

IBM System x family brochure

IBM System x rack, BladeCenter and tower servers



IBM System x servers

Highlights

- IBM® System x® and BladeCenter® servers help to deliver a dynamic infrastructure that provides leadership quality and service that you can trust, as well as:
 - Reduces operating costs with higher performance, energy efficiency, simplified management, virtualization and increased utilization
 - Manages present and future risk in challenging economic conditions with best-in-class RAS and future-proof IT
 - Improves service with an end-to-end approach to systems management
- The new generation of System x and BladeCenter servers delivers business value and reduces costs for clients through industry-leading scalability, virtualization and management capabilities

Recent economic conditions have changed the way that business operates. To adapt demands innovative ideas and solutions. At the same time, the world is becoming smarter—more instrumented, interconnected and intelligent. Businesses have to manage increasingly large data pools and a customer base with higher expectations, without spending more on IT. IBM delivers solutions—smarter systems built for a smarter planet to help you reduce costs and improve service while still managing risk.

Reduce cost

IBM X-Architecture® infuses System x servers with both innovation and industry standards for solutions that help you significantly reduce operating costs. Managing energy in the data center is a growing concern due to increasing numbers of servers, the incremental heat they generate and the rising cost of energy. With System x servers, IBM innovative technology



New e5 systems provide breakthrough innovation for smarter computing.

helps you lower energy usage and ownership costs. By consolidating and virtualizing on System x servers, you can increase the utilization of hardware and decrease the physical assets you need to manage.

Improve service

The proliferation of servers can make it difficult to manage your data center. Dynamic management tools and world-class service and support help deliver higher performance and drive your ability to respond quickly to changing business needs. Achieve integrated visibility, control and automation across all of your business and IT infrastructure components with the innovative systems management provided standard in System x and BladeCenter systems. Improve asset reliability, availability and uptime. These underpin the quality delivery of service while maximizing the return on lifetime asset investment.



New System x servers feature extreme processing power and superior energy-management and cooling features.

IBM Systems Director is designed to help deliver reduced IT costs by helping you to optimize your servers, storage systems and network devices. With tools to automate repetitive tasks and integrate functions in a single interface, the solution helps improve control and management of your entire System x infrastructure.

IBM Systems Director Express® Edition provides the integrated tools needed to efficiently visualize and communicate the relationships of physical and virtual systems that are discovered, monitor their health, define and receive threshold alerts, and update system firmware and operating environments.

IBM Systems Director Standard Edition includes all of the capabilities of the Express Edition, and adds advanced OS deployment, power management, monitoring and remote control features under the same console.

Manage risk

Business resilience from System x and BladeCenter systems provides the ability to rapidly adapt and respond to both risk and opportunity, in order to maintain continuous business operations, reduce operational costs, enable growth and be a more trusted partner. Proactive management tools in System x servers such as light path diagnostics and Predictive Failure Analysis deliver industry-leading capabilities to identify hardware problems before they happen and fix them quickly—helping keep your systems up and running. Also, you get peace of mind with trusted IBM service and support.

High-performance eX5 systems

IBM eX5 systems deliver a portfolio of flexible enterprise servers that offer memory, storage and performance scalability for your most demanding applications. These eX5 systems deliver innovation and offer extraordinary value and investment protection, are available in multiple form factors and include lower entry points for enterprise-level virtualization, database and transaction processing. The IBM System x3850 X5 can scale from four to eight sockets and up to 96 memory DIMMs (with MAX5) per 4-socket system. eXA scaling with dual-node x3850 X5 systems with MAX5 provides performance scaling up to eight sockets with FlexNode partitioning and up to 192 memory DIMMs. The IBM System x3690 X5 provides an innovative 2-socket system that can scale memory to 64 DIMMs (with MAX5). Both of these systems support a wide range of options. IBM's unique eXFlash provides high performance, hot-swappable SSD storage with the ability to provide RAID data protection. Choose a rack server that offers the performance your applications need, the flexibility the market demands, and the availability your customers expect—all at a cost businesses can afford.

New generation of x86 servers

The business productivity suite of IBM x86 servers continues to grow to address your specific needs. New additions to the portfolio include the value, storage-rich System x3620 M3, the extremely storage-dense System x3630 M3 and the 4-socket, AMD Opteron-equipped System x3755 M3. The flagship System x servers, the x3650 M3 and x3550 M3 deliver energy-smart designs featuring low-wattage, energy-efficient power supplies, counter rotating fans, altimeters and advanced power management. For customers looking for an entry point to IBM server technology, IBM now offers the 1-socket System x3250 M4. The System x rack servers can help reduce power costs up to \$100 per server per year.¹ Integrating up to two Intel® Xeon® 5600 series processors with QuickPath Interconnect, Hyper-Threading and Turbo Boost technology, the 2-socket servers dramatically improve performance compared to previous generation servers.

For smaller or distributed office environments, System x offers the entry-level System x3100 M4 tower server and the System x3500 M3 and System x3400 M3 tower servers that are packed with business-critical features in a tower platform. Rock-solid and reliable, these systems offer extensive flexibility, storage and security for servers that sit right beside your desk. Built on the latest Intel Xeon 5600 series processors, the x3500 M3 and x3400 M3 offer the performance speeds that are so critical to businesses with remote offices and a high number of transactions.

To deliver System x technology that works for your business, System x supports a broad range of operating systems and virtualization solutions that allow you to consolidate and simplify your heterogeneous workloads on a single platform. Virtualization on System x helps you reduce your costs and boost your IT resiliency.

Data center model

IBM System x iDataPlex® addresses the needs of the data center with maximum density and simplified manageability while reducing power and cooling consumption. iDataPlex Intel Xeon processor-based dx360 M3 servers help pack more processors into the same power and cooling envelope, better utilizing floor space, and creating the right-size data center design.

HPC clustered solutions

IBM Intelligent Clusters incorporate System x rack servers and include iDataPlex and BladeCenter servers, with storage and networking to run high performance computing workloads on Linux or Microsoft Windows operating systems. All components of the cluster are assembled in IBM factories, tested in IBM labs, shipped fully integrated and ready for deployment at your site, with a single point of contact for worldwide support.

Higher efficiency virtualization

System x servers, in BladeCenter and rack form factor, can be purchased as a complete solution—with servers, networking, storage, management and Infrastructure such as racks and power supplies. These tested integration platforms are unique in their ability to lower the risk and speed of deploying a more complex virtualized data center. Servers, network and storage work in concert to yield the highest performance and are designed to deliver reliability while new, intuitive management features have simplified the steps from power-on to ongoing maintenance. Now, IT managers, CIOs and CFOs can easily see the immediate return on investment.

Scaling easily to the cloud

System x virtualized platforms based on VMware Enterprise 4.1 can easily move to cloud with easy to add software from IBM. With the latest in cloud technology, IBM Starter Kit for Cloud makes it easy to dynamically request, provision and deploy both resources and workloads automatically and securely, using an intuitive self-service portal. Cloud is a perfect services delivery platform, dramatically improving total cost of ownership.

Choose your operating system

To deliver System x technology that works for your business, System x offers a choice of operating systems, broadening the application offerings available and increasing the ways clients can put System x servers to work. Choose from industry-leading

providers including Microsoft Windows, Red Hat Enterprise Linux, SUSE Linux Enterprise, VMware and Oracle Solaris. These operating systems are available in most countries at competitive prices when purchasing new servers from IBM or IBM Business Partners.

System x model	x3100 M4	x3200 M3	x3400 M3	x3500 M3	x3250 M3
Form factor	Tower, 5U rack mountable	Tower, 5U rack mountable	Tower, 5U rack mountable	Tower, 5U rack mountable	Rack/1U
Processor	Intel Xeon E3-1200 Series (quad-core) up to 3.4 GHz and 1333 MHz or Core i3 (dual-core) up to 3.1 GHz and 1333 MHz	Intel Xeon 3400 Series (quad-core) up to 2.93 GHz and 1333 MHz or Intel Celeron®, Pentium or Core i3 (dual-core) up to 3.06 GHz and 1333 MHz	Four-core Intel Xeon E5620 2.40 GHz with 12 MB of cache per processor socket standard or six-core Intel Xeon X5675 3.06 GHz with 12 MB of cache per processor socket (configure to order only)	Intel Xeon 5500/5600 processors (six-core Intel Xeon X5690 3.46 GHz or four-core Intel Xeon X5687 3.60 GHz up to 6.4 Gbps QPI system speed)	Intel Xeon 3400 Series (quad-core) up to 2.93 GHz and 1333 MHz or Intel Celeron, Pentium or Core i3 (dual-core) up to 3.06 GHz and 1333 MHz
Number of processors (std/max)	1/1	1/1	1/2	1/2	1/1
Cache (max)	Up to 8 MB L3	Up to 8 MB L3	4 MB, 8 MB or 12 MB per processor socket	12 MB per processor socket	Up to 8 MB L3
Memory (std/max)	Up to 32 GB DDR-3 ECC memory, up to 1333 MHz; 1 GB, 2 GB, 4 GB and 8 GB UDIMMs	Up to 32 GB DDR-3 ECC memory, up to 1333 MHz; 1 GB, 2 GB and 4 GB UDIMMs and 1 GB, 2 GB, 4 GB and 8 GB RDIMMs	16 DIMM slots maximum, 128 GB with DDR-3 1333 MHz RDIMMs or 48 GB with DDR-3 1333 MHz UDIMMs	16 DIMM slots maximum, 192 GB with DDR-3 1333 MHz RDIMMs or 48 GB with DDR-3 1333 MHz UDIMMs	Up to 16 GB DDR-3 UDIMMs via 4 DIMM slots or 32 GB DDR-3 RDIMMs via 6 DIMM slots
Expansion slots	One PCIe x16 mechanical/x8 electrical, one PCIe x8, one PCIe x4, one PCIe x1	Two PCIe x8 Gen2, one PCIe x4, two PCI (32-bit/33 MHz), one dedicated PCIe x4 for RAID-0, -1 controller	Five PCIe and one PCI standard; additional two PCI-X or one PCIe (configure to order only)	Six PCIe and one PCI standard; additional two PCI-X available via configure to order and requires removal of one PCIe slot	2 PCIe x8 Gen2 slots, dedicated PCIe x4 for RAID-0, -1, optional PCI-X (special bid only)

System x model	x3100 M4	x3200 M3	x3400 M3	x3500 M3	x3250 M3
Maximum internal storage	Up to 12 TB simple-swap 3.5" SATA HDDs	Up to 12 TB simple-swap/hot-swap 3.5" SAS/SATA HDDs or hot-swap 2.5" SAS HDDs (model dependent, 2.5" available via special bid only)	24 TB of 3.5" simple-swap SATA HDDs; 16.0 TB of 3.5" hot-swap SATA/SAS HDDs or eight or sixteen 2.5" hot-swap SATA/SAS HDDs. Eight 3.5" hot-swap SAS/SATA HDDs ¹	24 TB of 2.5" hot-swap SAS/SATA (HDD upgrade options required) or 16.0 TB of 3.5" hot-swap SAS/SATA (via configure to order only)	6.0 TB simple-swap/hot-swap 3.5" SAS/SATA HDDs or hot-swap 2.5" SAS HDDs (model dependent)
Network interface	Dual Gigabit Ethernet	Dual Gigabit Ethernet	Integrated dual Gigabit Ethernet	Broadcom 5709S onboard NIC with dual Gigabit Ethernet ports with TOE	Dual Gigabit Ethernet
Power supply (std/max)	300W fixed 80+ Bronze or 350 W fixed	401 W fixed 1/1 or 430 W hot-swap redundant 2/2	920 W 1/2 or 670 W 1/1 (model dependent)	920 W 1/2	351 W 1/1; optional high-efficiency power supply 1/1
Light path diagnostics	Limited	Limited	Limited	Yes	Limited
RAID support	Embedded RAID-0, -1, -10 (standard), HW RAID-0/1/10/5/6 (optional)	Hot-swap hardware RAID-0, -1 (standard), simple-swap hardware RAID-0, -1 (optional); upgrade to RAID-5 optional	Integrated 6 Gbps or 3 Gbps RAID-0, -1, -1E (model dependent), optional RAID-10, -5, -50, -6, -60	Integrated 6 Gbps or 3 Gbps hardware RAID-0, -1, -1E, optional RAID-5, -6, -10, -50, -60	Hot-swap hardware RAID-0, -1 (standard), simple swap hardware RAID-0, -1 (optional); optional RAID-5
OS support (Available for purchase)	Microsoft Windows Server, Red Hat Linux, SUSE Linux, VMware ESX	Microsoft Windows Server, Red Hat Linux, SUSE Linux, VMware ESX and ESXi	Microsoft Windows Server 2008 R2, Red Hat Linux, SUSE Linux, VMware ESX Server, integrated hypervisor key	Microsoft Windows Server 2008 R2, Red Hat Enterprise Linux, SUSE Linux Enterprise, VMware ESX and ESXi	Microsoft Windows Server, Red Hat Linux, SUSE Linux, VMware ESX and ESXi

System x model	x3250 M4	x3550 M3	x3620 M3	x3630 M3	x3650 M3
Form factor	Rack/1U	Rack/1U	Rack/2U	Rack/2U	Rack/2U
Processor	Intel Xeon E3-1200 Series (quad-core) up to 3.4 GHz and 1333 MHz or Core i3 (dual-core) up to 3.1 GHz and 1333 MHz	Up to two 3.46 GHz six-core (3.60 GHz four-core) Intel Xeon 5600 series processors with QuickPath Interconnect Technology	Up to two 3.06 GHz six-core (3.20 GHz four-core) Intel Xeon 5600 series processors with QuickPath Interconnect technology, up to 1333 MHz memory access speed. Also supports select Intel Xeon 5500 series processors	Up to two 3.06 GHz six-core (3.20 GHz four-core) Intel Xeon 5600 series processors with QuickPath Interconnect technology, up to 1333 MHz memory access speed	Up to two 3.46 GHz six-core (3.60 GHz four-core) Intel Xeon 5600 series processors with QuickPath Interconnect Technology
Number of processors (std/max)	1/1	1/2	1/2	1/2	1/2
Cache (max)	Up to 8 MB L3	Up to 12 MB L3	Up to 12 MB L3	Up to 12 MB L3	Up to 12 MB L3
Memory (std/max)	Up to 32 GB DDR-3 ECC memory, up to 1333 MHz; 1 GB, 2 GB, 4 GB and 8 GB UDIMMs	Up to 192 GB DDR-3 RDIMMs via 18 DIMM slots or 48 GB DDR-3 UDIMMs via 12 DIMM slots	Up to 192 GB in 12 slots using RDIMMs	Up to 192 GB DDR-3 RDIMMs via 12 DIMM slots	Up to 192 GB DDR-3 RDIMMs via 18 DIMM slots or 48 GB DDR-3 UDIMMs via 12 DIMM slots
Expansion slots	One PCIe x8 Gen2, one PCIe x4 Gen2	2 PCIe x16 Gen2 slots; one half-length, full-height; one low-profile; each slot convertible to PCI-X with riser option	Two x8 PCIe Gen II slots and one x4 PCIe Gen II buried slot	2 PCIe slots	4 PCIe x8 Gen2 slots: 2 x8 full-length, full-height; 1 x8 half-length, full-height; 1x8 low-profile. 4x8 are convertible to 2x16 via optional risers
Maximum internal storage	Up to 6 TB simple-swap 3.5" SATA HDDs or hot-swap 2.5" SAS HDDs (model dependent, 2.5" SATA available via special bid only)	Up to 8.0 TB (hot-swap SAS/SATA)	Up to 24 TB hot-swap SAS or SATA	Up to 42 TB	Up to 16.0 TB ¹ (hot-swap SAS/SATA)

System x model	x3250 M4	x3550 M3	x3620 M3	x3630 M3	x3650 M3
Network interface	Dual Gigabit Ethernet	Integrated 2 ports, plus 2 ports optional Gigabit Ethernet	Integrated two ports	Dual Gigabit Ethernet	Integrated 2 ports, plus 2 ports optional Gigabit Ethernet
Power supply (std/max)	1/2; 300W fixed or Hot-swap, redundant 460W high-efficiency	1/2; 460 W, 675 W, 675 W high efficiency or 675 W DC (model dependent)	1/2; 460 W or 675 W HE each	1/2; 675 W, 675 W HE each	1/2; 460 W, 675 W, 675 W high efficiency or 675 W DC (model dependent)
Light path diagnostics	Limited	Yes	Yes	Yes	Yes
RAID support	Embedded RAID-0, -1, -10 (standard), HW RAID-0/1/10/5/6 (optional)	6 Gbps RAID-0, -1, -10 or 6 Gbps RAID-0, -1, -10, -5, -50 with 256 MB or 512 MB cache and additional option battery backup (model dependent)	Embedded software RAID-0, -1 or hardware RAID-0, -1, -1E or RAID-0, -1, -10 (optional -5 with SED function) or RAID-0, -1, -10, -5, -50 (optional -6,-60 with SED function and optional battery), model dependent	6 Gbps RAID-0, -1, -10 standard, upgradeable to hardware RAID-5 or RAID-6 (model dependent)	6 Gbps RAID-0, -1, -10 or 6 Gbps RAID-0, -1, -10, -5, -50 with 256 MB or 512 MB cache and additional option battery backup (model dependent)
OS support (Available for purchase)	Microsoft Windows Server, Red Hat Linux, SUSE Linux, VMware ESX	Microsoft Windows Server 2008 R2, Red Hat Enterprise Linux, SUSE Linux Enterprise Server and VMware ESXi, Oracle Solaris 10 (model dependent)	Microsoft Windows Server, Red Hat Linux, SUSE Linux, VMware	Microsoft Windows Server, Red Hat Linux, SUSE Linux, VMware	Microsoft Windows Server 2008 R2 and 2008, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESX and ESXi, Oracle Solaris 10 (model dependent)

System x model	x3755 M3	x3690 x5	x3850 X5	iDataPlex dx360 M3
Form factor	Rack/2U	Rack/2U per chassis	Rack/4U per chassis	Rack/1U or 2U
Processor	Up to 3.0 GHz 16-core or Opteron 6200 Series processors	Intel Xeon up to 2.40 GHz (10-core)/1066 MHz memory access	Intel Xeon up to 2.40 GHz (10-core)/1066 MHz memory access	Intel Xeon 5600 series up to 3.06 GHz (six-core) or 3.20 GHz (four-core)
Number of processors (std/max)	2/4	1/2	2/4 per node (optional 2-node support)	2 CPU, 2 GPU adapters (optional)
Cache (max)	Up to 32 MB	Up to 30 MB	Up to 30 MB	Up to 12 MB L3
Memory (std/max)	Up to 512 GB DDR-3 RDIMM memory or 128 GB DDR-3 UDIMM memory via 32 DIMM slots (max)	8 GB/1.0 TB PC3-10600 DDR3 or DDR3L, up to 2.0 TB with MAX5 and 32 GB DIMM	16 GB/2.0 TB max PC3-10600 DDR3 or DDR3L, up to 3.0 TB with MAX5 and 32 GB DIMM (double for 2-node systems)	Up to 192 GB DDR-3 1333 MHz via 16 DIMM slots
Expansion slots	4 PCIe slots	5 PCIe slots	7 PCIe slots	Up to 2 slots PCIe x16 electrical/x16 mech (Gen 2), 2 x8 PCIe
Maximum internal storage	Up to 24 TB	9.6 TB SAS per chassis (supports 16 x 73.4 GB, 146.8 GB, 300 GB, 500 GB and 600 GB hard disk drives, or 24 x 50 GB and 200 GB solid state drives)	4.8 TB per chassis (supports 8 x 73.4 GB, 146.8 GB, 300 GB, 500 GB and 600 GB SAS hard disk drives, 8 x 160 GB and 500 GB SATA hard disk drives, or 16 x 50 GB and 200 GB solid state drives)	24 TB (3U storage chassis)

System x model	x3755 M3	x3690 x5	x3850 X5	iDataPlex dx360 M3
Network	Integrated quad Gigabit Ethernet	Integrated dual Gigabit Ethernet with TCP-IP off-load engine, optional Emulex 10 GbE Virtual Fabric Adapter	Integrated dual Gigabit Ethernet with TCP-IP off-load engine, optional Emulex 10 GbE Virtual Fabric Adapter (standard in most models)	Integrated 2 ports Gigabit Ethernet, plus 1 port for management
Power supply (std/max)	1100 W 1/3	675 W 220 V 1/4	1975 W 220 V 2/2	900 W high efficiency nonredundant (per two servers), 550 W high efficiency nonredundant (per two servers), 750 W N+N redundant (per two servers)
Light path diagnostics	Yes	Yes	Yes	Yes
RAID support	6 Gbps RAID-0, -1, -10 standard, upgradeable to hardware RAID-5	RAID-0, -1 standard in most models, optional RAID-5, -6	RAID-0, -1 standard in most models; optional RAID-5, -6	RAID-0, -1, -5, -6, -10, -50, -60 via optional I/O controller
OS support	Microsoft Windows Server, Red Hat Linux, SUSE Linux and VMware	Microsoft Windows Server 2008 (Standard, Enterprise and Datacenter editions 64-bit), 64-bit Red Hat Enterprise Linux and 64-bit SUSE Enterprise Linux, (Server and Advanced Server), VMware	Microsoft Windows Server 2008 (Standard, Enterprise and Data Center Editions 64-bit), 64-bit Red Hat Enterprise Linux, 64-bit SUSE Enterprise Linux, (Server and Advanced Server), VMware	Red Hat Enterprise Linux, SUSE Linux Enterprise Server, Microsoft Windows Server 2008 R2, 2008 (Datacenter, HPC, Enterprise and Web), VMware Infrastructure 3.5 and VMware vSphere 4.1

For more information

World Wide Web

IBM System x ibm.com/systems/x

IBM eX5 enterprise systems

ibm.com/systems/info/x86servers/ex5/index.html

IBM BladeCenter ibm.com/systems/bladecenter

IBM 1- and 2-socket Rack and Tower Servers

ibm.com/systems/x86/rackandtower

IBM System Cluster 1350 ibm.com/systems/clusters/

IBM Systems Director ibm.com/systems/management/director

IBM System x iDataPlex

ibm.com/systems/x/hardware/idataplex/

IBM System Storage ibm.com/systems/storage/

IBM Express Portfolio™

Select configurations of System x servers are part of the IBM Express Advantage® Portfolio, designed to meet the needs of mid-sized businesses. Easy to manage, Express® models and configurations vary by country.

IBM Maintenance and Technical Support solutions can help you get the most out of your IT investment by reducing support costs, increasing availability and simplifying management with integrated support for your multiproduct, multivendor hardware and software environment. For more information on hardware maintenance, software support, solution support and managed support, visit: ibm.com/services/maintenance



© Copyright IBM Corporation 2011

November 2011

All Rights Reserved

IBM, the IBM logo, ibm.com, and System x are trademarks or registered trademarks of IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available at ibm.com/legal/copytrade.shtml

Intel, Celeron, Intel Xeon and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries or both.

Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States, other countries or both.

Other product, company and service names may be trademarks or service marks of others.

¹ IBM Power Engineering Research Study, February 2009



Please Recycle
