slots** (with one reserved for the RAID controller): ▶ Slot 1: PCIe 2.0 x16, full height, full length ▶ Slot 2: PCIe 2.0 x8, low profile, half length ▶ Slot 3: PCIe 2.0 x8 (x4 wired), low profile, half length ▶ Slot 4: PCIe 2.0 x8, low profile, half length (internal only, reserved for RAID controller)
External ports	Two USB 2.0 on front. Two USB 2.0, one DB-15 video, one DB-9 serial, one RJ-45 systems management, four RJ-45 network ports on rear. One internal USB port for embedded hypervisor.
Cooling	**Five hot swap fans** with **N+1 redundancy** (standard models) or five non-hot swap non-redundant fans (only available using CTO).
Power supply	Up to **three redundant hot-swap** 1100 W ac power supplies with N+N or N+1 redundancy depending on the configuration.
Hot-swap parts	Hard disk drives, power supplies, and fans.
Systems management	UEFI, Integrated Baseboard Management Controller (iBMC) with standard remote presence (graphics, keyboard, mouse, and virtual media), Predictive Failure Analysis, **Light Path Diagnostics**, Automatic Server Restart, IBM Systems Director versions 6.2.1 and 6.3, and IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module.
Video	Aspeed AST2050 with 8 MB of memory integrated into iBMC. Maximum resolution is 1280x1024 at 100 Hz with 64 K 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 and vSphere 5 embedded hypervisor.

Components	Specification
Limited warranty	Three-year customer-replaceable unit and on-site 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: 446 mm (17.6 in), depth: 728 mm (28.6 in), height: 87 mm (3.4 in).
Weight	Minimum configuration: 22 kg (48.6 lb), maximum configuration: 33 kg (72.7 lb).

Popular and system-unique options (see the model table for processor options):
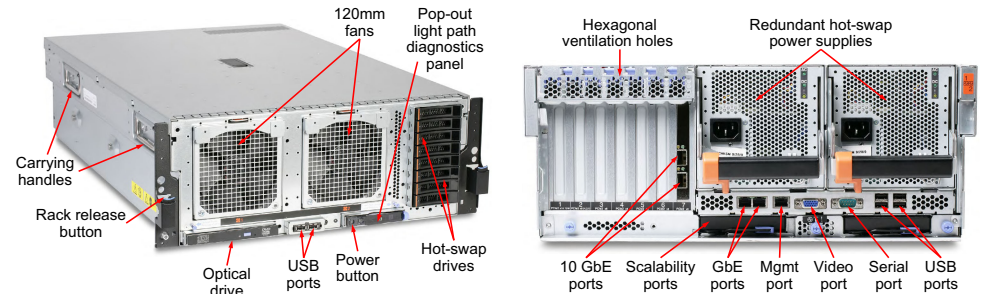
Part	Description
49Y1406	4GB (1x4GB, 1Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y1435	4GB (1x4GB, 2Rx4, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y1397	8GB (1x8GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y1436	8GB (1x8GB, 2Rx4, 1.5V) PC3-10600 CL9 ECC DDR3 1333MHz LP RDIMM
49Y1400	16GB (1x16GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz LP RDIMM
81Y9774	IBM 3TB 7.2K 6Gbps SATA 3.5" HS HDD
81Y9758	IBM 3TB 7.2K 6Gbps NL SAS 3.5" HS HDD
44W2244	IBM 600GB 15K 6Gbps SAS 3.5" Hot-Swap HDD
46M0902	IBM UltraSlim Enhanced SATA Multi-Burner
49Y7342	1100W Redundant Power Supply

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3755 M3*:
http://www.redbooks.ibm.com/abstracts/tips0838.html?Open

IBM System x3950 X5 (7143) database optimized models (withdrawn)

Model[1]	Processor	Scale to 2-node without MAX5	Scale to 2-node with MAX5	MAX5	Memory (standard cards)	RAID adapter	Disk bays	Disks	Network	DVD	Power (2 max.)	Announced / Withdrawn
Database workload-optimized models												
7143-D1x	4x Xeon E7-4850 10C 2.00 GHz 24 MB 1066 MHz	No	Yes	Optional	32x 4 GB (8)	2x 6 Gb SSD HBA	16 / 16 (1.8" SSD)	16x 200 GB 2x 320 GB PCIe	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011 / Mar 2013
7143-D2x	4x Xeon E7-4860 10C 2.26 GHz 24 MB 1066 MHz	No	Yes	Optional	32x 4 GB (8)	4x B5015	16 / 16 (1.8" SSD)	16x 200 GB	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011 / Mar 2013

Components	Specification
Form factor/height	Rack/4U per chassis; MAX5 adds 1U.
Scalability	The x3950 X5, type 7143, supports **system scalability** as follows: ▶ One server (4U rack-mounted complex) ▶ One server with MAX5 memory expansion unit (5U rack-mounted complex) ▶ Two servers (8U rack-mounted complex) ▶ Two servers with two MAX5 memory expansion units (10U rack-mounted complex) Some processors limit the scalability options. For details, see the *IBM System x3850 X5 Product Guide*.
Processor type	Machine type 7143: **Intel Xeon E7-8800 and E7-4800 families**, up to 10 cores.
Processors	Most models: two standard (some have four processors as standard); four maximum.
Cache (maximum)	**Up to 30 MB**.
Memory DIMM sockets	Up to eight memory cards (In the model table, the Memory column lists the standard number of memory cards in parentheses.) Each memory card has eight DIMM sockets (**64 DIMM sockets total**). **MAX5 adds 32 DIMM sockets**.
Memory maximums	Machine type 7143: ▶ **Up to 2.0 TB** using 32 GB DIMMs ▶ **Up to 3.0 TB with the addition of MAX5**
Expansion slots	**Eight PCIe 2.0 slots total**: ▶ Seven PCIe 2.0 slots (one used by 10 GB Ethernet card, if included). ▶ One PCIe 2.0 slot for supported RAID card.
Disk bays	**Eight 2.5" hot-swap** SAS or **sixteen 1.8" solid-state drives** (SSD).
Maximum internal storage	**8 TB per chassis** (using eight 1 TB 2.5" NL SAS HDDs).
Network interface	Two 1 Gb Ethernet ports. Broadcom 5709C controller. **Emulex 10 GB Virtual Fabric Adapter standard** on most models with two 10 Gb Ethernet ports.
Power supply	Up to two hot-swap redundant 1975-W power supplies.
Hot-swap parts	Power supplies, fans, hard disk drives, and solid-state-drives.
RAID support	7143: Integrated RAID 0 or RAID 1 with ServeRAID M1015 in dedicated PCIe slot. Optional RAID 5, 6, 10, 50, or 60.
External ports	Rear: Scalability ports, one Ethernet for systems management, one serial port, four USB 2.0, one VGA, two Gb Ethernet cards, two 10 GB Ethernet cards (most models). Front: Two USB 2.0. Internal: One USB 2.0 port for **Embedded Hypervisor**.
Systems management	Alert on LAN 2, Automatic Server Restart, IBM Systems Director, IBM ServerGuide, integrated management module (IMM), **light path diagnostics**, Predictive Failure Analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, Dynamic System Analysis, and QPI Faildown.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Data Center Editions 64-bit), 64-bit Red Hat Enterprise Linux, 64-bit SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere Hypervisor.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.
Dimensions	Width: 440 mm (17.3 inches), depth: 712 mm (28.0 inches), height: 173 mm (6.8 inches) or 4 rack units (4U).
Weight	Minimum configuration: 35.4 kg (78 lb), maximum configuration: 49.9 kg (110 lb).

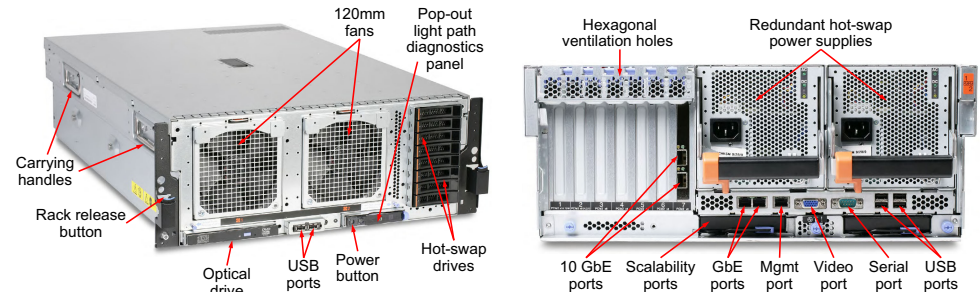**Popular and system-unique options (see the model table for processor options):**

Part	Description
88Y6529	IBM MAX5 V2 for System x
59Y6267	IBM MAX5 to x3850 X5 Cable Kit (four cables)
46M0072	IBM x3850 X5 and x3950 X5 QPI Scalability Kit (four cables)
59Y6271	IBM eX5 MAX5 2-Node EXA Scalability Kit (for machine type 7143 only)
69Y1888	IBM x3850 X5 and x3950 X5 Memory Expansion Card (machine type 7143 only)
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
46C7483	16GB (1x16GB, 4Rx4, 1.5V) PC3-8500 CL7 ECC DDR3 1066MHz
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
59Y6213	IBM eXFlash 8x 1.8-inch HS SAS SSD Backplane - supports eight 1.8" drives
59Y6135	IBM 2.5" Hot Swap SAS Hard Disk Drive Backplane - supports four 2.5-inch drives

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3850 X5*:
http://www.redbooks.ibm.com/abstracts/tips0817.html?Open

IBM System x3950 X5 (7143) virtualization optimized models (withdrawn)

Model[1]	Processor	Scale to 2-node without MAX5	Scale to 2-node with MAX5	MAX5	Memory (standard cards)	RAID adapter	Disk bays	Disks	Network	DVD	Power (2 max.)	Announced / Withdrawn
Virtualization workload-optimized models												
7143-B8x (ESX)	4x Xeon E7-4860 10C 2.26 GHz 24 MB 1066 MHz	No	Yes	Standard (V1)	Server: 64x 4 GB (8) MAX5: 32x 4 GB	1x M1015	4 / 8 (2.5" HDD)	Open	2x 1 Gb + 2x 10 Gb	Optional	2x 1975 W	Apr 2011 / Jan 2013

Components	Specification
Form factor/height	Rack/4U per chassis; MAX5 adds 1U.
Scalability	The x3950 X5, type 7143, supports **system scalability** as follows: ▶ One server (4U rack-mounted complex) ▶ One server with MAX5 memory expansion unit (5U rack-mounted complex) ▶ Two servers (8U rack-mounted complex) ▶ Two servers with two MAX5 memory expansion units (10U rack-mounted complex) Some processors limit the scalability options. For details, see the *IBM System x3850 X5 Product Guide*.
Processor type	Machine type 7143: **Intel Xeon E7-8800 and E7-4800 families**, up to 10 cores.
Processors	Most models: two standard (some have four processors as standard); four maximum.
Cache (maximum)	**Up to 30 MB**.
Memory DIMM sockets	Up to eight memory cards (In the model table, the Memory column lists the standard number of memory cards in parentheses.) Each memory card has eight DIMM sockets (**64 DIMM sockets total**). **MAX5 adds 32 DIMM sockets**.
Memory maximums	Machine type 7143: ▶ **Up to 2.0 TB** using 32 GB DIMMs ▶ **Up to 3.0 TB with the addition of MAX5**
Expansion slots	**Eight PCIe 2.0 slots total**: ▶ Seven PCIe 2.0 slots (one used by 10 GB Ethernet card, if included). ▶ One PCIe 2.0 slot for supported RAID card.
Disk bays	**Eight 2.5" hot-swap** SAS or **sixteen 1.8" solid-state drives** (SSD).
Maximum internal storage	**8 TB per chassis** (using eight 1 TB 2.5" NL SAS HDDs).
Network interface	Two 1 Gb Ethernet ports. Broadcom 5709C controller. **Emulex 10 GB Virtual Fabric Adapter standard** on most models with two 10 Gb Ethernet ports.
Power supply	Up to two hot-swap redundant 1975-W power supplies.
Hot-swap parts	Power supplies, fans, hard disk drives, and solid-state-drives.
RAID support	7143: Integrated RAID 0 or RAID 1 with ServeRAID M1015 in dedicated PCIe slot. Optional RAID 5, 6, 10, 50, or 60.
External ports	Rear: Scalability ports, one Ethernet for systems management, one serial port, four USB 2.0, one VGA, two Gb Ethernet cards, two 10 GB Ethernet cards (most models). Front: Two USB 2.0. Internal: One USB 2.0 port for **Embedded Hypervisor**.
Systems management	Alert on LAN 2, Automatic Server Restart, IBM Systems Director, IBM ServerGuide, integrated management module (IMM), **light path diagnostics**, Predictive Failure Analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, Dynamic System Analysis, and QPI Faildown.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Data Center Editions 64-bit), 64-bit Red Hat Enterprise Linux, 64-bit SUSE Linux Enterprise Server and Advanced Server, and VMware vSphere Hypervisor.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.
Dimensions	Width: 440 mm (17.3 inches), depth: 712 mm (28.0 inches), height: 173 mm (6.8 inches) or 4 rack units (4U).
Weight	Minimum configuration: 35.4 kg (78 lb), maximum configuration: 49.9 kg (110 lb).

Carrying handles · Rack release button · Optical drive · USB ports · Power button · Hot-swap drives · 120mm fans · Pop-out light path diagnostics panel · Hexagonal ventilation holes · Redundant hot-swap power supplies · 10 GbE ports · Scalability ports · GbE ports · Mgmt port · Video port · Serial port · USB ports

Popular and system-unique options (see the model table for processor options):

Part	Description
88Y6529	IBM MAX5 V2 for System x
59Y6267	IBM MAX5 to x3850 X5 Cable Kit (four cables)
46M0072	IBM x3850 X5 and x3950 X5 QPI Scalability Kit (four cables)
59Y6271	IBM eX5 MAX5 2-Node EXA Scalability Kit (for machine type 7143 only)
69Y1888	IBM x3850 X5 and x3950 X5 Memory Expansion Card (machine type 7143 only)
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
46C7483	16GB (1x16GB, 4Rx4, 1.5V) PC3-8500 CL7 ECC DDR3 1066MHz
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
59Y6213	IBM eXFlash 8x 1.8-inch HS SAS SSD Backplane - supports eight 1.8" drives
59Y6135	IBM 2.5" Hot Swap SAS Hard Disk Drive Backplane - supports four 2.5-inch drives

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3850 X5*:
http://www.redbooks.ibm.com/abstracts/tips0817.html?Open

IBM System x3950 X5 (7143) SAP HANA workload-optimized models (withdrawn)

Model[1]	Processor	Scale to 2-node	Use of MAX5	Memory (standard cards)	RAID adapter	Disk bays	Disks	Network	Optical	Power (2 max.)	Announced / Withdrawn
SAP HANA workload-optimized models											
7143-H1x 7143-H4x[a]	2x Xeon E7-8870 10C 2.40 GHz 30 MB 1066 MHz	Yes	Not supported[b]	16x 16 GB (4)	1x M5015 + battery	8 / 8 (2.5" HDD)	8x 600 GB 10K SAS 1x 320 GB PCIe	6x 1 Gb + 2x 10 Gb[c]	Multiburner	2x 1975 W	Apr 2011 / Dec 2012
7143-H2x 7143-H5x[a]	4x Xeon E7-8870 10C 2.40 GHz 30 MB 1066 MHz	Yes	Not supported[b]	32x 16 GB (8)	1x M5015 + battery	8 / 8 (2.5" HDD)	8x 600 GB 10K SAS 1x 640 GB PCIe	6x 1 Gb + 2x 10 Gb[c]	Multiburner	2x 1975 W	Apr 2011 / Dec 2012
7143-H3x	4x Xeon E7-8870 10C 2.40 GHz 30 MB 1066 MHz	Yes[d]	Not supported[b]	32x 16 GB (8)	1x M5015 + battery	8 / 8 (2.5" HDD)	8x 600 GB 10K SAS 1x 640 GB PCIe	6x 1 Gb + 2x 10 Gb[c]	Optional	2x 1975 W	Apr 2011 / Dec 2012

a. Models H4x and H5x are for Canada only and are the same configuration as H1x and H2x respectively.
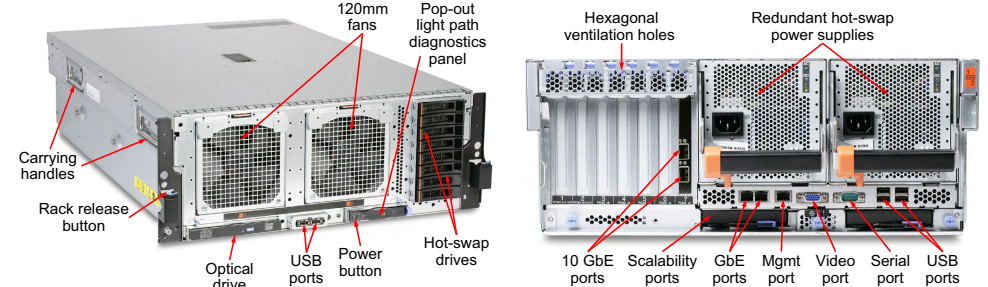b. MAX5 is not currently certified for use with SAP HANA and is therefore not supported.
c. The H1x-H5x models include one Emulex 10GbE Integrated Virtual Fabric Adapter (with two IBM 10GbE SW SFP+ Transceivers) and one Intel Ethernet Quad Port Server Adapter I340-T4 for a total of two 10Gb ports and six 1Gb ports.
d. Models H3x include the QPI Scalability Kit (four cables), part number 46M0072. Use model H3x plus H2x to form a 2-node scaled complex.

Components	Specification
Form factor/height	Rack/4U per chassis; MAX5 adds 1U.
Scalability	The SAP HANA models support **system scalability** as follows: ▶ One server (4U rack-mounted complex) ▶ Two servers (8U rack-mounted complex) MAX5 is not currently certified for use with SAP HANA and is not supported.
Processor type	**Intel Xeon E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity t up to 6.4 Gbps with four SMI links per processor. **Up to eight processors** when with two servers.
Number of processors	SAP HANA workload optimized models have either two or four processors standard; four maximum.
Cache (maximum)	**Up to 30 MB**.
Memory DIMM sockets	Up to eight memory cards (In the model table, the Memory column lists the standard number of memory cards in parentheses.) Each memory card has eight DIMM sockets (**64 DIMM sockets total**). **MAX5 adds 32 DIMM sockets**.
Memory maximums	Machine type 7143: ▶ **Up to 2.0 TB** using 32 GB DIMMs ▶ **Up to 3.0 TB with the addition of MAX5**
Expansion slots	**Eight PCIe 2.0 slots total**: ▶ Seven PCIe 2.0 slots (one used by 10 GB Ethernet card, if included). ▶ One PCIe 2.0 slot for supported RAID card.
Disk bays	**Eight 2.5" hot-swap** SAS or **sixteen 1.8" solid-state drives** (SSD).
Maximum int. disk	**8 TB per chassis** (using eight 1 TB 2.5" NL SAS HDDs).
Network interface	Two 1 Gb Ethernet ports. Broadcom 5709C controller. **Emulex 10 GB Virtual Fabric Adapter standard** on most models with two 10 Gb Ethernet ports.
Power supply	Up to two hot-swap redundant 1975-W power supplies.
Hot-swap parts	Power supplies, fans, hard disk drives, and solid-state-drives.
RAID support	7143: Integrated RAID 0 or RAID 1 with ServeRAID M1015 in dedicated PCIe slot. Optional RAID 5, 6, 10, 50, or 60.
External port	Rear: Scalability ports, one Ethernet for systems management, one serial port, four USB 2.0, one VGA, two Gb Ethernet cards, two 10 GB Ethernet cards (most models). Front: Two USB 2.0. Internal: One USB 2.0 port for **Embedded Hypervisor**.
Systems management	Alert on LAN 2, Automatic Server Restart, IBM Systems Director, IBM ServerGuide, integrated management module (IMM), **light path diagnostics**, Predictive Failure Analysis on hard disk drives, processors, VRMs, fans and memory, Wake on LAN, Dynamic System Analysis, and QPI Faildown.
Operating systems supported	Microsoft Windows Server 2008 (Standard, Enterprise, and Data Center Editions 64-bit), 64-bit Red Hat Enterprise Linux, 64-bit SUSE Linux Enterprise Server and Advanced Server, VMware vSphere Hypervisor.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

Components	Specification
Dimensions	Width: 440 mm (17.3 inches), depth: 712 mm (28.0 inches), height: 173 mm (6.8 inches) or 4 rack units (4U).
Weight	Minimum configuration: 35.4 kg (78 lb), maximum configuration: 49.9 kg (110 lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
46M0072	IBM x3850 X5 and x3950 X5 QPI Scalability Kit (four cables)
69Y1888	IBM x3850 X5 and x3950 X5 Memory Expansion Card (machine type 7143 only)
49Y1399	8GB (1x8GB, 4Rx8, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
46C7482	8GB (1x8GB, Quad Rankx8) PC3-8500 CL7 ECC DDR3 1066MHz
49Y1563	16GB (1x16GB, 2Rx4, 1.35v) PC3L-10600 CL9 ECC DDR3 1066MHz LP RDIMM
90Y3101	32GB (1x32GB, 4Rx4, 1.35V) PC3L-8500 CL7 ECC DDR3 1066MHz
59Y6213	IBM eXFlash 8x 1.8-inch HS SAS SSD Backplane - supports eight 1.8" drives
59Y6135	IBM 2.5" Hot Swap SAS Hard Disk Drive Backplane - supports four 2.5-inch drives
59Y6139	IBM 1975 W Power Supply (x3850 X5)

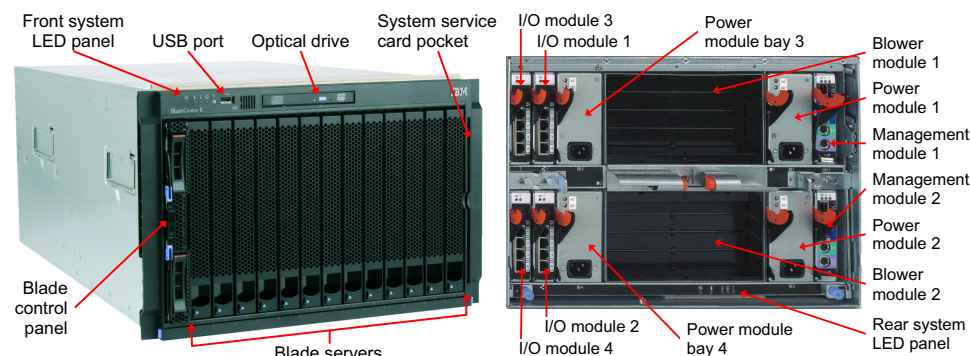For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM System x3850 X5*: http://www.redbooks.ibm.com/abstracts/tips0817.html?Open

IBM BladeCenter E (withdrawn)

Model[1]	Server bays (14 max)	Management Module	High-speed I/O Module bays[a]	Standard I/O Module bays	I/O modules standard	Power supplies (4 max)	Blowers (2 max)	Optical drive	Diskette drive	Announced / Withdrawn
8677-3Tx	14 available	1x AMM standard / 2 max	None	4 total / 4 avail	None	2x 2000 W	2	Optional	None	Mar 2010 / June 2014
8677-4Tx	14 available	1x AMM standard / 2 max	None	4 total / 4 avail	None	2x 2320 W	2	Optional	None	Mar 2010 / June 2014

a. Only BladeCenter H and HT support high-speed I/O module bays

Components	Specification
Machine type	System x sales channel: 8677 Power Systems sales channel: None
Form factor	**7U rack-mounted unit**.
Maximum number of servers supported	**Up to 14 server blades** in 14 bays. Supports double-wide servers or servers with expansion blades.
Systems supported	All IBM BladeCenter servers except for HX5, PS701, PS702, PS703, PS704 and models of other servers containing processors with high TDP (thermal) values.
Nodes per 42U rack	Up to **84 servers in four chassis**
Advanced Management Modules	One or **two Advanced Management Modules** (AMMs), hot-swap, rear access, comprehensive system management functions; PowerPC 440GP controller. Communicates with integrated system management processor on each server blade. Complete KVM switch local functionality. Older models of the chassis contain Management Modules (MMs) and require upgrade to AMMs to support newer server models.
Media tray	One USB port and optional optical drive connectable to any one blade server; switchable via buttons on media tray or remote via the AMM web interface. Older withdrawn chassis models also included a diskette drive.
Ports	AMM: DB15 analog video port, dual USB 2.0 for keyboard and mouse, Serial (RJ45), 10/100 Ethernet remote management MM (older models only): DB15 analog video port, PS/2-style ports for keyboard and mouse, Serial (RJ45), 10/100 Ethernet remote management Media tray: One USB 2.0 port, connectable to any server (not sharable)
I/O architecture	**Up to four I/O modules** supporting either 1 Gb Ethernet (some modules with 10 Gb uplinks), 4 Gb or 8 Gb Fibre Channel, or 3Gb SAS connections for each of the 14 blade servers. Bays 1 & 2 route server's onboard Ethernet; bays 3 and 4 route CIOv or CFFv expansion adapter in each server.
Power modules	Up to **four hot-swap power modules**; Rear access; Supplies power to chassis components at 220V (110V not supported); Current models include 2000W or 2320W power modules; older models have lower capacity power modules and must be upgraded to support newer server models (some high-performance models are not supported even with upgraded power supplies for thermal reasons). Supports redundancy within pair. Power modules 1 and 2 supply power to blade bays 1-6. Power modules 3 and 4 support blade bays 7-14. Auto-restart.
Blower modules	**Two hot-swap blowers** standard and maximum. Hot-swap and redundant, variable speed, rear access, front to back airflow.
System LED panel	Front and rear. Provides power-on, location, over-temperature, information, and system-error conditions.
Declared sound level	6.9 bels with acoustic attenuation module 7.4 bels without acoustic attenuation module
Temperature	Operating air temperature 10°C to 35°C (50°F to 95°F) up to 900 m (3000 ft) 10°C to 32°C (50°F to 90°F) up to 2100 m (7000 ft)
Electrical power	Input power: 200 - 240 V ac (nominal), 50 or 60 Hz
Power consumption	6,938 watts maximum
Power cords	One 2.5m, 16A/100-240V, IEC 320-C19 to C20 Rack Power Cable supplied with each power module
Dimensions	▶ Height: 304 mm (12 in) (7U) ▶ Width: 444 mm (17.5 in) ▶ Depth: 711 mm (28 in)
Weight	38 to 102 kg (85 to 225 lb)
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension.

Popular and system-unique options: (see model table for processor options)

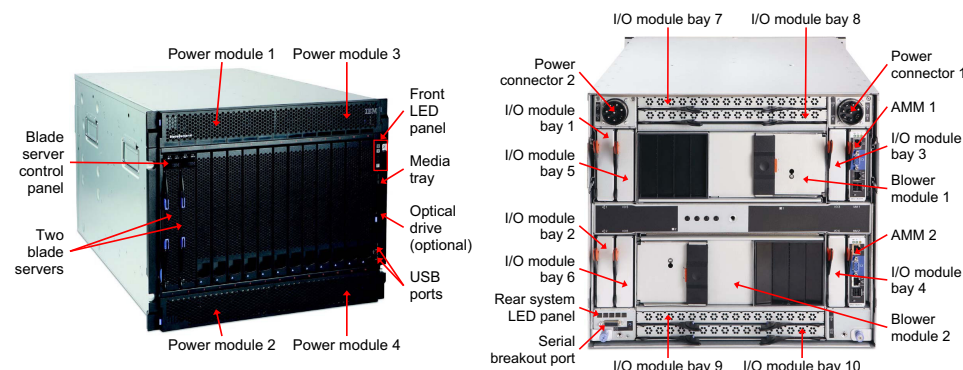| Part	Description
39Y9324	IBM Server Connectivity Module (1Gb Ethernet)
32R1860	IBM BladeCenter Layer 2/3 Copper GbE Switch Module
32R1859	IBM BladeCenter Layer 2-7 GbE Switch Module
44W4404	IBM BladeCenter 1/10 Gb Uplink Ethernet Switch Module
43W4395	Cisco Catalyst Switch Module 3012 for IBM BladeCenter
41Y8523	Cisco Catalyst Switch Module 3110G for IBM BladeCenter
41Y8522	Cisco Catalyst Switch Module 3110X for IBM BladeCenter
44X1920	Brocade 20-port 8 Gb SAN Switch Module
39Y9280	Cisco Systems 20-port 4 Gb FC Switch Module
44X1905	QLogic 20-Port 8 Gb SAN Switch Module
44X1907	QLogic 8 Gb Intelligent Pass-Thru Module
39Y9195	SAS Connectivity Module
2019A1X	Advanced Management Module
46M0508	IBM BladeCenter E 2320 W Power Supply Option
39M4674	IBM BladeCenter E Acoustic Attenuation Module

For more information and a list of all supported options, see *IBM BladeCenter Products and Technology* from IBM Redbooks: http://www.redbooks.ibm.com/abstracts/sg247523.html?Open

IBM BladeCenter H (withdrawn)

Model[1]	Server bays (14 max)	Advanced Mgmt Module	High-speed I/O Module bays	Standard I/O Module bays[a]	Bridge module bays	I/O modules standard	Power supplies (4 max)	Enhanced Blowers (2 max)	Optical drive	Announced / Withdrawn
8852-4Xx	14 available	1 standard / 2 max	4 total / 4 avail	4 total / 4 avail	2 total / 2 avail	None	2x 2900 W	2x Standard	DVD	Mar 2006 / Oct 2008
8852-4Sx	14 available	1 standard / 2 max	4 total / 4 avail	4 total / 4 avail	2 total / 2 avail	None	2x 2900 W	2x Standard	Optional	Jul 2009 / Mar 2011
8852-4Tx	14 available	1 standard / 2 max	4 total / 4 avail	4 total / 4 avail	2 total / 2 avail	None	2x 2980 W	2x Enhanced	Optional	Jul 2010 / Apr 2013

a. Two of these standard I/O module bays can be used as bridge module bays based on installed I/O modules

Components	Specification
Machine type	System x sales channel: 8852 Power Systems sales channel: 7989
Form factor	**9U rack-mounted unit**.
Maximum number of servers supported	**Up to 14 server blades** in 14 bays. Supports double-wide servers or servers with expansion blades.
Systems supported	All IBM BladeCenter servers.
Nodes per 42U rack	Up to **56 servers in four chassis**
Advanced Management Modules	One or two **Advanced Management Modules** (AMMs), hot-swap, rear access, comprehensive system management functions; PowerPC 440GP controller. Communicates with integrated system management processor on each server blade. Complete KVM switch local functionality.
Media tray	Two USB ports and optional Multiburner optical drive connectable to any one blade server; switchable via buttons on media tray or remote via the AMM web interface.
Ports	AMM: DB-15 analog video port, Dual USB 2.0 for keyboard and mouse, Serial (RJ45), 10/100 Ethernet remote management Media tray: Two USB 2.0 ports, connectable to any server (not sharable) Rear: Serial breakout port to supply 1 serial port for each blade bay
I/O architecture	**Up to four 10 Gb Ethernet or two 40 Gb InfiniBand connections**, **two 1 Gb connections**, and up to **two 8 Gb Fibre Channel** connections for each of the 14 blade servers. Supports a wide variety of networking solutions, including Ethernet, Virtual Fabric vNICs, Fibre Channel, Fibre Channel over Ethernet (FCoE), SAS, and InfiniBand.
Power modules	Up to **four hot-swap power modules**; Rear access; Supplies power to chassis components up to 2980W at 220V (110V not supported); Supports redundancy within pair. Power modules 1 and 2 supply power to blade bays 1-7. Power modules 3 and 4 support blade bays 8-14. Auto-restart, 3 fans per power module.
Blower modules	**Two Enhanced Cooling Modules** standard and maximum. Hot-swap and redundant, variable speed, rear access, front to back airflow. Older chassis models may require upgrades to Enhanced blowers to support newer servers.
System LED panel	Front and rear. Provides power-on, location, over-temperature, information, and system-error conditions.
Declared sound level	7.5 bels
Temperature	Operating air temperature 10°C to 35°C (50°F to 95°F) up to 900 m (3000 ft) 10°C to 32°C (50°F to 90°F) up to 2100 m (7000 ft)
Electrical power	Input power: 200 - 240 V ac (nominal), 50 or 60 Hz
Power consumption	9,600 watts maximum
Power cords	None standard; Requires two line cords. See *IBM BladeCenter Products and Technology.*
Dimensions	▶ Height: 400 mm (15.75 in) ▶ Width: 483 mm (19 in) ▶ Depth: 767 mm (29 in)
Weight	41 to 159 kg (90 to 350 lb)
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension.

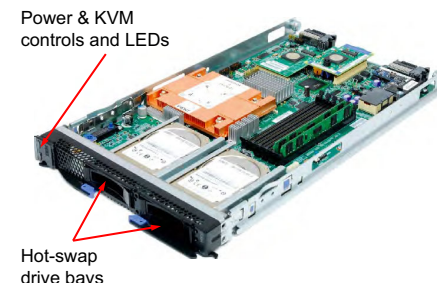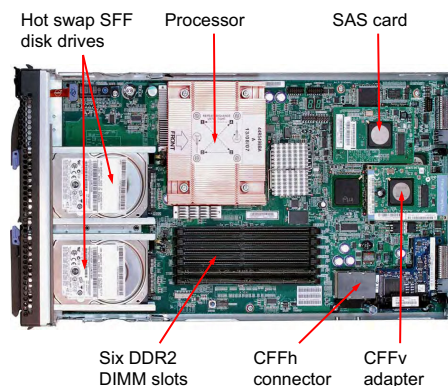**Popular and system-unique options:** (see model table for processor options)

Part	Description
46C7191	IBM BladeCenter Virtual Fabric 10Gb Switch Module
69Y1909	Brocade Converged 10 GbE Switch Module
39Y9324	IBM Server Connectivity Module (1Gb Ethernet)
46M6071	Cisco Nexus 4001I Switch Module
44X1920	Brocade 20-port 8 Gb SAN Switch Module
39Y9280	Cisco Systems 20-port 4 Gb FC Switch Module
44X1905	QLogic 20-Port 8 Gb SAN Switch Module
46M6172	QLogic Virtual Fabric Extension Module
39Y9195	SAS Connectivity Module
39Y9314	Multi-switch Interconnect Module for IBM BladeCenter
2019A1X	Advanced Management Module
40K9605	Serial Port Breakout Cable for IBM BladeCenter
68Y6650	IBM BladeCenter H Enhanced Cooling Modules (two modules)
68Y6601	IBM BladeCenter H 2980 W AC Power Modules with Fan Packs (two modules)
25R5783	4.3 m 208 V Double 30A NEMA L6-30P
25R5784	4.3 m 230 V Dual 32A IEC 309 P+N+G/16A IEC 320-C20
25R5785	2.8 m 200-240 V Triple 16A IEC 320-C20
25R5811	4.3 m 220 V Double 30A KSC 8305 (for South Korea)
25R5812	4.3 m 230 V Dual 32A AS/NZS 3112/16A IEC 320-C20 (for Australia/NZ)

For more information and a list of all supported options, see *IBM BladeCenter Products and Technology* from IBM Redbooks: http://www.redbooks.ibm.com/abstracts/sg247523.html?Open

IBM BladeCenter HS12 (withdrawn)

Model[1]	Processor (1 maximum)	Memory	Network	Disk adapter	Disk bays (used / max.)	Disks	I/O slots	Announced	Withdrawn[1]
8028-54x	Intel Xeon Processor X3323 2.50 GHz 4C 6 MB L2 1333 MHz 80 W	2x 1 GB / 24 GB	2x 1 Gb	SAS card	0 / 2 2.5" HS	Open	CFFv, CFFh	Jun 2010	Dec 2012
8028-56x	Intel Xeon Processor X3363 2.83 GHz 4C 12 MB L2 1333 MHz 80 W	2x 1 GB / 24 GB	2x 1 Gb	SAS card	0 / 2 2.5" HS	Open	CFFv, CFFh	Jun 2010	Dec 2012

Components	Specification
Form factor	Single-wide (30 mm).
Chassis support	BladeCenter H, BladeCenter E, BladeCenter HT, BladeCenter S, BladeCenter T.
Processor model	**One Intel Xeon Processor** up to 2.83 GHz with up to 1333-MHz FSB, **Quad Core**, EM64T.
Number of processors	One standard, one maximum.
L3 cache	**Up to 12 MB L3 cache**.
Chip set	Intel 5100 chip set.
Memory DIMM sockets	**Six DDR2 DIMM slots**. PC2-5300 VLP 667-MHz double data rate (DDR2) ECC memory.
Maximum memory	24 GB using 4 GB DIMMs.
Expansion slots	One CFFv slot (PCI-X): Two ports. One CFFh slot (PCI Express: Four ports. Optional PCI Express I/O Expansion Unit for additional full-length PCIe slots.
Disk controller	**LSI Logic 1064E SAS controller** installed on a SAS interface card installed on a dedicated connector, 3 Gbps, PCIe host interface, RAID 0 and 1 support.
Disk bays	**Two hot-swap 2.5-inch SFF bays** supporting SAS, NL SAS, and NL SATA HDDs.
Maximum internal storage	Up to 2 TB of total internal storage (using 1-TB NL SAS or NL SATA drives).
Network interface	**Two 1 GB Ethernet** using a **Broadcom BCM5714S** onboard NIC; supports TOE, failover, and load balancing, Wake on LAN, PXE boot.
Hot-swap parts	Internal storage bays.
Systems management	IBM Baseboard Management Controller (BMC), H8S2166, on blade. Provides system and environmental monitoring, event recording, alert capability. RS-485 interface for intermanagement communication with BladeCenter Management module, light path diagnostics, IBM Systems Director, and IBM ServerGuide.
Video	ATI ES1000 (RN50) controller with 32 MB of DDR video memory.
Security	Power-on password, administrator password, unattended boot, selectable boot, unattended start mode.
Operating systems supported	Microsoft Windows, Red Hat Enterprise Linux, SUSE Linux Enterprise, VMware, Oracle Solaris.
Limited warranty	Three-year customer replaceable unit and on-site and off-site limited warranty.

Hot swap SFF disk drives — Processor — SAS card
Power & KVM controls and LEDs
Six DDR2 DIMM slots — CFFh connector — CFFv adapter
Hot-swap drive bays

Popular and system-unique options:

Part	Description
46C0512	4 GB (2x 2 GB) DDR2-RDIMM 667 MHz
46C0513	8 GB (2x 4 GB) DDR2-RDIMM 667 MHz
43W3974	SAS Connectivity Card
46C7167	ServeRAID MR10ie RAID Controller
81Y9650	IBM 900 GB 10K 6 Gbps SAS 2.5-inch SFF HS HDD
81Y9690	IBM 1TB 7.2K 6 Gbps NL SAS 2.5-inch SFF HS HDD
43W4391	PCI Express I/O Expansion Unit

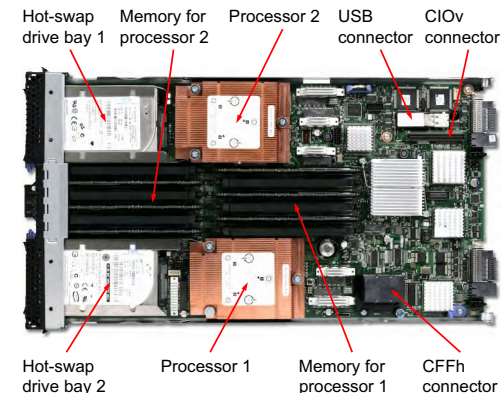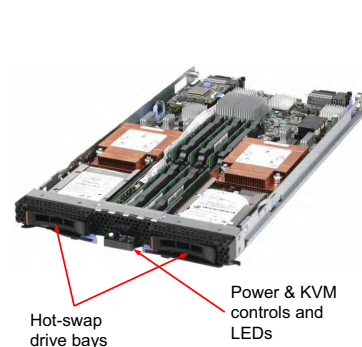For a list of all supported options, see the *IBM System x Configuration and Options Guide* at:
http://www.ibm.com/systems/xbc/cog/

IBM BladeCenter HS22 (withdrawn)

Model[1]	Processor (2 maximum)	Second CPU	Memory	Network	Disk adapter	Disk bays (used / max.)	Disks	I/O slots (used / max.)	Announced / Withdrawn
7870-B4x	1x Xeon E5540 2.53 GHz 80W 1066 MHz		2x 2 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Mar 2009 / March 2013
7870-G2x	1x Xeon E5620 4C 2.40 GHz 12 MB 1066 MHz 80 W	59Y5705	3x 2 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Mar 2010 / Dec 2013
7870-M2x	1x Xeon L5518 4C 2.13 GHz 8 MB 1066 MHz 60 W	49Y5052	2x 2 GB / 96 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Aug 2009 / Dec 2012
7870-N2x	1x Xeon L5640 6C 2.26 GHz 12 MB 1333 MHz 60 W	59Y5706	3x 2 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Mar 2010 / Dec 2012
7870-B6x	1x Xeon E5649 6C 2.53 GHz 12 MB 1333 MHz 80 W	81Y9327	3x 4 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Mar 2010 / Dec 2012
7870-H2x	1x Xeon X5650 6C 2.66 GHz 12 MB 1333 MHz 95 W	59Y5709	3x 2 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Mar 2010 / Dec 2012
7870-A5x	1x Xeon E5603 4C 1.60 GHz 4 MB 1066 MHz 80 W	81Y9323	1x 4 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7870-A7x	1x Xeon E5607 4C 2.26 GHz 8 MB 1066 MHz 80 W	81Y9325	1x 4 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7870-B5x	1x Xeon X5647 4C 2.93 GHz 12 MB 1066 MHz 130 W	81Y9326	3x 4 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7870-C5x	1x Xeon X5672 4C 3.20 GHz 12 MB 1333 MHz 95 W	81Y9328	3x 4 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7870-C7x	1x Xeon X5687 4C 3.60 GHz 12 MB 1333 MHz 130 W	81Y9330	3x 4 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7870-C6x	1x Xeon X5675 6C 3.06 GHz 12 MB 1333 MHz 95 W	81Y9329	3x 4 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7870-C8x	1x Xeon X5690 6C 3.46 GHz 12 MB 1333 MHz 130 W	81Y9331	3x 4 GB / 192 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7870-D4x	1x Xeon E5649 6C 2.53 GHz 12 MB 1333 MHz 80 W	81Y9327	3x 4 GB / 192 GB	2x 1 Gb + 2x 10 Gb[a]	SAS RAID	0 / 2	Open	1 / 2	Jul 2011 / Dec 2012
7870-91x	2x Xeon E5645 6C 2.40 GHz 12 MB 1333 MHz 80 W	Both standard	3x 8 GB / 192 GB	2x 1 Gb + 2x 10 Gb[a]	SAS RAID	0 / 2	Open	1 / 2	Aug 2011 / Dec 2012
7870-92x	2x Xeon E5645 6C 2.40 GHz 12 MB 1333 MHz 80 W	Both standard	3x 8 GB / 192 GB	2x 1 Gb + 2x 10 Gb[b]	SAS RAID	0 / 2	Open	1 / 2	Aug 2011 / Dec 2012

a. Models D4x and 91x include an Emulex 10 GbE Virtual Fabric Adapter Advanced II (CFFh).
b. Model 92x includes a QLogic 2-port 10 Gb Converged Network Adapter (CFFh).

Components	Specification
Form factor	Single-wide (30 mm).
Chassis support	BladeCenter H, BladeCenter E, BladeCenter HT, BladeCenter S. Support is limited for 130 W processors and in the BladeCenter E. For details, see the *IBM BladeCenter HS22 Product Guide*.
Processor model	**Intel Xeon 5600 series processors**, up to 3.6 GHz. Intel Xeon 5500 series processors, up to 2.53 GHz.
Number of processors	One standard, two maximum.
L3 cache	**Up to 12 MB L3 cache**.
Chip set	Intel 5520 chip set.
Memory DIMMs	**12x DDR-3 VLP DIMM slots**.
Maximum memory	Models with Intel Xeon 5600 series processors: **192 GB using 16 GB DIMMs**. Models with Intel Xeon 5500 series processors: 96 GB using 8 GB DIMMs.
Expansion slots	One CIOv slot: two ports. One CFFh slot: four ports.
Disk controller	LSI Logic 1064E **SAS 3 GBps controller**, supports RAID 0 and RAID 1. Optional ServeRAID MR10ie with battery-backed write cache for internal and external disk drives.
Disk bays (total/hot-swap)	**Two hot-swap 2.5-inch SFF bays** supporting SAS HDDs or solid-state drives.
Maximum internal storage	**Up to 2 TB of total internal storage** (using 1-TB NL SAS or NL SATA drives).
Network interface	**Two 1 GB Ethernet** using a **Broadcom BCM5709S** onboard NIC; supports TOE, failover and load balancing, Wake on LAN, PXE boot. Certain models include an Emulex 10 GbE Virtual Fabric Adapter Advanced II (CFFh) or QLogic 2-port 10 Gb Converged Network Adapter (CFFh) as listed in the model table.
Hot-swap parts	Internal storage bays.
Systems management	**Unified Extensible Firmware Interface** (UEFI), IBM integrated management module (IMM), Predictive Failure Analysis, optional embedded hypervisor for virtualization, IBM Systems Director Active Energy Manager, light path diagnostics, IBM Systems Director, and IBM ServerGuide.
Video	Matrox G200eV video core with 16 MB of video memory.
Security	Trusted Platform Module, power-on password, administrator password, unattended boot, selectable boot, and unattended start mode.
Operating systems supported	Microsoft Windows, Red Hat Enterprise Linux, SUSE Linux Enterprise, VMware, Oracle Solaris.
Limited warranty	Three-year customer replaceable unit and on-site and off-site limited warranty.

Hot-swap drive bay 1 — Memory for processor 2 — Processor 2 — USB connector — CIOv connector

Hot-swap drive bays — Power & KVM controls and LEDs

Hot-swap drive bay 2 — Processor 1 — Memory for processor 1 — CFFh connector

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1428	2GB (1x 2GB, 2Rx8, 1.5V) PC3-10600 CL9 ECC DDR3 1333
46C0563	4GB (1x 4GB, 1Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333
46C0568	8GB (1x 8GB, 2Rx4, 1.35V) PC3-10600 CL9 ECC DDR3 1333
46C0569	8GB (1x 8GB, 2Rx4, 1.35V) PC3-8500 CL7 ECC DDR3 1066
46C0599	16GB (1x16 GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333
49Y2003	IBM 600GB 10K 6Gbps SAS 2.5" SFF Slim-HS HDD
81Y9690	IBM 1TB 7.2K 6 Gbps NL SAS 2.5-inch SFF HS HDD
46C7167	ServeRAID-MR10ie (CIOv) Controller with battery
46M6730	IBM BladeCenter PCI Express Gen 2 Expansion Blade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS22*: http://www.redbooks.ibm.com/abstracts/tips0822.html?Open
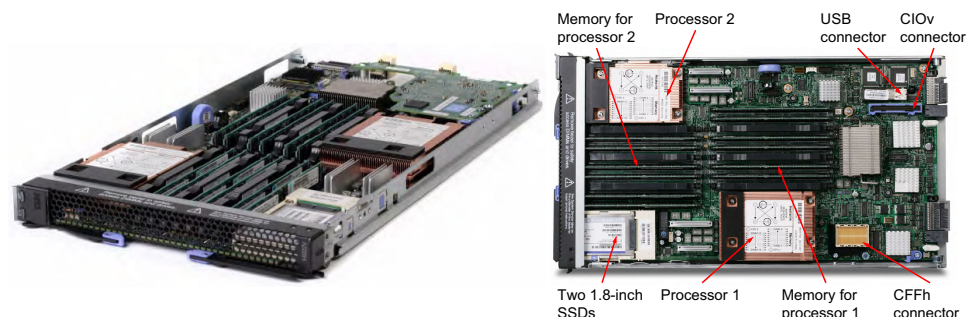
IBM BladeCenter HS22V (withdrawn)

Model[1]	Processor (2 maximum)	Second CPU	Memory	Network	Disk adapter	Disk bays (used / max)	Disks	I/O slots (used / max.)	Announced
7871-G2x	1x Xeon E5620 4C 2.40 GHz 12 MB 1066 MHz 80 W	69Y0925	3x 2 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Mar 2010 / Jun 2013
7871-B4x	1x Xeon E5540 4C 2.53 GHz 8 MB 1066 MHz 80 W	49Y5163	3x 2 GB / 144 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2010 / Dec 2012
7871-C4x	1x Xeon X5570 4C 2.93 GHz 8 MB 1333 MHz 95 W	49Y5172	3x 2 GB / 144 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2010 / Dec 2012
7871-N2x	1x Xeon L5640 6C 2.26 GHz 12 MB 1333 MHz 60 W	69Y0928	3x 2 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Mar 2010 / Dec 2012
7871-H2x	1x Xeon X5650 6C 2.66 GHz 12 MB 1333 MHz 95 W	69Y0924	3x 2 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Mar 2010 / Dec 2012
7871-HXx[a]	2x Xeon X5660 6C 2.8 GHz 12 MB 1333 MHz 95 W	69Y0923	18x 4 GB / 288 GB	2x 1 Gb + 2x 10 Gb + 2x 8 GB FC[a]	SAS RAID	0 / 2	Open	2 / 2	May 2010 / Dec 2012
7871-A5x	1x Xeon E5603 4C 1.60 GHz 4 MB 1066 MHz 80 W	81Y6038	1x 4 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7871-A7x	1x Xeon E5607 4C 2.26 GHz 8 MB 1066 MHz 80 W	81Y6040	1x 4 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7871-B5x	1x Xeon X5647 4C 2.93 GHz 12 MB 1066 MHz 130 W	81Y6041	3x 4 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7871-B6x	1x Xeon X5649 6C 2.53 GHz 12 MB 1333 MHz 80 W	81Y6042	3x 4 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7871-C5x	1x Xeon X5672 4C 3.20 GHz 12 MB 1333 MHz 95 W	81Y6043	3x 4 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7871-C6x	1x Xeon X5675 6C 3.06 GHz 12 MB 1333 MHz 95 W	81Y6044	3x 4 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7871-C7x	1x Xeon X5687 4C 3.60 GHz 12 MB 1333 MHz 130 W	81Y6045	3x 4 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7871-C8x	1x Xeon X5690 6C 3.46 GHz 12 MB 1333 MHz 130 W	81Y6046	3x 4 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Feb 2011 / Dec 2012
7871-D4x	1x Xeon E5649 6C 2.53 GHz 12 MB 1333 MHz 80 W	81Y6042	3x 4 GB / 288 GB	2x 1 Gb	SAS RAID	0 / 2	Open	0 / 2	Jul 2011 / Dec 2012
7871-91x	2x Xeon E5649 6C 2.53 GHz 12 MB 1333 MHz 80 W	81Y6042	12x 8 GB / 288 GB	2x 1 Gb + 2x 10 Gb[b]	SAS RAID	0 / 2	Open	1 / 2	Aug 2011 / Dec 2012
7871-92x	2x Xeon E5649 6C 2.53 GHz 12 MB 1333 MHz 80 W	81Y6042	12x 8 GB / 288 GB	2x 1 Gb + 2x 10 Gb[b]	SAS RAID	0 / 2	Open	1 / 2	Aug 2011 / Dec 2012
7871-E2U	2x Xeon E5649 6C 2.53 GHz 12 MB 1333 MHz 80 W	Included	6x 8GB 1333MHz	2x 1 GbE	SAS RAID	0 / 2	Open	0 / 2	Mar 2011 / Sep 2012
7871-E3U	2x Xeon X5675 6C 3.06 GHz 12 MB 1333 MHz 95 W	Included	12x 8GB 1333MHz	2x 1 GbE	SAS RAID	0 / 2	Open	0 / 2	Mar 2011 / Sep 2012

a. Model HXx includes VMware ESX 4 hypervisor on an embedded USB memory key, Broadcom 10 GB Gen 2 2-port Ethernet Expansion Card (CFFh) installed in the CFFh expansion slot and QLogic 8 GB Fibre Channel Expansion Card (CIOv) installed in the CIOv expansion slot.
b. Model 91x includes an Emulex 10 GBE Virtual Fabric Adapter Advanced II (CFFh); Model 92x includes a Qlogic 2-port 10 GB Converged Network Adapter (CFFh).

Components	Specification
Form factor	Single-wide (30 mm).
Processor models	**Intel Xeon 5600 series processors**, up to 3.6 GHz. Intel Xeon 5500 series processors, up to 2.93 GHz.
Processors	One standard, two maximum.
L3 cache	**Up to 12 MB L3 cache**.
Chip set	Intel 5520 chip set.
Memory DIMM sockets	**18x DDR-3 VLP DIMM slots**.
Maximum memory	Xeon 5600 processors: **288 GB using 16 GB DIMMs** (144 GB per processor). Xeon 5500 processors: 144 GB using 8 GB DIMMs (72 GB per processor).
Expansion slots	One CIOv slot (two ports) and one CFFh slot (four ports).
Disk controller	LSI Logic 1064E SAS 3 GBps controller, support for RAID 0 and RAID 1. Optional ServeRAID MR10ie with battery-backed write cache for internal and external disk drives.
Disk bays	**Two non-hot-swap 1.8-inch bays** supporting two solid-state drives.
Maximum internal storage	Up to 400 GB of total internal storage (using two 200 GB SSDs).
Hypervisor port	**One USB port for embedded hypervisor**.
Network interface	**Two 1 GB Ethernet** using a **Broadcom BCM5709S** onboard NIC; supports TOE, failover and load balancing, Wake on LAN, PXE boot. Some models also include a 2-port 10 GB controller installed in the CFFh slot (Emulex 10 GbE Virtual Fabric Adapter Advanced II or QLogic 2-port 10 GB Converged Network Adapter, depending on the model).
Hot-swap parts	None.
Systems management	Unified Extensible Firmware Interface (UEFI), IBM integrated management module (IMM), Predictive Failure Analysis, optional embedded hypervisor for virtualization, IBM Systems Director Active Energy Manager, light path diagnostics, IBM Systems Director, and IBM ServerGuide.
Video	Matrox G200eV video core with 16 MB of video memory.
Security	Trusted Platform Module, power-on password, administrator password, unattended boot, selectable boot, and unattended start mode.

Components	Specification
Operating systems supported	Microsoft Windows, Red Hat Enterprise Linux, SUSE Linux Enterprise, VMware, Oracle Solaris.
Limited warranty	Three-year customer replaceable unit, and on-site and offsite limited warranty.

Memory for processor 2   Processor 2   USB connector   CIOv connector

Two 1.8-inch SSDs   Processor 1   Memory for processor 1   CFFh connector

Popular and system-unique options (see the model table for processor options):

Part	Description
49Y1430	4GB (1x 4GB, 2Rx4, 1.5 V) PC3-10600 CL9 ECC DDR3 1333 MHz
49Y1431	8GB (1x 8GB, 2Rx4, 1.5V) PC3-10600 CL9 ECC DDR3 1333 MHz
46C0568	8GB (1x 8GB, 2Rx4, 1.35V) PC3-10600 CL9 ECC DDR3 1333 MHz
46C0599	16GB (1x16 GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333 MHz
43W7726	IBM 50 GB SATA 1.8" MLC SSD
43W7746	IBM 200 GB SATA 1.8" MLC SSD
41Y8287	IBM USB Memory Key for VMware Hypervisor (ESXi 4.1)
43W4391	IBM BladeCenter PCI Express I/O Expansion Unit

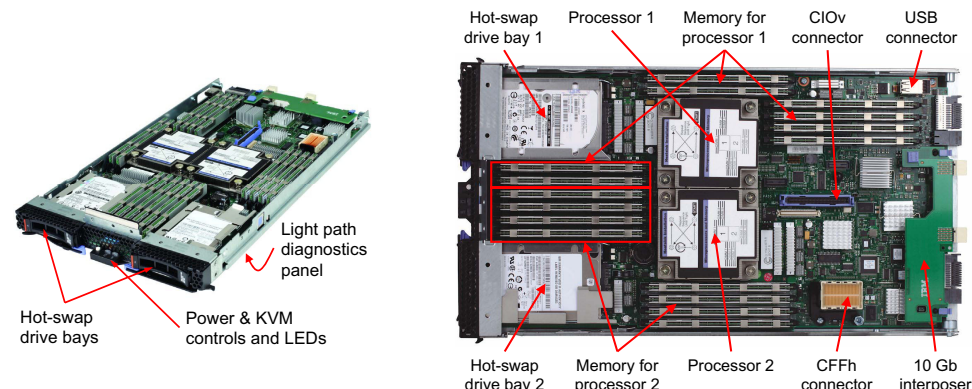For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS22V* http://www.redbooks.ibm.com/abstracts/tips0823.html?Open

IBM BladeCenter HS23 (withdrawn)

Model[1]	Intel Xeon processor (2 maximum)	Second CPU	Memory and speed	Disk adapter	Disk bays (used / max.)	Disks	Network	I/O slots (used / max.)	Announced / Withdrawn
7875-A1x	1x Xeon E5-2603 4C 1.8 GHz 10 MB 1066 MHz 80 W	81Y9292	1x 4 GB 1066 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE	0 / 2	Mar 2012 / Jun 2014
7875-A2x	1x Xeon E5-2609 4C 2.4 GHz 10 MB 1066 MHz 80 W	81Y9294	4x 4 GB 1066 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE	0 / 2	Mar 2012 / Jun 2014
7875-B2x	1x Xeon E5-2640 6C 2.5 GHz 15 MB 1333 MHz 95 W	94Y8571	4x 4 GB 1333 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Jun 2014
7875-B3x	1x Xeon E5-2630 6C 2.3 GHz 15 MB 1333 MHz 95 W	94Y8572	4x 4 GB 1333 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Jun 2014
7875-C1x	1x Xeon E5-2650 8C 2.0 GHz 20 MB 1600 MHz 95 W	81Y9298	4x 4 GB 1600 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Jun 2014
7875-C2x	1x Xeon E5-2660 8C 2.2 GHz 20 MB 1600 MHz 95 W	81Y9299	4x 4 GB 1600 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Dec 2012
7875-C3x	1x Xeon E5-2665 8C 2.4 GHz 20 MB 1600 MHz 115 W	94Y8671	4x 4 GB 1600 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Jun 2014

a. These models include the 10 GB interposer card for HS23, part number 94Y8550. This card routes the onboard 10 GBE to chassis bays 7 and 9 in BladeCenter H and HT.
b. The 10 GB interposer card in these models provides the same midplane connectors as the adapter installed in the CFFh slot (if any). To use the CFFh slot, you must first remove the interposer card.

Components	Specification
Form factor	Single-wide (30 mm) blade server.
Chassis support	BladeCenter H, BladeCenter HT, and BladeCenter S supported. BladeCenter E has limited support. For details, see the *IBM Redbooks Product Guide* for *IBM BladeCenter HS23*.
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight-core (up to 2.7 GHz) or six-core (up to 2.9 GHz) or quad-core (up to 2.4 GHz) or dual-core (up to 3.0 GHz). Two QPI links up to 8.0 GT/s each. **Up to 1600 MHz of memory speed**. Up to 20 MB L3 cache.
Chip set	Intel C600.
Memory	**Up to 16 DDR3 DIMM sockets** (eight DIMMs per processor) using very low profile (VLP) DIMMs. Support for up to 1600 MHz of memory speed depending on the processor. Four memory channels per processor (two DIMMs per channel).
Memory maximums	**Up to 256 GB** with 16x 16 GB RDIMMs and two processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Two 2.5" hot-swap SAS/SATA drive bays supporting SAS, SATA, and SSD drives.
Maximum internal storage	Up to 1.8 TB with 900 GB 2.5" SAS HDDs, up to **2 TB with 1 TB 2.5" NL SAS HDDs**, up to 2 TB with 1-TB 2.5" SATA HDDs, or up to 512 GB with 256 GB 2.5" SATA SSDs. Intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller.
Network interfaces	Two Gigabit Ethernet ports and **two 10 Gb Ethernet ports** with integrated **Emulex BladeEngine 3 (BE3)** controller.
PCI expansion slots	One CIOv slot (PCIe 3.0 x8) and one CFFh slot (PCIe 3.0 x16). Two additional PCIe 2.0 x8 standard form factor slots with the **optional PCI Express Gen 2 Expansion Blade II** (slot 1 is full height and full length; slot 2 is full height and half length). One HS23 supports up to four PCIe expansion blades (eight slots). Up to four optional GPU expansion blades with NVIDIA Tesla M2090, M2075, or M2070Q graphics processing units.
Ports	One internal USB port (for **embedded hypervisor**).
Systems management	UEFI, IBM **Integrated Management Module 2** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel on the underside of the blade, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide.
Security features	Power-on password, administrator password, and Trusted Platform Module 1.2.
Video	Matrox G200eR2 video core with 16-MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors (32 bits per pixel).
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008 x64, Red Hat Enterprise Linux 5 and 6 (x64), SUSE Linux Enterprise Server 10 and 11 (for AMD64/EM64T), VMware vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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	Height: 245 mm (9.7 in), width: 29 mm (1.14 in), depth: 446 mm (17.6 in).
Weight	Maximum configuration (single-wide blade): 5.4 kg (12 lb).

Hot-swap drive bay 1 Processor 1 Memory for processor 1 CIOv connector USB connector

Light path diagnostics panel

Hot-swap drive bays

Power & KVM controls and LEDs

Hot-swap drive bay 2 Memory for processor 2 Processor 2 CFFh connector 10 Gb interposer

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3149	8 GB (2Gb, 2Rx4, 1.5 V) PC3-12800 CL11 ECC DDR3 1600 MHz VLP RDIMM
46C0599	16 GB (1x 16 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz VLP
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF HS HDD
81Y9650	IBM 900 GB 10K 6 Gbps SAS 2.5-inch HS HDD
43W7718	IBM 200 GB SATA 2.5-inch SFF Slim-HS SSD
41Y8300	IBM USB Memory Key for VMware ESXi 5.0
94Y8550	10 Gb Interposer Card for IBM BladeCenter HS23
81Y3120	Emulex 10GbE Virtual Fabric Adapter II (CFFh) for HS23
90Y9332	Emulex 10GbE Virtual Fabric Adapter Advanced II (CFFh) for HS23
68Y7484	IBM BladeCenter PCI Express Gen 2 Expansion Blade II
68Y7478	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2075
68Y7479	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2070Q
00D6881	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2090

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS23*:
http://www.redbooks.ibm.com/abstracts/tips0843.html?Open

IBM BladeCenter HS23 (withdrawn)

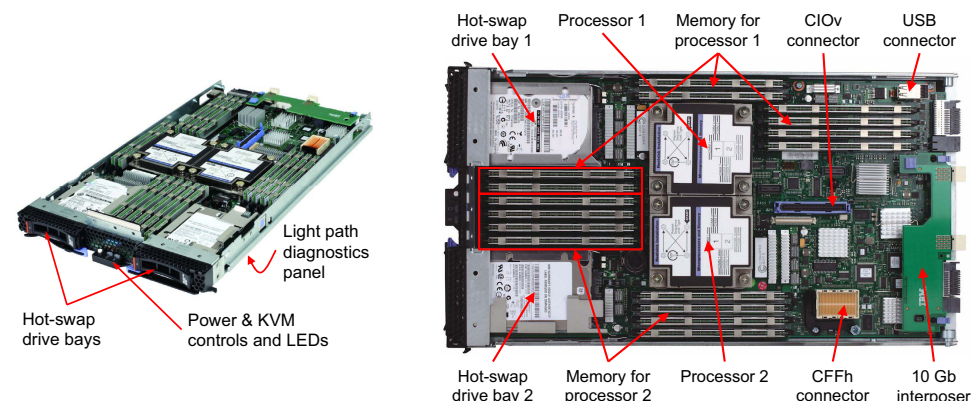| Model[1]	Processor (2 maximum)	Second CPU	Memory & speed	RAID controller	Disk bays (used / max.)	Disks	Network	I/O slots (used/max)	Announced / Withdrawn
7875-C4x	1x Xeon E5-2670 8C 2.6 GHz 20 MB 1600 MHz 115 W	94Y8589	4x 4 GB 1600 MHz	LSI SAS2004	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Jun 2014
7875-C5x	1x Xeon E5-2680 8C 2.7 GHz 20 MB 1600 MHz 130 W	81Y9300	4x 4 GB 1600 MHz	LSI SAS2004	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Dec 2012
7875-C6x	1x Xeon E5-2650 8C 2.0 GHz 20 MB 1600 MHz 95W	81Y9298	4x 8 GB 1600 MHz	LSI SAS2004	0 / 2	Open	2x 1GbE + 2x 10GbE[a]	1 / 2[b]	Oct 2012 / Jun 2014
7875-C7x	1x Xeon E5-2660 8C 2.2 GHz 20 MB 1600 MHz 95W	81Y9299	4x 8 GB 1600 MHz	LSI SAS2004	0 / 2	Open	2x 1GbE + 2x 10GbE[a]	1 / 2[b]	Oct 2012 / Jun 2014
7875-C8x	1x Xeon E5-2680 8C 2.7 GHz 20 MB 1600 MHz 130W	81Y9300	4x 8 GB 1600 MHz	LSI SAS2004	0 / 2	Open	2x 1GbE + 2x 10GbE[a]	1 / 2[b]	Oct 2012 / Jun 2014
7875-D1x	1x Xeon E5-2650L 8C 1.8 GHz 20 MB 1600 MHz 70 W	81Y9305	4x 4 GB 1333 MHz	LSI SAS2004	0 / 2	Open	2x 1GbE + 2x 10GbE[a]	1 / 2[b]	Mar 2012 / Jun 2014
7875-G1x[c]	1x E5-2630 6C 2.3 GHz 15 MB 1333 MHz 95 W	94Y8572	4x 4 GB 1333 MHz	LSI SAS2004	0 / 2	Open	2x 1GbE + 4x 10GbE Adv[c]	1 / 2	Mar 2012 / Jun 2014
7875-G2x[c]	1x E5-2670 8C 2.6 GHz 20 MB 1600 MHz 115 W	94Y8589	4x 4 GB 1600 MHz	LSI SAS2004	0 / 2	Open	2x 1GbE + 4x 10GbE Adv[c]	1 / 2	Mar 2012 / Jun 2014

a. These models include the 10 GB interposer card for HS23, part number 94Y8550. This card routes the onboard 10 GbE to chassis bays 7 and 9 in BladeCenter H and HT.
b. The 10 GB interposer card in these models provides the same midplane connectors as the adapter installed in the CFFh slot (if any). To use the CFFh slot, you must first remove the interposer card.
c. Models G1x and G2x are optimized for IBM Virtual Fabric. They come standard with the Emulex 10GbE Virtual Fabric Adapter Advanced II (CFFh) for HS23 and IBM Virtual Fabric Advanced Software Upgrade (LOM) to enable IBM Virtual Fabric with support for FCoE and iSCSI across four 10 GB Ethernet ports.

Components	Specification
Form factor	Single-wide (30 mm) blade server.
Chassis support	BladeCenter H, BladeCenter HT, and BladeCenter S supported. BladeCenter E has limited support. For details, see the *IBM Redbooks Product Guide* for *IBM BladeCenter HS23*.
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight-core (up to 2.7 GHz), six-core (up to 2.9 GHz), quad-core (up to 2.4 GHz), or dual-core (up to 3.0 GHz). Two QPI links up to 8.0 GT/s each. **Up to 1600 MHz of memory speed**. Up to 20 MB L3 cache.
Chip set	Intel C600.
Memory	**Up to 16 DDR3 DIMM sockets** (eight DIMMs per processor) using very low profile (VLP) DIMMs. Support for up to 1600 MHz of memory speed depending on the processor. Four memory channels per processor (two DIMMs per channel).
Memory maximums	**Up to 256 GB** with 16x 16 GB RDIMMs and two processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Two 2.5" hot-swap SAS/SATA drive bays supporting SAS, SATA, and SSD drives.
Maximum internal storage	Up to 1.8 TB with 900 GB 2.5" SAS HDDs, up to **2 TB with 1-TB 2.5" NL SAS HDDs**, up to 2 TB with 1-TB 2.5" SATA HDDs, or up to 512 GB with 256 GB 2.5" SATA SSDs. Intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller.
Network interfaces	Two Gigabit Ethernet ports and **two 10 GB Ethernet ports** with integrated Emulex BladeEngine 3 (BE3) controller.
PCI expansion slots	One CIOv slot (PCIe 3.0 x8) and one CFFh slot (PCIe 3.0 x16). Two additional PCIe 2.0 x8 standard form factor slots with the **optional PCI Express Gen 2 Expansion Blade II** (slot 1 is full height and full length; slot 2 is full height and half length). One HS23 supports up to four PCIe expansion blades (eight slots). Up to four optional GPU expansion blades with NVIDIA Tesla M2090, M2075, or M2070Q graphics processing units.
Ports	One internal USB port (for **embedded hypervisor**).
Systems management	UEFI, IBM Integrated Management Module 2 (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel on the underside of the blade, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide.
Security features	Power-on password, administrator's password, and TPM 1.2.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors (32 bits per pixel).
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008 x64, Red Hat Enterprise Linux 5 and 6 (x64), SUSE Linux Enterprise Server 10 and 11 (for AMD64/EM64T), VMware vSphere 5.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.

Components	Specification
Dimensions	Height: 245 mm (9.7 in), width: 29 mm (1.14 in), depth: 446 mm (17.6 in).
Weight	Maximum configuration (single-wide blade): 5.4 kg (12 lb).

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3149	8 GB (2Gb, 2Rx4, 1.5 V) PC3-12800 CL11 ECC DDR3 1600 MHz VLP RDIMM
46C0599	16 GB (1x 16 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz VLP
81Y9650	IBM 900 GB 10K 6 Gbps SAS 2.5-inch HS HDD
43W7718	IBM 200 GB SATA 2.5-inch SFF Slim-HS SSD
41Y8300	IBM USB Memory Key for VMware ESXi 5.0
94Y8550	10 Gb Interposer Card for IBM BladeCenter HS23
90Y9310	IBM Virtual Fabric Advanced Software Upgrade (LOM)
81Y3120	Emulex 10GbE Virtual Fabric Adapter II (CFFh) for HS23
90Y9332	Emulex 10GbE Virtual Fabric Adapter Advanced II (CFFh) for HS23
68Y7484	IBM BladeCenter PCI Express Gen 2 Expansion Blade II
68Y7478	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2075
68Y7479	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2070Q
00D6881	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2090

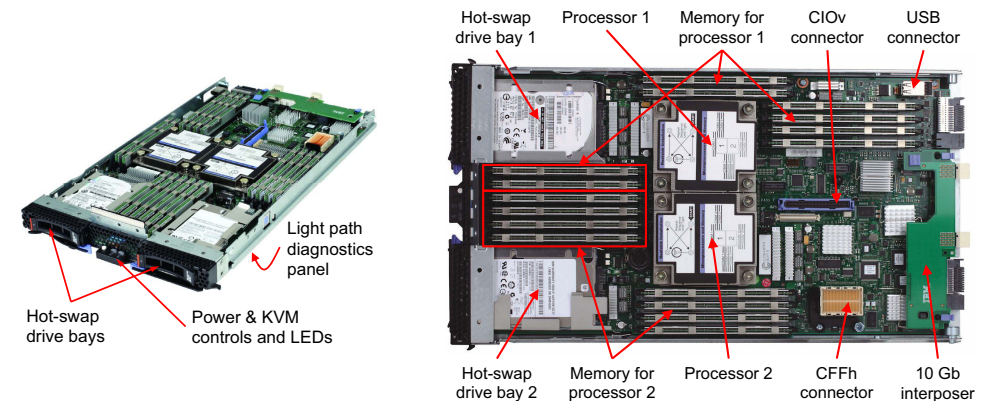For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS23*: http://www.redbooks.ibm.com/abstracts/tips0843.html?Open

IBM BladeCenter HS23 (withdrawn)

Model[1]	Intel Xeon Processor (2 maximum)	Second CPU	Memory & speed	Disk adapter	Disk bays (used / max.)	Disks	Network	I/O slots (used/max)	Announced / Withdrawn
7875-91x[a]	2x E5-2620 6C 2.0 GHz 15 MB 1333 MHz 95 W	Standard	16x 8 GB 1333 MHz	SAS/SATA RAID	0 / 2	Open	2x 1GbE + 2x 10GbE Adv[a,b]	1 / 2[c]	Mar 2012 / Mar 2013
7875-92x[a]	2x E5-2650 8C 2.0 GHz 20 MB 1600 MHz 95 W	Standard	16x 8 GB 1600 MHz	SAS/SATA RAID	0 / 2	Open	2x 1GbE + 2x 10GbE Adv[a,b]	1 / 2[c]	Mar 2012 / Mar 2013
7875-93x[d]	2x E5-2650 8C 2.0 GHz 20 MB 1600 MHz 95W	Standard	16x 8GB / 256 GB	SAS/SATA RAID	0 / 2	Open	2x 1GbE + 2x 10GbE Adv[d,e]	1 / 2[f]	Oct 2012 / Dec 2013

a. Models 91x, 92x, and 93x are optimized for IBM BladeCenter Foundations for Cloud workloads. They include IBM Virtual Fabric Advanced Software Upgrade (LOM), 90Y9310, which enables FCoE and iSCSI on the onboard two-port 10 GB controller. They also include one year of IBM Systems Director service and support. 91x and 92x include an IBM USB Memory Key for VMware ESXi 5.0 (41Y8300). 93x includes IBM USB Memory Key for VMware ESXi 5.0 Update1 (41Y8307).
b. These models include the 10 GB interposer card for HS23, part number 94Y8550. This card routes the onboard 10 GbE to chassis bays 7 and 9 in BladeCenter H and HT.
c. The 10 GB interposer card in these models provides the same midplane connectors as the adapter installed in the CFFh slot (if any). To use the CFFh slot, you must first remove the interposer card.
d. These models are optimized for IBM BladeCenter Foundations for Cloud workloads. They include IBM Virtual Fabric Advanced Software Upgrade (LOM), 90Y9310, which enables FCoE and iSCSI on the onboard two-port 10 GB controller. They also include one year of IBM Systems Director service and support. 91x and 92x include an IBM USB Memory Key for VMware ESXi 5.0 (41Y8300). 93x includes IBM USB Memory Key for VMware ESXi 5.0 Update1 (41Y8307).
e. These models include the 10 GB interposer card for HS23, part number 94Y8550. This card routes the onboard 10 GbE to chassis bays 7 and 9 in BladeCenter H and HT.
f. The 10 GB interposer card in these models provides the same midplane connectors as the adapter installed in the CFFh slot (if any). To use the CFFh slot, you must first remove the interposer card.

Components	Specification
Form factor	Single-wide (30 mm) blade server.
Chassis support	BladeCenter H, BladeCenter HT, and BladeCenter S supported. BladeCenter E has limited support. For details, see the *IBM Redbooks Product Guide* for *IBM BladeCenter HS23*.
Processor	Up to two **Intel Xeon Processor E5-2600** product family processors with eight-core (up to 2.7 GHz), six-core (up to 2.9 GHz), quad-core (up to 2.4 GHz), or dual-core (up to 3.0 GHz). Two QPI links up to 8.0 GT/s each. **Up to 1600 MHz of memory speed**. Up to 20 MB L3 cache.
Chip set	Intel C600.
Memory	**Up to 16 DDR3 DIMM sockets** (eight DIMMs per processor) using very low profile (VLP) DIMMs. Support for up to 1600 MHz of memory speed depending on the processor. Four memory channels per processor (two DIMMs per channel).
Memory maximums	**Up to 256 GB** with 16x 16 GB RDIMMs and two processors.
Memory protection	ECC, memory mirroring, and memory sparing.
Disk drive bays	Two 2.5" hot-swap SAS/SATA drive bays supporting SAS, SATA, and SSD drives.
Maximum internal storage	Up to 1.8 TB with 900 GB 2.5" SAS HDDs, up to **2 TB with 1-TB 2.5" NL SAS HDDs**, up to 2 TB with 1-TB 2.5" SATA HDDs, or up to 512 GB with 256 GB 2.5" SATA SSDs. Intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller.
Network interfaces	Two Gigabit Ethernet ports and **two 10 GB Ethernet ports** with integrated Emulex BladeEngine 3 (BE3) controller.
PCI expansion slots	One CIOv slot (PCIe 3.0 x8) and one CFFh slot (PCIe 3.0 x16). Two additional PCIe 2.0 x8 standard form factor slots with the **optional PCI Express Gen 2 Expansion Blade II** (slot 1 is full height and full length; slot 2 is full height and half length). One HS23 supports up to four PCIe expansion blades (eight slots). Up to four optional GPU expansion blades with NVIDIA Tesla M2090, M2075, or M2070Q graphics processing units.
Ports	One internal USB port (for **embedded hypervisor**).
Systems management	UEFI, IBM Integrated Management Module 2 (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel on the underside of the blade, Automatic Server Restart, IBM Systems Director and IBM Systems Director Active Energy Manager, and IBM ServerGuide.
Security features	Power-on password, administrator's password, and TPM 1.2.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors (32 bits per pixel).
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008 x64, Red Hat Enterprise Linux 5 and 6 (x64), SUSE Linux Enterprise Server 10 and 11 (for AMD64/EM64T), VMware vSphere 5.
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours 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.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/NBD.

Components	Specification
Dimensions	Height: 245 mm (9.7 in), width: 29 mm (1.14 in), depth: 446 mm (17.6 in).
Weight	Maximum configuration (single-wide blade): 5.4 kg (12 lb).

Hot-swap drive bay 1 Processor 1 Memory for processor 1 CIOv connector USB connector

Light path diagnostics panel

Hot-swap drive bays Power & KVM controls and LEDs

Hot-swap drive bay 2 Memory for processor 2 Processor 2 CFFh connector 10 Gb interposer

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3149	8 GB (2Gb, 2Rx4, 1.5 V) PC3-12800 CL11 ECC DDR3 1600 MHz VLP RDIMM
46C0599	16 GB (1x 16 GB, 2Rx4, 1.35 V) PC3L-10600 CL9 ECC DDR3 1333 MHz VLP
81Y9650	IBM 900 GB 10K 6 Gbps SAS 2.5-inch HS HDD
43W7718	IBM 200 GB SATA 2.5-inch SFF Slim-HS SSD
94Y8550	10 Gb Interposer Card for IBM BladeCenter HS23
90Y9310	IBM Virtual Fabric Advanced Software Upgrade (LOM)
81Y3120	Emulex 10GbE Virtual Fabric Adapter II (CFFh) for HS23
90Y9332	Emulex 10GbE Virtual Fabric Adapter Advanced II (CFFh) for HS23
68Y7484	IBM BladeCenter PCI Express Gen 2 Expansion Blade II

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS23*:
http://www.redbooks.ibm.com/abstracts/tips0843.html?Open

IBM BladeCenter HS23 Express Models (withdrawn)

Model[1,2]	Processor (2 maximum)	Second CPU	Memory & speed	Disk adapter	Disk bays (used / max.)	Disks	Network	I/O slots (used/max)	Announced / Withdrawn
North America (NA)									
7875-E1U	2x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	Standard	8x 4GB 1333 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Apr 2013
7875-E2U	2x Xeon E5-2630 6C 2.3GHz 15MB 1333MHz 95W	Standard	8x 8GB 1333 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Apr 2013
7875-E3U	2x Xeon E5-2670 8C 2.6GHz 20MB 1600MHz 115W	Standard	8x 8GB 1600 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Apr 2013
7875-E4U	2x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	Standard	4x 8 GB 1333 MHz[c]	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[d]	1 / 2[e]	Oct 2012 / Jun 2014
7875-E5U	2x Xeon E5-2640 6C 2.5GHz 15MB 1333MHz 95W	Standard	4x 8 GB 1333 MHz[c]	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[d]	1 / 2[e]	Oct 2012 / Jun 2014
7875-E6U	2x Xeon E5-2650 8C 2.0GHz 20MB 1600MHz 95W	Standard	8x 8 GB 1600 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[d]	1 / 2[e]	Oct 2012 / Jun 2014
Latin America (LA)									
7875-E1U	2x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	Standard	8x 4GB 1333MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Apr 2013
7875-E2U	2x Xeon E5-2630 6C 2.3GHz 15MB 1333MHz 95W	Standard	8x 8GB 1333MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Apr 2013
7875-E3U	2x Xeon E5-2670 8C 2.6GHz 20MB 1600MHz 115W	Standard	8x 8GB 1333MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[a]	1 / 2[b]	Mar 2012 / Apr 2013
7875-E4U	2x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	Standard	4x 8 GB 1333 MHz[c]	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[d]	1 / 2[e]	Oct 2012 / Jun 2014
7875-E5U	2x Xeon E5-2640 6C 2.5GHz 15MB 1333MHz 95W	Standard	4x 8 GB 1333 MHz[c]	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[d]	1 / 2[e]	Oct 2012 / Jun 2014
7875-E6U	2x Xeon E5-2650 8C 2.0GHz 20MB 1600MHz 95W	Standard	8x 8 GB 1600 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[d]	1 / 2[e]	Oct 2012 / Jun 2014
Europe, Middle East, Africa									
7875-K1G	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	81Y9295	1x 8 GB 1333 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[d]	1 / 2[e]	May 2012 / Jul 2013
7875-K2G	1x Xeon E5-2620 6C 2.0GHz 15MB 1333MHz 95W	81Y9295	2x 8 GB 1333 MHz	SAS/SATA RAID	0 / 2	Open	2x 1 GbE + 2x 10 GbE[d]	1 / 2[e]	July 2013 / Apr 2014

a. These models include the 10 GB interposer card for HS23, part number 94Y8550. This card routes the onboard 10 GbE to chassis bays 7 and 9 in BladeCenter H and HT.
b. The 10 GB interposer card in these models provides the same midplane connectors as the adapter installed in the CFFh slot (if any). To use the CFFh slot, you must first remove the interposer card.
c. Models E4U and E5U have four DIMMs as standard which means that only half of the eight memory channels are used. To maximize memory performance, consider adding additional DIMMs to populate all channels.
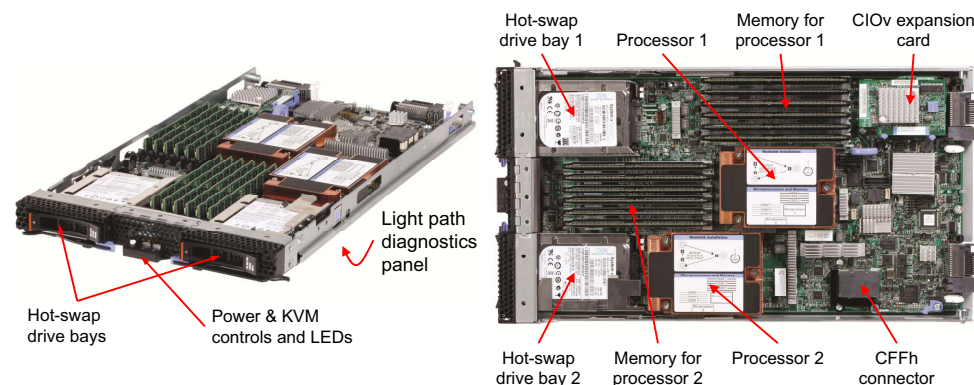d. These models include the 10 GB interposer card for HS23, part number 94Y8550. This card routes the onboard 10 GbE to chassis bays 7 and 9 in BladeCenter H and HT.
e. The 10 GB interposer card in these models provides the same midplane connectors as the adapter installed in the CFFh slot (if any). To use the CFFh slot, you must first remove the interposer card.

IBM BladeCenter HS23E (withdrawn)

Model[1]	Intel Processor (Xeon E5-2400: 2 maximum; Pentium: 1 maximum)	Second CPU	Memory and speed	Disk adapter	Disk bays (used / max.)	Disks	Network	I/O slots (used / max.)	Announced / Withdrawn
8038-D1x	1x Xeon E5-2450 8C 2.1GHz 20MB 1600MHz 95W	90Y5286	3x 8 GB 1600 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012 / Dec 2012
8038-D3x	1x Xeon E5-2470 8C 2.3GHz 20MB 1600MHz 95W	90Y5284	3x 8 GB 1600 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012 / Dec 2012

Components	Specification
Form factor	Single-wide (30 mm) blade server.
Chassis support	BladeCenter H, BladeCenter HT, BladeCenter S, and BladeCenter E. (Some configurations may have limitations. See Table 5 for compatibility details.)
Processor	Up to two **Intel Xeon processor E5-2400** product family processors with eight cores (up to 2.3 GHz), six cores (up to 2.4 GHz), or four cores (up to 2.2 GHz), one QPI link up to 8.0 GTps, up to 1600 MHz memory speed, up to 20 MB L3 cache; or one Intel Xeon processor E5-1410 with four cores at 2.8 GHz, 10 MB L3 cache, and 1333 MHz memory speed; or one Intel Pentium processor 1400 product family with two cores up to 2.8 GHz, 5 MB L3 cache, and 1066 MHz memory speed.
Chipset	Intel C600 Series.
Memory	**Up to 12 DDR3 DIMM sockets** (six DIMMs per processor) using Very Low Profile (VLP) DIMMs. Support for up to 1600 MHz memory speed depending on the processor. Three memory channels per processor (two DIMMs per channel).
Memory maximums	**Up to 192 GB** with 12x 16 GB RDIMMs and two processors.
Memory protection	ECC, Chipkill, memory mirroring, and memory sparing.
Drive bays	**Two 2.5-inch SAS/SATA hot-swap drive bays** supporting SAS, SATA, and SSD drives.
Maximum internal storage	**Up to 2 TB** with 1 TB 2.5-inch NL SAS or SATA HDDs, or up to 1.8 TB with 900 GB 2.5-inch SAS HDDs, or up to 400 GB with 200 GB 2.5-inch SATA SSDs. An intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	**RAID 0 or 1 with ServeRAID C105**. Optional hardware RAID 0, 1, 10 or 1E with ServeRAID H1135.
Network interfaces	**Two Gigabit Ethernet ports** with an integrated **Broadcom BCM5718** controller.
PCI Expansion slots	One CIOv slot (PCIe 3.0 x8) and one CFFh slot (PCIe 3.0 x16). With the optional PCI Express Gen 2 Expansion Blade II: Two additional PCIe 2.0 x8 standard form factor slots (slot 1 is full-height full-length, slot 2 is full-height half-length). One HS23E supports up to four PCIe expansion blades (8 slots). Up to four optional GPU expansion blades with either NVIDIA Tesla M2090, M2075, or M2070Q graphics processing units.
Ports	One internal USB port (for embedded hypervisor).
Hot-swap components	Hard drives.
Systems management	UEFI, Renesas SH7757 controller-based IBM Integrated Management Module II (IMM2) with remote presence (graphics, keyboard and mouse, and virtual media), Predictive Failure Analysis, light path diagnostics panel, Automatic Server Restart, IBM Systems Director, IBM Systems Director Active Energy Manager, IBM ServerGuide, and IBM FastSetup.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. The maximum resolution is 1600x1200 at 75 Hz with 16 M colors (32 bits per pixel).
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008 (x64), Red Hat Enterprise Linux 5 and 6 (x64), SUSE Linux Enterprise Server 10 and 11 (x64), VMware vSphere 5.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/next business day (NBD) response time.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePac offerings: 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	Height: 245 mm (9.6 in.), width: 29 mm (1.14 in.), depth: 446 mm (17.6 in.)
Weight	Maximum configuration (single-wide blade): 4.6 kg (10.2 lb).

Labels: Hot-swap drive bay 1; Processor 1; Memory for processor 1; CIOv expansion card; Light path diagnostics panel; Hot-swap drive bays; Power & KVM controls and LEDs; Hot-swap drive bay 2; Memory for processor 2; Processor 2; CFFh connector

Popular and system-unique options (see the model table for processor options):

Part	Description
90Y3149	8GB (2Gb, 2Rx4,1.5V) DDR3-1600 PC3-12800 VLP RDIMM
46C0599	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz VLP DRIMM
90Y4750	ServeRAID H1135 Controller for IBM Flex System and BladeCenter
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF Slim-HS HDD
42C1810	Intel 10Gb 2-port Ethernet Expansion Card CFFh
68Y7484	IBM BladeCenter PCI Express Gen 2 Expansion Blade II
00D6881	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2090
68Y7478	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2075
68Y7479	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2070Q
41Y8300	IBM USB Memory Key for VMWare ESXi 5.0

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS23E*:
http://www.redbooks.ibm.com/abstracts/tips0887.html?0pen

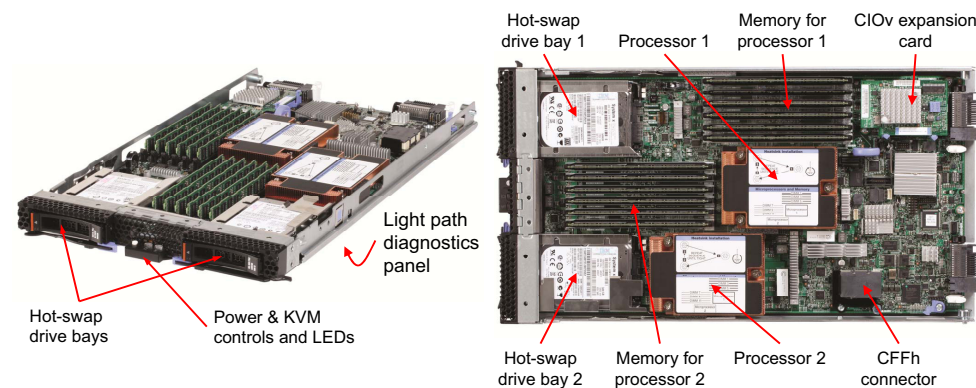# IBM BladeCenter HS23E Express Models (withdrawn)

Model[1]	Intel Processor (Xeon E5-2400: 2 maximum; Pentium: 1 maximum)	Second CPU	Memory and speed	Disk adapter	Disk bays (used / max.)	Disks	Network	I/O slots (used / max.)	Announced / Withdrawn
United States, Latin America, Canada									
8038-E1U	1x Xeon E5-2420 6C 1.9GHz 15MB 1333MHz 95W	90Y5290	3x 8 GB 1333 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012 / Apr 2013
8038-E2U	1x Xeon E5-2407 4C 2.2GHz 10MB 1066MHz 80W	90Y5291	3x 4 GB 1066 MHz[a]	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012 / Apr 2013
8038-E3U	2x Xeon E5-2430 6C 2.2GHz 15MB 1333MHz 95W	90Y5288	6x 8 GB 1333 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	May 2012 / Apr 2013
8038-E4U	1x Xeon E5-2407 4C 2.2GHz 10MB 1066MHz 80W	90Y5291	3x 8 GB 1066 MHz[b]	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	Oct 2012 / Dec 2013
8038-E5U	1x Xeon E5-2430 6C 2.2GHz 15MB 1333MHz 95W	90Y5288	3x 8 GB 1333 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	Oct 2012 / Dec 2013
8038-E6U	1x Xeon E5-2450 8C 2.1GHz 20MB 1600MHz 95W	90Y5286	3x 8 GB 1600 MHz	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	Oct 2012 / Dec 2013
Europe, Middle East, Africa									
8038-K1G	1x Xeon E5-2403 4C 1.8GHz 10MB 1066MHz 80W	90Y5292	1x 8 GB 1066 MHz[b]	C105	0 / 2	Open bay	2x 1 GbE	0 / 2	Aug 2012 / Jul 2014

a. For model E2U, the standard DIMMs are rated at 1333 MHz, but operate at up to 1066 MHz to match the processor memory speed.
b. For model E4U and K1G, the standard DIMMs are rated at 1333 MHz, but operate at up to 1066 MHz to match the processor memory speed.

Components	Specification
Form factor	Single-wide (30 mm) blade server.
Chassis support	BladeCenter H, BladeCenter HT, BladeCenter S, and BladeCenter E. (Some configurations may have limitations. See Table 5 for compatibility details.)
Processor	Up to two **Intel Xeon processor E5-2400** product family processors with eight cores (up to 2.3 GHz), six cores (up to 2.4 GHz), or four cores (up to 2.2 GHz), one QPI link up to 8.0 GTps, up to 1600 MHz memory speed, up to 20 MB L3 cache; or one Intel Xeon processor E5-1410 with four cores at 2.8 GHz, 10 MB L3 cache, and 1333 MHz memory speed; or one Intel Pentium processor 1400 product family with two cores up to 2.8 GHz, 5 MB L3 cache, and 1066 MHz memory speed.
Chipset	Intel C600 Series.
Memory	**Up to 12 DDR3 DIMM sockets** (six DIMMs per processor) using Very Low Profile (VLP) DIMMs. Support for up to 1600 MHz memory speed depending on the processor. Three memory channels per processor (two DIMMs per channel).
Memory maximums	**Up to 192 GB** with 12x 16 GB RDIMMs and two processors.
Memory protection	ECC, Chipkill, memory mirroring, and memory sparing.
Drive bays	**Two 2.5-inch SAS/SATA hot-swap drive bays** supporting SAS, SATA, and SSD drives.
Maximum internal storage	**Up to 2 TB** with 1 TB 2.5-inch NL SAS or SATA HDDs, or up to 1.8 TB with 900 GB 2.5-inch SAS HDDs, or up to 400 GB with 200 GB 2.5-inch SATA SSDs. An intermix of SAS and SATA HDDs and SSDs is supported.
RAID support	**RAID 0 or 1 with ServeRAID C105**. Optional hardware RAID 0, 1, 10 or 1E with ServeRAID H1135.
Network interfaces	**Two Gigabit Ethernet ports** with an integrated **Broadcom BCM5718** controller.
PCI Expansion slots	One CIOv slot (PCIe 3.0 x8) and one CFFh slot (PCIe 3.0 x16). With the optional PCI Express Gen 2 Expansion Blade II: Two additional PCIe 2.0 x8 standard form factor slots (slot 1 is full-height full-length, slot 2 is full-height half-length). One HS23E supports up to four PCIe expansion blades (8 slots). Up to four optional GPU expansion blades with either NVIDIA Tesla M2090, M2075, or M2070Q graphics processing units.
Ports	One internal USB port (for embedded hypervisor).
Hot-swap components	Hard drives.
Systems management	UEFI, Renesas SH7757 controller-based IBM Integrated Management Module II (IMM2) with remote presence (graphics, keyboard and mouse, and virtual media), Predictive Failure Analysis, light path diagnostics panel, Automatic Server Restart, IBM Systems Director, IBM Systems Director Active Energy Manager, IBM ServerGuide, and IBM FastSetup.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. The maximum resolution is 1600x1200 at 75 Hz with 16 M colors (32 bits per pixel).

Components	Specification
Operating systems supported	Microsoft Windows Server 2008 R2 and 2008 (x64), Red Hat Enterprise Linux 5 and 6 (x64), SUSE Linux Enterprise Server 10 and 11 (x64), VMware vSphere 5.
Limited warranty	3-year customer-replaceable unit and on-site limited warranty with 9x5/next business day (NBD) response time.
Service and support	Optional service upgrades (country-specific) are available through IBM ServicePac offerings: 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	Height: 245 mm (9.6 in.), width: 29 mm (1.14 in.), depth: 446 mm (17.6 in.)
Weight	Maximum configuration (single-wide blade): 4.6 kg (10.2 lb).

Hot-swap drive bay 1 — Processor 1 — Memory for processor 1 — CIOv expansion card

Light path diagnostics panel

Hot-swap drive bays — Power & KVM controls and LEDs

Hot-swap drive bay 2 — Memory for processor 2 — Processor 2 — CFFh connector

Popular and system-unique options (see the model table for processor options):

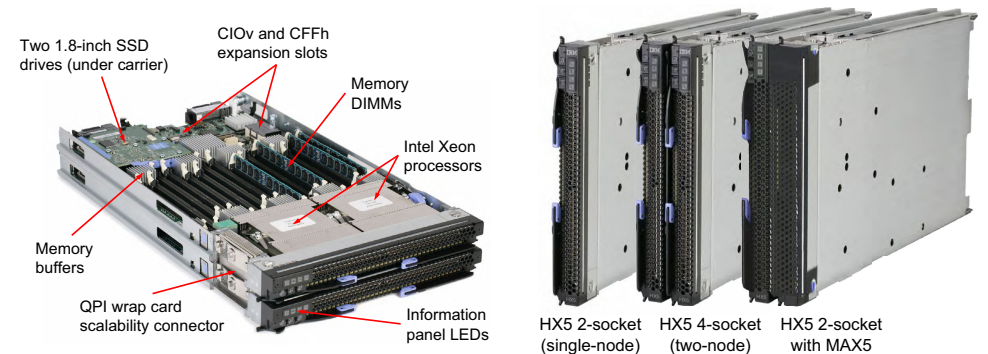| Part	Description
90Y3149	8GB (2Gb, 2Rx4,1.5V) DDR3-1600 PC3-12800 VLP RDIMM
46C0599	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz VLP DRIMM
90Y4750	ServeRAID H1135 Controller for IBM Flex System and BladeCenter
81Y9690	IBM 1TB 7.2K 6Gbps NL SAS 2.5" SFF Slim-HS HDD
42C1810	Intel 10Gb 2-port Ethernet Expansion Card CFFh
68Y7484	IBM BladeCenter PCI Express Gen 2 Expansion Blade II
00D6881	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2090
68Y7478	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2075
68Y7479	IBM BladeCenter GPU Expansion Blade II with NVIDIA Tesla M2070Q
41Y8300	IBM USB Memory Key for VMWare ESXi 5.0

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HS23E*:
http://www.redbooks.ibm.com/abstracts/tips0887.html?Open

IBM BladeCenter HX5 (7873) base models with optional MAX5 (withdrawn)

Model[1]	Processor (2 maximum)	MAX5	Scale to two nodes	Standard memory	Networking[a]	I/O slots	Storage	Drive bays	Announced / Withdrawn
Base models with optional MAX5									
7873-F1x	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Optional	2x 4 GB	2x 1 Gb + 2x 10 Gb (E1)	CIOv, CFFh	Optional	0 / 2	Apr 2011 / Apr 2013
7873-F2x	1x Xeon E7-4870 10C 2.40 GHz 30 MB 1066 MHz 130 W	Optional	Optional	2x 4 GB	2x 1 Gb + 2x 10 Gb (E1)	CIOv, CFFh	Optional	0 / 2	Apr 2011 / Apr 2013
7873-H1x	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Optional	2x 4 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Jul 2011 / May 2013
7873-E1x	2x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Optional	16x 8 GB	2x 1 Gb + 2x 10 Gb (E1)	CIOv, CFFh	Optional	0 / 2	Apr 2011 / Aug 2012
7873-E3x	2x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Optional	16x 8 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Jul 2011 / Aug 2012

a. Some models include a 2-port 10 Gb Ethernet card, either Emulex 10 GBE Virtual Fabric Adapter Advanced (E1) or Emulex 10 GBE Virtual Fabric Adapter Advanced II (E2).

Components	Specification
Form factor	Single HX5 (single node): 30 mm blade (single-wide). Double HX5 (two nodes): 60 mm blade (double-wide). Single HX5 + MAX5 memory expansion unit: 60 mm blade (double-wide).
Chassis support	BladeCenter H, BladeCenter S, BladeCenter HT AC; BC-HT DC support by using SPORE. Support is limited for 130 W processors and in BladeCenter S. For details, see the *IBM BladeCenter HX5 Product Guide*.
Scalability	**The HX5 can scale as follows**: ▸ Single HX5: Two processors, 16 DIMM sockets ▸ Double HX5: Four processors, 32 DIMM sockets ▸ Single HX5 + MAX5 memory expansion unit: Four processors, 40 DIMMs Scalability provided by using a QPI wrap connector on the edge of the server and MAX5; used to connect a second HX5 or MAX5 to a base HX5 server.
Processor type	**Intel Xeon E7-2800, E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	Single HX5: One or two processors. Double HX5: **Four processors**.
Cache (maximum)	**Up to 30 MB** per processor.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	Single HX5: 16 DIMM sockets. Double HX5: 32 DIMM sockets total. **Single HX5 + MAX5: 40 DIMM sockets total**. (MAX5 adds 24 sockets.)
Memory (maximum)	Single HX5: 512 GB (using 32 GB DIMMs). Two HX5: 1 TB (using 32 GB DIMMs). **Single HX5 + MAX5: 1.25 TB** (using 32 GB DIMMs).
I/O expansion slots	Single HX5: One CIOv connector and one CFFh connector. Single HX5 + MAX5: One CIOv connector and one CFFh connector. Two nodes: Two CIOv connectors and two CFFh connectors.
Disk bays (total/hot-swap)	Bays require optional SSD Expansion Card with integrated RAID. Single HX5: Two non-hot-swap 1.8-inch bays supporting solid-state drives. Double HX5: **Four non-hot-swap 1.8-inch bays** supporting solid-state drives.
Maximum internal storage	Single HX5: Up to 400 GB of solid-state storage (with 200 GB SSDs). Double HX5: **Up to 800 GB of solid-state storage** (with 200 GB SSDs).
Network interface	**Broadcom 5709S** onboard NIC with dual Gigabit Ethernet ports with TOE. Some models: Emulex Virtual Fabric 10 GB Expansion Card (CFFh).
RAID support	RAID 0 or RAID 1 integrated on optional SSD Expansion Card; LSI 1064E SAS controller; SSD Expansion Card installed in a dedicated slot.
Hypervisor	Embedded hypervisor supported by using an internal USB port.
Video	Matrox G200e integrated in IMM on a system board; 16-MB video memory.
Systems management	**Integrated management module** systems management processor.
Security	Trusted Platform Module, power-on password, administrator password, unattended boot, selectable boot, and unattended start mode
OS support	Microsoft Windows, Red Hat Linux, SUSE Linux, and VMware.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

Two 1.8-inch SSD drives (under carrier)
CIOv and CFFh expansion slots
Memory DIMMs
Intel Xeon processors
Memory buffers
QPI wrap card scalability connector
Information panel LEDs

HX5 2-socket (single-node) HX5 4-socket (two-node) HX5 2-socket with MAX5

Popular and system-unique options:

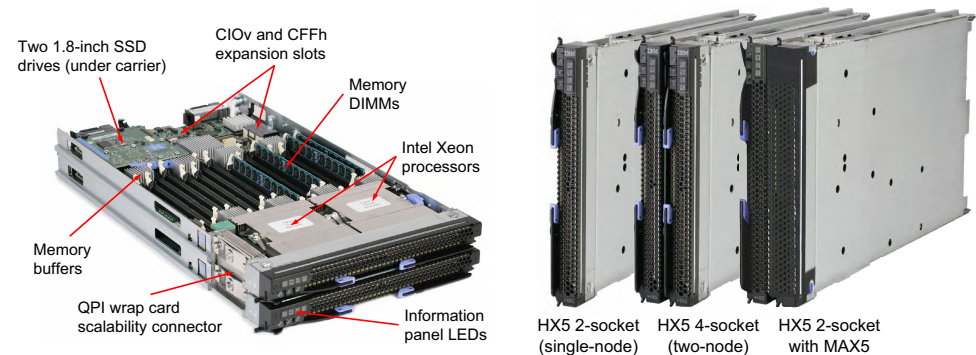| Part	Description
46M6973	IBM MAX5 for BladeCenter
88Y6128	IBM MAX5 V2 for BladeCenter
59Y5877	IBM HX5 MAX5 1-node Scalability Kit
59Y5889	IBM HX5 1-Node Speed Burst Card
46M6975	IBM HX5 2-Node Scalability Kit
46C0564	4 GB (1x4 GB, 2Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1333 MHz VLP RDIMM
46C0570	8 GB (1x8 GB, 4Rx8, 1.35V) PC3-8500 CL7 ECC DDR3 1066 MHz VLP RDIMM
46C0599	16 GB (1x16 GB, 4Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1066 MHz VLP RDIMM
00D5008	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333 MHz VLP RDIMM
46M6908	SSD Expansion Card for IBM BladeCenter HX5
43W7746	IBM 200 GB SATA 1.8'' MLC SSD
41Y8296	IBM USB Memory Key for VMware ESXi 4.1 Update 1
46M6730	IBM BladeCenter PCI Express Gen 2 Expansion Blade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HX5*: http://www.redbooks.ibm.com/abstracts/tips0824.html?Open

IBM BladeCenter HX5 (7873) base models with standard MAX5 (withdrawn)

Model[1]	Processor (2 maximum)	MAX5	Scale to two nodes	Standard memory	Networking[a]	I/O slots	Storage	Drive bays	Announced / Withdrawn
Base models with standard MAX5									
7873-F3x	2x Xeon E7-4807 6C 1.86 GHz 18 MB 800 MHz 95 W	Standard	Not supported	2x 4 GB	2x 1Gb + 2x 10Gb (E1)	CIOv, CFFh	Optional	0 / 2	Apr 2011 / Apr 2013
7873-F6x	2x Xeon E7-4807 6C 1.86 GHz 18 MB 800 MHz 95 W	Standard	Not supported	4x 4 GB	2x 1Gb + 2x 10Gb (E2)	CIOv, CFFh	Optional	0 / 2	Mar 2013 / May 2013
7873-G1x	2x Xeon E7-2830 8C 2.13 GHz 24 MB 1066 MHz 105W	Standard	Not supported	HX5: 16x 8GB, MAX5: 24x 8GB	2x 1Gb + 2x 10Gb (E1)	CIOv, CFFh	Optional	0 / 2	Jun 2011 / Apr 2013
7873-H2x	1x Xeon E7-4870 10C 2.40 GHz 30 MB 1066 MHz 130W	Standard	Not supported	HX5: 2x 4 GB, MAX5: None	2x 1Gb + 2x 10Gb (E2)	CIOv, CFFh	Optional	0 / 2	Jul 2011 / May 2013
7873-H3x	2x Xeon E7-4807 6C 1.86 GHz 18 MB 800MHz 95 W	Standard	Not supported	HX5: 4x 4 GB, MAX5: None	2x 1Gb + 2x 10Gb (E2)	CIOv, CFFh	Optional	0 / 2	Jul 2011 / May 2013

a. Some models include a 10 Gb Ethernet card, either Emulex 10GbE Virtual Fabric Adapter Advanced (E1) or Emulex 10GbE Virtual Fabric Adapter Advanced II (E2).

Components	Specification
Form factor	Single HX5 (single node): 30 mm blade (single-wide). Double HX5 (two nodes): 60 mm blade (double-wide). Single HX5 + MAX5 memory expansion unit: 60 mm blade (double-wide).
Chassis support	BladeCenter H, BladeCenter S, BladeCenter HT AC; BC-HT DC support by using SPORE. Support is limited for 130 W processors and in BladeCenter S. For details, see the *IBM BladeCenter HX5 Product Guide*.
Scalability	**The HX5 can scale as follows**: ▶ Single HX5: Two processors, 16 DIMM sockets ▶ Double HX5: Four processors, 32 DIMM sockets ▶ Single HX5 + MAX5 memory expansion unit: Four processors, 40 DIMMs Scalability provided using a QPI wrap connector on the edge of the server and MAX5; used to connect a second HX5 or MAX5 to a base HX5 server.
Processor type	**Intel Xeon E7-2800, E7-4800 and E7-8800 families**, up to 10 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	Single HX5: One or two processors. Double HX5: **Four processors**.
Cache (maximum)	**Up to 30 MB** per processor.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	Single HX5: 16 DIMM sockets. Double HX5: 32 DIMM sockets total. **Single HX5 + MAX5: 40 DIMM sockets total**. (MAX5 adds 24 sockets.)
Memory (maximum)	Single HX5: 512 GB (using 32 GB DIMMs). Two HX5: 1 TB (using 32 GB DIMMs). **Single HX5 + MAX5: 1.25 TB** (using 32 GB DIMMs).
I/O expansion slots	Single HX5: One CIOv connector and one CFFh connector. Single HX5 + MAX5: One CIOv connector and one CFFh connector. Two nodes: Two CIOv connectors and two CFFh connectors.
Disk bays (total/hot-swap)	Bays require optional SSD Expansion Card with integrated RAID. Single HX5: Two non-hot-swap 1.8-inch bays supporting solid-state drives. Double HX5: **Four non-hot-swap 1.8-inch bays** supporting solid-state drives.
Maximum internal storage	Single HX5: Up to 400 GB of solid-state storage (with 200 GB SSDs). Double HX5: **Up to 800 GB of solid-state storage** (with 200 GB SSDs).
Network interface	**Broadcom 5709S** onboard NIC with dual Gigabit Ethernet ports with TOE. Some models: Emulex Virtual Fabric 10 GB Expansion Card (CFFh).
RAID support	RAID 0 or RAID 1 integrated on optional SSD Expansion Card; LSI 1064E SAS controller; SSD Expansion Card installed in a dedicated slot.
Hypervisor	Embedded hypervisor supported by using an internal USB port.
Video	Matrox G200e integrated in IMM on a system board; 16-MB video memory.
Systems management	**Integrated management module** systems management processor.
Security	Trusted Platform Module, power-on password, administrator password, unattended boot, selectable boot, and unattended start mode.
OS support	Microsoft Windows, Red Hat Linux, SUSE Linux, and VMware.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

HX5 2-socket (single-node)   HX5 4-socket (two-node)   HX5 2-socket with MAX5

Popular and system-unique options (see the model table for processor options):

Part	Description
46M6973	IBM MAX5 for BladeCenter
88Y6128	IBM MAX5 V2 for BladeCenter
59Y5877	IBM HX5 MAX5 1-node Scalability Kit
59Y5889	IBM HX5 1-Node Speed Burst Card
46M6975	IBM HX5 2-Node Scalability Kit
46C0564	4 GB (1x4 GB, 2Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1333
46C0570	8 GB (1x8 GB, 4Rx8, 1.35V) PC3-8500 CL7 ECC DDR3 1066
46C0599	16 GB (1x16 GB, 4Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1066
46M6908	SSD Expansion Card for IBM BladeCenter HX5
43W7746	IBM 200 GB SATA 1.8" MLC SSD
41Y8296	IBM USB Memory Key for VMware ESXi 4.1 Update 1
46M6730	IBM BladeCenter PCI Express Gen 2 Expansion Blade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HX5*:
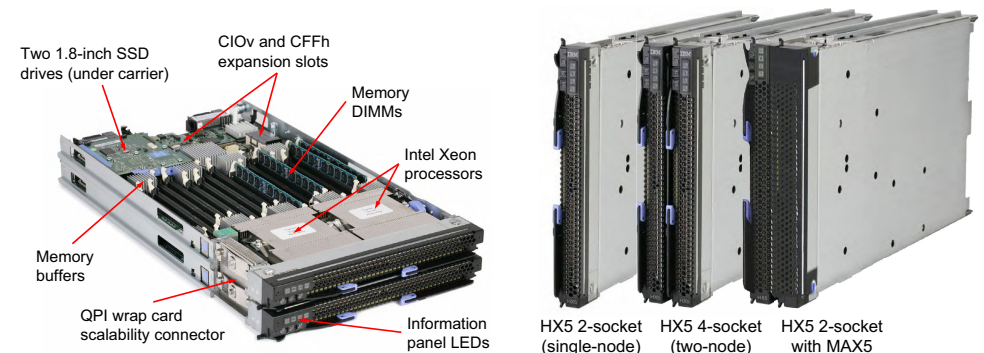http://www.redbooks.ibm.com/abstracts/tips0824.html?0pen

IBM BladeCenter HX5 (7873) workload optimized models (withdrawn)

Model[1]	Processor (2 maximum)	MAX5	Scale to two nodes	Standard memory	Networking[a]	I/O slots	Storage	Drive bays	Announced / Withdrawn
Workload optimized models for database - with standard IBM BladeCenter PCIe Gen 2 Expansion Blade									
7873-G2x	2x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Optional	8x 8 GB	2x 1 Gb + 2x 10 Gb (E1)	CIOv, CFFh + BPE[b]	2x 320 GB PCIe SSD	0 / 2	Apr 2011 / Apr 2013
7873-G4x	2x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Optional	8x 8 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh + BPE[b]	2x 320 GB PCIe SSD	0 / 2	Jul 2011 / Apr 2013
Workload optimized models for IBM BladeCenter Foundation for Cloud (optional or standard MAX5)									
7873-91x	2x Xeon E7-2830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Not supported	16x 8 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Aug 2011 / Dec 2013
7873-92x	2x Xeon E7-2830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Optional	Not supported	16x 8 GB	2x 1 Gb + 2x 10 Gb (Q)	CIOv, CFFh	Optional	0 / 2	Aug 2011 / Dec 2013
7873-93x	2x Xeon E7-8867L 10C 2.13 GHz 30 MB 1066 MHz 105 W	Standard	Not supported	HX5: 16x 8 GB MAX5: 24x 8 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Aug 2011 / May 2013
7873-94x	2x Xeon E7-8867L 10C 2.13 GHz 30 MB 1066 MHz 105 W	Standard	Not supported	HX5: 16x 8 GB MAX5: 24x 8 GB	2x 1 Gb + 2x 10 Gb (Q)	CIOv, CFFh	Optional	0 / 2	Aug 2011 / May 2013

a. Some models include a 10 Gb Ethernet card, either Emulex 10GbE Virtual Fabric Adapter Advanced (E1), Emulex 10GbE Virtual Fabric Adapter Advanced II (E2), or QLogic 2-pt 10 GB Converged Network Adapter (CFFh) (Q).
b. Models G2x and G4x include an IBM BladeCenter PCI Express Gen 2 Expansion Blade with two full-length PCIe 2.0 slots. The expansion blade has two IBM 320 GB High IOPS MS Class SSD PCIe Adapters installed, 46M0898.

Components	Specification
Form factor	Single HX5 (single node): 30 mm blade (single-wide). Double HX5 (two nodes): 60 mm blade (double-wide). Single HX5 + MAX5 memory expansion unit: 60 mm blade (double-wide).
Chassis support	BladeCenter H, BladeCenter S, BladeCenter HT AC; BC-HT DC support by using SPORE. Support is limited for 130 W processors and in BladeCenter S. For details, see the *IBM BladeCenter HX5 Product Guide*.
Scalability	**The HX5 can scale as follows**: ► Single HX5: Two processors, 16 DIMM sockets ► Double HX5: Four processors, 32 DIMM sockets ► Single HX5 + MAX5 memory expansion unit: Four processors, 40 DIMMs Scalability provided using a QPI wrap connector on the edge of the server and MAX5; used to connect a second HX5 or MAX5 to a base HX5 server.
Processor type	Machine type 7873: Intel Xeon E7-8800, E7-4800, and E7-2800, up to 10 cores.
Number of processors	Single HX5: One or two processors. Double HX5: **Four processors**.
Cache (maximum)	**Up to 30 MB** per processor.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	Single HX5: 16 DIMM sockets. Double HX5: 32 DIMM sockets total. **Single HX5 + MAX5: 40 DIMM sockets total**. (MAX5 adds 24 sockets.)
Memory (maximum)	Single HX5: 512 GB (using 32 GB DIMMs). Two HX5: 1 TB (using 32 GB DIMMs). **Single HX5 + MAX5: 1.25 TB** (using 32 GB DIMMs).
I/O expansion slots	Single HX5: One CIOv connector and one CFFh connector. Single HX5 + MAX5: One CIOv connector and one CFFh connector. Two nodes: Two CIOv connectors and two CFFh connectors.
Disk bays (total/hot-swap)	Bays require optional SSD Expansion Card with integrated RAID. Single HX5: Two non-hot-swap 1.8-inch bays supporting solid-state drives. Double HX5: **Four non-hot-swap 1.8-inch bays** supporting solid-state drives.
Maximum internal storage	Single HX5: Up to 400 GB of solid-state storage (with 200 GB SSDs). Double HX5: **Up to 800 GB of solid-state storage** (with 200 GB SSDs).
Network interface	**Broadcom 5709S** onboard NIC with dual Gigabit Ethernet ports with TOE. Some models: Emulex Virtual Fabric 10 GB Expansion Card (CFFh).
RAID support	RAID 0 and RAID 1 integrated on optional SSD Expansion Card; LSI 1064E SAS controller; SSD Expansion Card installed in a dedicated slot.
Hypervisor	Embedded hypervisor supported by using an internal USB port.
Video	Matrox G200e integrated in IMM on a system board; 16-MB video memory.
Systems management	**Integrated management module** systems management processor.

Components	Specification
Security	Trusted Platform Module, power-on password, administrator password, unattended boot, selectable boot, and unattended start mode.
OS support	Microsoft Windows, Red Hat Linux, SUSE Linux, and VMware.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

Two 1.8-inch SSD drives (under carrier)
CIOv and CFFh expansion slots
Memory DIMMs
Intel Xeon processors
Memory buffers
QPI wrap card scalability connector
Information panel LEDs

HX5 2-socket (single-node)   HX5 4-socket (two-node)   HX5 2-socket with MAX5

Popular and system-unique options (see the model table for processor options):

Part	Description
46M6973	IBM MAX5 for BladeCenter
88Y6128	IBM MAX5 V2 for BladeCenter
59Y5877	IBM HX5 MAX5 1-node Scalability Kit
59Y5889	IBM HX5 1-Node Speed Burst Card
46M6975	IBM HX5 2-Node Scalability Kit
46C0564	4 GB (1x4 GB, 2Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1333
46C0599	16 GB (1x16 GB, 4Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1066
46M6908	SSD Expansion Card for IBM BladeCenter HX5
41Y8296	IBM USB Memory Key for VMware ESXi 4.1 Update 1
46M6730	IBM BladeCenter PCI Express Gen 2 Expansion Blade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HX5*: http://www.redbooks.ibm.com/abstracts/tips0824.html?Open

IBM BladeCenter HX5 (7873) zBX models

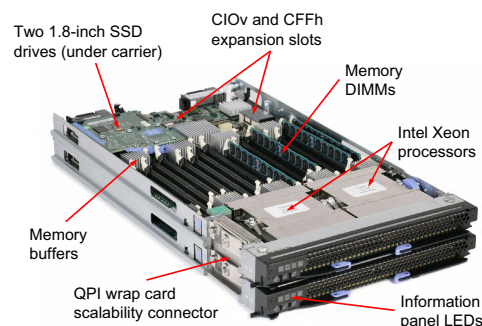| Model[1]	Processor (2 maximum)	MAX5 or scale to two nodes	Standard memory	Networking	I/O slots avail / max	Storage	Drive bays	Announced / Withdrawn
Workload optimized models for IBM zEnterprise BladeCenter Extension (zBX)								
7873-A4x	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	8x 8 GB	2x 1 Gb + 2x 10 Gb + 2x 8 GB FC[a]	0 / 2	2x 50 GB MLC SSD[b]	2 / 2	Aug 2011 / Mar 2013
7873-A5x	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	16x 8 GB	2x 1 Gb + 2x 10 Gb + 2x 8 GB FC[a]	0 / 2	2x 50 GB MLC SSD[b]	2 / 2	Aug 2011 / Mar 2013
7873-A6x	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	8x 8 GB + 8x 16 GB	2x 1 Gb + 2x 10 Gb + 2x 8 GB FC[a]	0 / 2	2x 50 GB MLC SSD[b]	2 / 2	Aug 2011 / Mar 2013
7873-A7x	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	16x 16 GB	2x 1 Gb + 2x 10 Gb + 2x 8 GB FC[a]	0 / 2	2x 50 GB MLC SSD[b]	2 / 2	Aug 2011 / Mar 2013
7873-AAx	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	8x 8 GB	2x 1Gb + 2x 10Gb VFA + 2x 8Gb FC[c]	0 / 2	2x 100 GB MLC SSD[d]	2 / 2	Apr 2013 / Jun 2014
7873-ABx	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	16x 8 GB	2x 1Gb + 2x 10Gb VFA + 2x 8Gb FC[c]	0 / 2	2x 100 GB MLC SSD[d]	2 / 2	Apr 2013 / Jun 2014
7873-ACx	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	8x 8 GB + 8x 16 GB	2x 1Gb + 2x 10Gb VFA + 2x 8Gb FC[c]	0 / 2	2x 100 GB MLC SSD[d]	2 / 2	Apr 2013 / Jun 2014
7873-ADx	2x E7-2830 8C 2.13GHz 24MB 1066MHz 105W	Not supported	16x 16GB	2x 1Gb + 2x 10Gb VFA + 2x 8Gb FC[c]	0 / 2	2x 100 GB MLC SSD[d]	2 / 2	Apr 2013 / Jun 2014

a. Models 7873-A4x, A5x, A6x, and A7x include a Broadcom 10 GB Gen2 2-port Ethernet Exp Card (CFFh) and a QLogic 8 GB Fibre Channel Expansion Card (CIOv).
b. Models 7873-A4x, A5x, A6x, and A7x include two IBM 50 GB SATA 1.8" MLC SSDs plus the SSD Expansion Card for IBM BladeCenter HX5.
c. Models 7873-AAx, ABx, ACx, ADx, AJx, AKx, ALx, AMx include a Broadcom 2-port 10Gb Virtual Fabric Adapter and a QLogic 8 GB Fibre Channel Expansion Card (CIOv).
d. Models 7873-AAx, ABx, ACx, ADx include two IBM 100GB SATA 1.8" MLC Enterprise SSDs plus the SSD Expansion Card for IBM BladeCenter HX5.

Components	Specification
Form factor	30 mm blade (single-wide).
Chassis support	BladeCenter H, models IBM 2458-002, 2458-003 only
Scalability	Not suppported
Processor type	**Intel Xeon E7-2800**, 8 cores. **QuickPath Interconnect** (QPI) technology at up to 6.4 Gbps with four QPI links per processor for processor-to-processor connectivity. Intel **Scalable Memory Interconnect** (SMI) links for processor-to-memory connectivity up to 6.4 Gbps with four SMI links per processor.
Number of processors	Two processors.
Cache (maximum)	**24 MB** per processor.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	Single HX5: 16 DIMM sockets.
Memory (maximum)	Single HX5: 512 GB (using 32 GB DIMMs).
I/O expansion slots	One CIOv connector and one CFFh connector with adapters installed as standard.
Disk bays (total/hot-swap)	Two non-hot-swap 1.8-inch bays supporting solid-state drives. SSD Expansion Card with integrated RAID inluded in zBX models
Maximum internal storage	zBX models cannot be upgraded beyond standard storage
Network interface	**Broadcom 5709S** onboard NIC with dual Gigabit Ethernet ports with TOE. zBX models: Emulex Virtual Fabric 10 GB Expansion Card (CFFh) or Broadcom 2-port 10Gb Virtual Fabric Adapter
RAID support	RAID 0 or RAID 1 integrated on SSD Expansion Card; LSI 1064E SAS controller; SSD Expansion Card installed in dedicated slot.
Hypervisor	Embedded hypervisor supported by using an internal USB port.
Video	Matrox G200e integrated in IMM on a system board; 16-MB video memory.
Systems management	**Integrated management module** systems management processor.
Security	Trusted Platform Module, power-on password, administrator password, unattended boot, selectable boot, and unattended start mode.
OS support	Microsoft Windows, Red Hat Linux, SUSE Linux, and VMware.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

Two 1.8-inch SSD drives (under carrier)
CIOv and CFFh expansion slots
Memory DIMMs
Intel Xeon processors
Memory buffers
QPI wrap card scalability connector
Information panel LEDs

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HX5*:
http://www.redbooks.ibm.com/abstracts/tips0824.html?Open
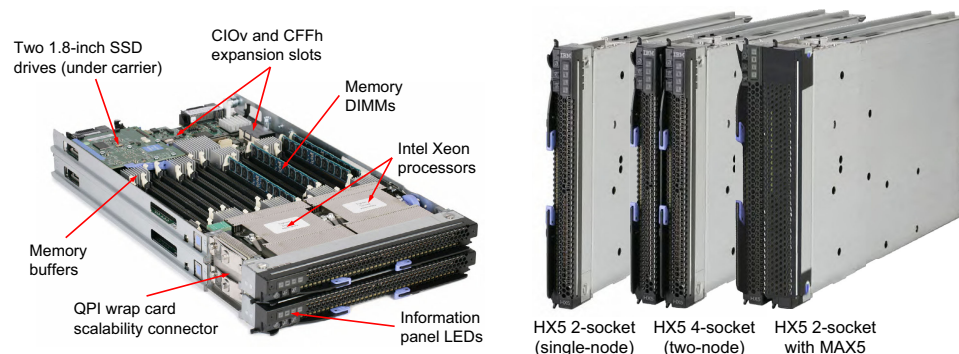
IBM BladeCenter HX5 (7873) two-node models (withdrawn)

Model[1]	Processor (2 maximum)	MAX5	Two-node scalability kit[a]	Standard memory	Networking[b]	I/O slots	Storage	Drive bays	Announced / Withdrawn
Models for two-node configurations									
7873-FHx	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Not supported	Standard	2x 4 GB	2x 1 Gb + 2x 10 Gb (E1)	CIOv, CFFh	Optional	0 / 2	Apr 2011 / Apr 2013
7873-FAx	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Not supported	Connect to model FHx	2x 4 GB	2x 1 Gb + 2x 10 Gb (E1)	CIOv, CFFh	Optional	0 / 2	Apr 2011 / Apr 2013
7873-FJx	1x Xeon E7-4870 10C 2.40 GHz 30 MB 1066 MHz 130 W	Not supported	Standard	2x 4 GB	2x 1 Gb + 2x 10 Gb (E1)	CIOv, CFFh	Optional	0 / 2	Apr 2011 / Apr 2013
7873-FBx	1x Xeon E7-4870 10C 2.40 GHz 30 MB 1066 MHz 130 W	Not supported	Connect to model FJx	2x 4 GB	2x 1 Gb + 2x 10 Gb (E1)	CIOv, CFFh	Optional	0 / 2	Apr 2011 / Apr 2013
7873-FDx	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Not supported	Standard	2x 4 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Mar 2013 / May 2013
7873-FMx	1x Xeon E7-4830 8C 2.13 GHz 24 MB 1066 MHz 105 W	Not supported	Connect to model FDx	2x 4 GB	2x 1 Gb + 2x 10 Gb (E2)	CIOv, CFFh	Optional	0 / 2	Mar 2013 / May 2013

a. These models have the IBM HX5 2-Node Scalability Kit standard, 46M6975, and connect to the partner model as indicated.
b. Some models, as indicated with (E2), include the Emulex 10GbE Virtual Fabric Adapter Advanced II adapter.

Components	Specification
Form factor	Single HX5 (single node): 30 mm blade (single-wide). Double HX5 (double node): 60 mm blade (double-wide). Single HX5 + MAX5 memory expansion unit: 60 mm blade (double-wide).
Chassis support	BladeCenter H, BladeCenter S, BladeCenter HT AC; BC-HT DC support by using SPORE. Support is limited for 130 W processors and in BladeCenter S. For details, see the *IBM BladeCenter HX5 Product Guide*.
Scalability	**The HX5 can scale as follows**: ▸ Single HX5: Two processors, 16 DIMM sockets ▸ Double HX5: Four processors, 32 DIMM sockets Scalability provided using a QPI wrap connector on the edge of the server; used to connect second HX5 to base HX5 server.
Processor type	Machine type 7873: Intel Xeon E7-8800, E7-4800, and E7-2800, up to 10 cores.
Number of processors	Single HX5: One or two processors. Double HX5: **Four processors**.
Cache (maximum)	**Up to 30 MB** per processor.
Chip set	Intel 7500 chip set.
Memory DIMM sockets	Single HX5: 16 DIMM sockets. **Double HX5: 32 DIMM sockets total**.
Memory (maximum)	Single HX5: 512 GB (using 32 GB DIMMs). **Two HX5: 1 TB (using 32 GB DIMMs).**
I/O expansion slots	Single HX5: One CIOv connector and one CFFh connector. Two nodes: Two CIOv connectors and two CFFh connectors.
Disk bays (total/hot-swap)	Bays require optional SSD Expansion Card with integrated RAID. Single HX5: Two non-hot-swap 1.8-inch bays supporting solid-state drives. Double HX5: **Four non-hot-swap 1.8-inch bays** supporting solid-state drives.
Maximum internal storage	Single HX5: Up to 400 GB of solid-state storage (with 200 GB SSDs). Double HX5: **Up to 800 GB of solid-state storage** (with 200 GB SSDs).
Network interface	**Broadcom 5709S** onboard NIC with dual Gigabit Ethernet ports with TOE. Some models: Emulex Virtual Fabric 10 GB Expansion Card (CFFh).
RAID support	RAID 0 or RAID 1 integrated on optional SSD Expansion Card; LSI 1064E SAS controller; SSD Expansion Card installed in dedicated slot.
Hypervisor	Embedded hypervisor supported by using an internal USB port.
Video	Matrox G200e integrated in IMM on a system board; 16-MB video memory.
Systems management	**Integrated management module** systems management processor.
Security	Trusted Platform Module, Power-on password, administrator password, unattended boot, selectable boot, and unattended start mode.
OS support	Microsoft Windows, Red Hat Linux, SUSE Linux, and VMware.
Limited warranty	Three-year customer-replaceable unit and on-site limited warranty.

HX5 2-socket (single-node)   HX5 4-socket (two-node)   HX5 2-socket with MAX5

Popular and system-unique options:

Part	Description
46M6973	IBM MAX5 for BladeCenter
88Y6128	IBM MAX5 V2 for BladeCenter
59Y5877	IBM HX5 MAX5 1-node Scalability Kit
59Y5889	IBM HX5 1-Node Speed Burst Card
46M6975	IBM HX5 2-Node Scalability Kit
46C0564	4 GB (1x4 GB, 2Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1333
46C0570	8 GB (1x8 GB, 4Rx8, 1.35V) PC3-8500 CL7 ECC DDR3 1066
46C0599	16 GB (1x16 GB, 4Rx8, 1.35V) PC3-10600 CL9 ECC DDR3 1066
46M6908	SSD Expansion Card for IBM BladeCenter HX5
43W7746	IBM 200 GB SATA 1.8'' MLC SSD
41Y8296	IBM USB Memory Key for VMware ESXi 4.1 Update 1
46M6730	IBM BladeCenter PCI Express Gen 2 Expansion Blade

For a list of all supported options, see the IBM Redbooks Product Guide for the *IBM BladeCenter HX5*:
http://www.redbooks.ibm.com/abstracts/tips0824.html?Open

IBM Flex System x240 Compute Node (Page 1 of 2) (withdrawn)

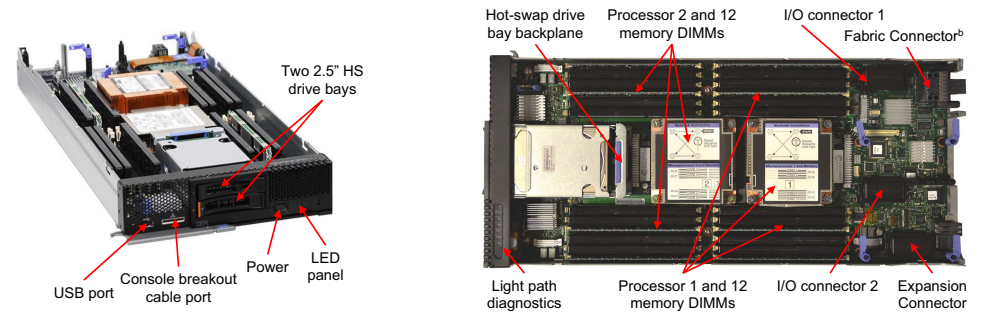| Model[1]	Processor (2 maximum)	Second CPU	Memory	RAID controller	Disk bays (used/max)[a]	Disks	10 GbE Embedded Virtual Fabric	I/O slots (used/max)	Announced / Withdrawn
8737-A1x	1x Xeon E5-2630L 6C 2.0GHz 15MB 1333MHz 60W	81Y5206	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	No	0 / 2[b]	Apr 2012 / Sep 2014
8737-D2x	1x Xeon E5-2609 4C 2.40GHz 10MB 1066MHz 80W	81Y5182	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	Apr 2012 / Sep 2014
8737-G2x	1x Xeon E5-2630 6C 2.3GHz 15MB 1333MHz 95W	81Y5184	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	Apr 2012 / Sep 2014
8737-H1x	1x Xeon E5-2640 6C 2.5GHz 15MB 1333MHz 95W	81Y5185	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	No	0 / 2	Apr 2012 / Sep 2014
8737-H2x	1x Xeon E5-2640 6C 2.5GHz 15MB 1333MHz 95W	81Y5185	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	Apr 2012 / Sep 2014
8737-HBx[c]	2x Xeon E5-2640 6C 2.5GHz 15MB 1333MHz 95W	81Y5185	2x 8 GB	LSI SAS2004	2.5" hot-swap (0 / 14)[c]	Open	Standard	1 / 2[b]	Feb 2013 / Sep 2014
8737-J1x	1x Xeon E5-2670 8C 2.6GHz 20MB 1600MHz 115W	81Y9418	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	No	0 / 2	Apr 2012 / Sep 2014

a. The 2.5-inch drive bays can be replaced and expanded with SSD kits and a ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)
b. The x2x models include an Embedded 10Gb Virtual Fabric Ethernet controller; connections are routed using a Fabric Connector. The Fabric Connector precludes the use of an I/O adapter in I/O connector 1.
c. Model HBx is optimized as a Network Attached Storage (NAS) offering and includes the IBM Flex System Storage Expansion Node (68Y8588) with 12x 2.5-inch hot-swap drive bays as standard

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis
Processor	Up to two **Intel Xeon Processor E5-2600** product family CPUs with eight-core (up to 2.9 GHz) or six-core (up to 2.9 GHz) or quad-core (up to 3.3 GHz) or dual-core (up to 3.0 GHz). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz memory speed. Up to 20 MB L3 cache.
Chipset	Intel C600 series.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs, UDIMMs and LRDIMMs supported. 1.5V and low-voltage 1.35V DIMMs supported. Support for up to 1600 MHz memory speed depending on the processor. Four memory channels per processor (3 DIMMs per channel).
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 64 GB with 16x 4 GB UDIMMs and two processors
Memory protection	ECC, optional memory mirroring and memory rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA and SSD drives. Optional support for up to eight 1.8" SSDs.
Maximum internal storage	With two 2.5" hot-swap drives: **Up to 2 TB with 1 TB 2.5" NL SAS HDDs**, or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" SATA HDDs, or **up to 3.2 TB with 1.6 TB 2.5" SATA SSDs**. An intermix of SAS and SATA HDDs and SSDs is supported. Alternatively, with 1.8" SSDs and ServeRAID M5115 RAID adapter, **up to 6.4 TB with eight 800 GB 1.8" SSDs**. Additional storage available with an attached Flex System Storage Expansion Node.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller. Optional ServeRAID M5115 RAID controller with RAID 0, 1, 10 5, 50 support and 1GB cache. Supports up to eight 1.8" SSD with expansion kits. Optional flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	x2x models: **Two 10 Gb Ethernet ports** with Embedded 10Gb Virtual Fabric Ethernet LAN-on-motherboard (LOM) controller; **Emulex BE3** based. x1x models: None standard; optional 1Gb or 10Gb Ethernet adapters
PCI Expansion slots	Two I/O connectors for adapters. PCI Express 3.0 x16 interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters.
Ports	USB ports: one external. Two internal for **embedded hypervisor** with optional USB Enablement Kit. Console breakout cable port providing **local KVM and serial ports** (cable standard with chassis; additional cables optional)
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel, Automatic Server Restart. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.1, 5.0, 5.1.

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 6.98 kg (15.4 lb)

Hot-swap drive bay backplane — Processor 2 and 12 memory DIMMs — I/O connector 1 — Fabric Connector[b]

Two 2.5" HS drive bays

USB port — Console breakout cable port — Power — LED panel

Light path diagnostics — Processor 1 and 12 memory DIMMs — I/O connector 2 — Expansion Connector

Popular and system-unique options: (see model table for processor options)

Part	Description
90Y3105	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
49Y1563	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3109	8GB (1x8GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y8119	x240 USB Enablement Kit
90Y3310	IBM Flex System Embedded 10Gb Virtual Fabric Upgrade
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
43W7718	IBM 200GB SATA 2.5" MLC HS SSD
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
90Y3554	IBM Flex System CN4054 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
68Y8588	IBM Flex System Storage Expansion Node

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x240: http://www.redbooks.ibm.com/abstracts/tips0860.html?0pen

IBM Flex System x240 Compute Node (Page 2 of 2) (withdrawn)
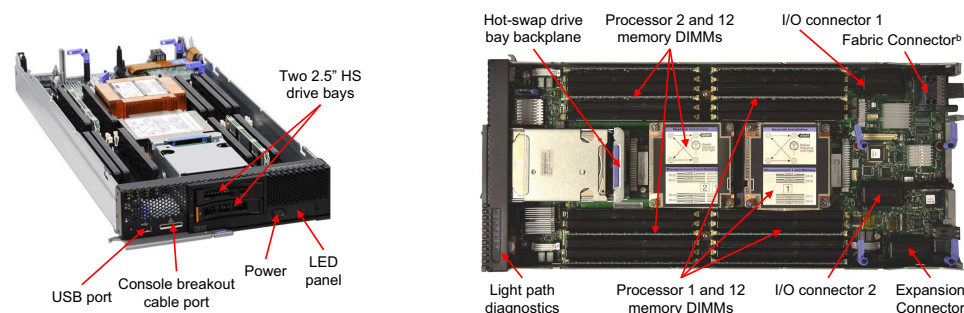
Model[1]	Processor (2 maximum)	Second CPU	Memory	RAID controller	Disk bays (used/max)[a]	Disks	10 GbE Embedded Virtual Fabric	I/O slots (used/max)	Announced
8737-L2x	1x Xeon E5-2660 8C 2.2GHz 20MB 1600MHz 95W	81Y5187	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	Apr 2012 / Sep 2014
8737-M1x	1x Xeon E5-2680 8C 2.7GHz 20MB 1600MHz 130W	81Y5188	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	No	0 / 2	Apr 2012 / Sep 2014
8737-M2x	1x Xeon E5-2680 8C 2.7GHz 20MB 1600MHz 130W	81Y5188	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	Apr 2012 / Sep 2014
8737-N2x	1x Xeon E5-2643 4C 3.3GHz 10MB 1600MHz 130W	81Y5190	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	Apr 2012 / Sep 2014
8737-Q2x	1x Xeon E5-2667 6C 2.9GHz 15MB 1600MHz 130W	81Y5189	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	Apr 2012 / Sep 2014
8737-R2x	1x Xeon E5-2690 8C 2.9GHz 20MB 1600MHz 135W	49Y8116	2x 4 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	Apr 2012 / Sep 2014

   a. The 2.5-inch drive bays can be replaced and expanded with SSD kits and a ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)
   b. The x2x models include an Embedded 10Gb Virtual Fabric Ethernet controller; connections are routed using a Fabric Connector. The Fabric Connector precludes the use of an I/O adapter in I/O connector 1.

Components	Specification
Form factor	Standard compute node.
Chassis support	IBM Flex System Enterprise Chassis
Processor	Up to two **Intel Xeon Processor E5-2600** product family CPUs with eight-core (up to 2.9 GHz) or six-core (up to 2.9 GHz) or quad-core (up to 3.3 GHz) or dual-core (up to 3.0 GHz). Two QPI links up to 8.0 GT/s each. Up to 1600 MHz memory speed. Up to 20 MB L3 cache.
Chipset	Intel C600 series.
Memory	Up to **24 DIMM sockets** (12 DIMMs per processor) using Low Profile (LP) DDR3 DIMMs. RDIMMs, UDIMMs and LRDIMMs supported. 1.5V and low-voltage 1.35V DIMMs supported. Support for up to 1600 MHz memory speed depending on the processor. Four memory channels per processor (3 DIMMs per channel).
Memory maximums	With LRDIMMs: **Up to 768 GB with 24x 32 GB LRDIMMs** and two processors With RDIMMs: Up to 384 GB with 24x 16 GB RDIMMs and two processors With UDIMMs: Up to 64 GB with 16x 4 GB UDIMMs and two processors
Memory protection	ECC, optional memory mirroring and memory rank sparing.
Disk drive bays	**Two 2.5" hot-swap SAS/SATA drive bays** supporting SAS, SATA and SSD drives. Optional support for up to eight 1.8" SSDs.
Maximum internal storage	With two 2.5" hot-swap drives: **Up to 2 TB with 1 TB 2.5" NL SAS HDDs**, or up to 2.4 TB with 1.2 TB 2.5" SAS HDDs, or up to 2 TB with 1 TB 2.5" SATA HDDs, or **up to 3.2 TB with 1.6 TB 2.5" SATA SSDs**. An intermix of SAS and SATA HDDs and SSDs is supported. Alternatively, with 1.8" SSDs and ServeRAID M5115 RAID adapter, **up to 6.4 TB with eight 800 GB 1.8" SSDs**. Additional storage available with an attached Flex System Storage Expansion Node.
RAID support	RAID 0, 1, 1E, and 10 with integrated LSI SAS2004 controller. Optional ServeRAID M5115 RAID controller with RAID 0, 1, 10 5, 50 support and 1GB cache. Supports up to eight 1.8" SSD with expansion kits. Optional flash-backup for cache, RAID 6/60, SSD performance enabler.
Network interfaces	x2x models: **Two 10 Gb Ethernet ports** with Embedded 10Gb Virtual Fabric Ethernet LAN-on-motherboard (LOM) controller; **Emulex BE3** based. x1x models: None standard; optional 1Gb or 10Gb Ethernet adapters
PCI Expansion slots	Two I/O connectors for adapters. PCI Express 3.0 x16 interface. Additional PCIe 3.0 x16 interface to connect one PCIe Expansion Node for up to four PCIe full-height or low-profile adapters.
Ports	USB ports: one external. Two internal for **embedded hypervisor** with optional USB Enablement Kit. Console breakout cable port providing **local KVM and serial ports** (cable standard with chassis; additional cables optional)
Systems management	UEFI, IBM **Integrated Management Module II** (IMM2) with Renesas SH7757 controller, Predictive Failure Analysis, **Light Path Diagnostics** panel, Automatic Server Restart. Support for IBM Flex System Manager, IBM Systems Director, IBM ServerGuide.
Video	Matrox G200eR2 video core with 16 MB video memory integrated into the IMM2. Maximum resolution is 1600x1200 at 75 Hz with 16 M colors.
Security features	Power-on password, administrator's password, Trusted Platform Module 1.2
Limited warranty	3-year customer-replaceable unit and onsite limited warranty with 9x5/NBD
Operating systems supported	Microsoft Windows Server 2008 R2 and 2012, Red Hat Enterprise Linux 5 and 6, SUSE Linux Enterprise Server 10 and 11, VMware ESX 4.1, 5.0, 5.1.

Components	Specification
Service and support	Optional service upgrades are available through IBM ServicePacs: 4-hour or 2-hour response time, 8 hours fix time, 1-year or 2-year warranty extension, remote technical support for IBM hardware and selected IBM and OEM software.
Dimensions	Width: 217 mm (8.6 in), height: 56 mm (2.2 in), depth: 492 mm (19.4 in)
Weight	Maximum configuration: 6.98 kg (15.4 lb)

Popular and system-unique options: (see model table for processor options)

Part	Description
90Y3105	32GB (1x32GB, 4Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP LRDIMM
49Y1563	16GB (1x16GB, 2Rx4, 1.35V) PC3L-10600 CL9 ECC DDR3 1333MHz LP RDIMM
90Y3109	8GB (1x8GB, 2Rx4, 1.5V) PC3-12800 CL11 ECC DDR3 1600MHz LP RDIMM
49Y8119	x240 USB Enablement Kit
90Y9310	IBM Flex System Embedded 10Gb Virtual Fabric Upgrade
81Y9650	IBM 900GB 10K 6Gbps SAS 2.5" SFF HS HDD
43W7718	IBM 200GB SATA 2.5" MLC HS SSD
90Y4390	ServeRAID M5115 SAS/SATA Controller for IBM Flex System
90Y3554	IBM Flex System CN4054 10Gb Virtual Fabric Adapter
81Y8983	IBM Flex System PCIe Expansion Node
68Y8588	IBM Flex System Storage Expansion Node

For a list of all supported options, see the *IBM Redbooks Product Guide* for the IBM Flex System x240:
http://www.redbooks.ibm.com/abstracts/tips0860.html?Open

IBM Flex System x240 Compute Node Express Models (withdrawn)

Model[1]	Processor (2 maximum)	Second CPU	Memory	RAID controller	Disk bays (used/max)[a]	Disks	10 GbE Embedded Virtual Fabric	I/O slots (used/max)	Announced / Withdrawn
Europe, Middle East, Africa									
8737-K2G	1x Intel Xeon E5-2650 8C 2.0GHz 20MB 1600MHz 95W	81Y5186	2x 8 GB	LSI SAS2004	2.5" hot-swap (0 / 2)	Open	Standard	1 / 2[b]	July 2013 / Apr 2014

    a. The 2.5-inch drive bays can be replaced and expanded with SSD kits and a ServeRAID M5115 RAID controller to support up to eight 1.8-inch solid state drives (SSDs)

    b. The x2x models include an Embedded 10Gb Virtual Fabric Ethernet controller; connections are routed using a Fabric Connector. The Fabric Connector precludes the use of an I/O adapter in I/O connector 1.

End notes

Warranty information: For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC, 27709, Attn: Dept JDJA/B203. IBM makes no representation or warranty regarding third-party products or services.

1   The model numbers listed here might include the letter *x*. The *x* represents a letter that varies by country and geography. For example, in the United States, the *x* is replaced with the letter *U*, so that model A1x is actually A1U in the US. In Europe, the letter *x* is replaced with *G*. See the product-specific official IBM announcement letter for country-specific model numbers.

2   Models numbers that start with an *E* (for example E1U) or *K* (for example K1G) are Express Models that are usually only available in certain countries. Check with your local IBM representative or IBM Business Partner representative for information. For a list of which countries are in each IBM market, see "IBM worldwide markets" on page 154.

3   IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

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IBM worldwide markets

IBM segments worldwide markets by country into integrated operating teams. Express models as listed in this document are typically available for only a subset of the markets.

The North America (NA) market consists of these countries:

- Bahamas
- Barbados
- Bermuda
- Canada
- Caribbean
- Cayman Islands
- Guyana
- Jamaica
- Netherlands Antilles
- Saint Lucia
- Suriname
- Trinidad
- United States

The Latin America (LA) market consists of these countries:

- Argentina
- Bolivia
- Brazil
- Chile
- Colombia
- Costa Rica
- Ecuador
- Mexico
- Paraguay
- Peru
- Uruguay
- Venezuela

The Europe market is a combination of the European IOT and CEE, listed below.

The European Integrated Operating Team (IOT) market consists of these countries:

- Andorra
- Austria
- Belgium
- British Indian Ocean Territory
- Comoros
- Cyprus
- Denmark
- Falkland Islands (Malvinas)
- Faroe Islands
- Finland
- France
- French Guiana
- French Polynesia
- French Southern Territories
- Germany
- Gibraltar
- Greece
- Greenland
- Guadeloupe
- Holy See (Vatican City State)
- Iceland
- Ireland

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- ► Israel
- ► Italy
- ► Liechtenstein
- ► Luxembourg
- ► Malta
- ► Martinique
- ► Mauritania
- ► Mayotte
- ► Monaco
- ► Netherlands
- ► New Caledonia
- ► Norway
- ► Pitcairn
- ► Portugal
- ► Réunion
- ► Saint Helena
- ► Saint Pierre and Miquelon
- ► San Marino
- ► Spain
- ► Svalbard and Jan Mayen
- ► Sweden
- ► Switzerland
- ► United Kingdom
- ► Vanuatu
- ► Wallis and Futuna
- ► Western Sahara

The Central and Eastern Europe (CEE) market consists of these countries:

- ► Angola
- ► Armenia
- ► Azerbaijan
- ► Belarus
- ► Bosnia and Herzegovina
- ► Bulgaria
- ► Croatia
- ► Czech Republic
- ► Estonia
- ► Hungary
- ► Latvia
- ► Lithuania
- ► Poland
- ► Republic of Macedonia
- ► Romania
- ► Serbia and Montenegro
- ► Slovakia
- ► Slovenia
- ► Turkey

The Europe market is a combination of the European IOT and CEE.

The Middle East and Africa (MEA) market consists of these countries:

- ► Afghanistan
- ► Albania
- ► Algeria
- ► Bahrain
- ► Botswana
- ► Burkina Faso
- ► Burundi
- ► Cameroon
- ► Cape Verde
- ► Central Africa Republic
- ► Chad
- ► Congo, Democratic Republic of the
- ► Côte d'Ivoire
- ► Djibouti
- ► Dubai
- ► Egypt
- ► Equatorial Guinea
- ► Eritrea
- ► Ethiopia
- ► Gabon
- ► Gambia
- ► Ghana
- ► Guinea
- ► Guinea-Bissau
- ► Iraq
- ► Jordan
- ► Kenya
- ► Kuwait
- ► Lebanon
- ► Lesotho
- ► Liberia
- ► Libyan Arab Jamahiriya
- ► Madagascar
- ► Malawi
- ► Mali
- ► Mauritius
- ► Morocco
- ► Mozambique
- ► Namibia
- ► Niger
- ► Nigeria
- ► Oman
- ► Pakistan
- ► Qatar
- ► Republic of Moldova
- ► Rwanda
- ► Sao Tome and Principe
- ► Saudi Arabia
- ► Senegal
- ► Seychelles
- ► Sierra Leone
- ► Somalia

- ► South Africa
- ► Sudan
- ► Swaziland
- ► Syrian Arab Republic
- ► Tanzania, United Republic of
- ► Togo
- ► Tunisia
- ► Uganda
- ► United Arab Emirates
- ► Yemen
- ► Zambia
- ► Zimbabwe

The Russia and Commonwealth of Independent States (CIS) market consists of these countries:

- ► Georgia
- ► Kazakhstan
- ► Kyrgyzstan
- ► Russian Federation
- ► Serbia and Montenegro
- ► Slovakia
- ► Slovenia
- ► Tajikistan
- ► Turkmenistan
- ► Ukraine
- ► Uzbekistan

The Asia/Pacific (AP) market consists of these countries or regions:

- ► Australia
- ► Bangladesh
- ► Brunei
- ► Hong Kong S.A.R. of China
- ► India
- ► Indonesia
- ► Korea
- ► Malaysia
- ► New Zealand
- ► People's Republic of China
- ► Philippines
- ► Singapore
- ► Sri Lanka
- ► Taiwan
- ► Thailand
- ► Vietnam

Abbreviations and acronyms

ac	alternating current	**ODD**	optical disk drive
AMD	Advanced Micro Devices	**PCI**	Peripheral Component Interconnect
BMC	Baseboard Management Controller	**PCI-E**	PCI Express
CPU	central processing unit	**PXE**	Preboot eXecution Environment
CTO	configure-to-order	**QPI**	QuickPath Interconnect
DC	domain controller	**RAID**	redundant array of independent disks
DDS	Digital Data Storage		
DIMM	dual inline memory module	**RAM**	random access memory
DVD	digital versatile disc	**RAS**	remote access services; row address strobe
ECC	error checking and correcting		
EOL	end of life	**RDIMM**	registered DIMM
EXA	IBM Enterprise X-Architecture	**RH**	Red Hat
FOD	feature on demand	**RHEL**	Red Hat Enterprise Linux
GB	gigabyte	**RHEV**	Red Hat Enterprise Virtualization
GPFS	General Parallel File System	**RSS**	Receive-side scaling
GT	Gigatransfers	**SAS**	serial-attached SCSI
HBA	host bus adapter	**SATA**	Serial ATA
HDD	hard disk drive	**SFF**	small form factor
HE	high efficiency	**SLES**	SUSE Linux Enterprise Server
HF	high frequency	**SMI**	Scalable Memory Interconnect
HH	half-high	**SPORE**	IBM ServerProven® Opportunity Request for Evaluation
HS	hot swap		
I/O	input/output	**SS**	simple swap
IBM	International Business Machines	**SSD**	solid state drive
iBMC	Integrated Baseboard Management Controller	**TB**	terabyte
		TOE	TCP offload engine
IMM	integrated management module	**UDIMM**	unbuffered DIMM
IT	information technology	**UEFI**	Unified Extensible Firmware Interface
ITSO	International Technical Support Organization		
		USB	universal serial bus
LAN	local area network	**VGA**	video graphics array
LFF	large form factor	**VLAN**	virtual LAN
LP	low profile	**VLP**	very low profile
LRDIMM	load reduced DIMM	**VRM**	voltage regulator module
LTO	Linear Tape-Open	**WOL**	Wake on LAN
MB	megabyte		
MLC	multilevel cell		
MRG	Messaging, Realtime, and Grid		
NBD	next business day		
NIC	network interface card		
NL	nearline		