

# IBM System x family brochure

*IBM System x rack, BladeCenter and tower servers*



## Highlights

- IBM® System x® and BladeCenter® servers help 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 helps you lower energy usage and ownership costs. By consolidating



IBM x5 systems provide breakthrough innovation for smarter computing.

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.





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 that businesses can afford.



## M4 Business Servers

The family of M4 Business Solutions from System x includes rack and tower servers to meet your general business challenges. The System x flagship servers offer the outstanding balance of uptime, performance, flexibility, density and cost efficiency for your business-critical workloads—including more I/O, more memory capacity, and new value on demand features to allow you to add new features or keep your costs low.

New additions to the rack server portfolio include the x3750 M4, a 4-socket server featuring a streamlined design, optimized for price/performance, with advanced flexibility and expandability. The x3750 M4 provides maximum storage density, flexible PCIe and 10 GbE networking options in a 2U form factor.

New additions to the 2-socket rack server portfolio include the best-selling x3650 M4 and the dense, performance-optimized x3550 M4. System x has also announced new 2-socket value offerings with the extremely storage-dense x3630 M4 and the small form factor x3530 M4, a new type of server in the portfolio. These new servers join the entry 1-socket x3250 M4 in the suite of System x rack servers.

For smaller or distributed office environments, System x offers the entry-level x3100 M4 tower server, the all-in-one office powerhouse x3500 M4, and the new value 2-socket x3300 M4 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. These tower servers 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

The IBM System x iDataPlex® was designed for data centers that require high performance, yet are constrained on floor space, power and cooling infrastructure. The half-depth, dual-socket dx360 M4 server is equipped with the latest Intel® Xeon® E5-2600 series processors and is ideal for business clients that need a dense, flexible solution with a low total cost of ownership.

## Integrated solutions

Deploying solutions for technical computing, analytics and cloud environments can place a significant burden on IT. The IBM Intelligent Cluster leverages decades of IBM experience to reduce the complexity of deployment with pre-integrated, delivered and fully-supported solutions that match best-in-industry components with optimized solution design. With IBM Intelligent Cluster, clients can focus their efforts on maximizing business value, instead of consuming valuable resources to design, optimize, install and support the infrastructure required to meet business demands.

## 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 SmartCloud™


Entry 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.

System x model	x3100 M4	x3300 M4	x3500 M4
<b>Form factor</b>	Tower, 4U or 5U rack mountable	Tower, 4U rack mountable	Tower, 5U rack mountable
<b>Processor</b>	Intel® Xeon® E3-1200v2 Series (quad-core) up to 3.5 GHz and 1600 MHz or Core i3 (dual-core) up to 3.1 GHz and 1333 MHz	Up to two Intel Xeon Processor E5-2400 (8-core) up to 2.3 GHz and 1600 MHz	Up to two Intel Xeon Processor E5-2600 (8-core) up to 2.7 GHz and 1600 MHz
			
<b>Number of processors</b> (std/max)	1/1	1/2	1/2
<b>Cache</b> (max)	Up to 8 MB L3	Up to 20 MB L3 per processor	Up to 20 MB L3 per processor
<b>Memory</b> (std/max)	Up to 32 GB DDR-3 ECC memory, up to 1600 MHz; 1 GB, 2 GB, 4 GB and 8 GB UDIMMs	12 DIMM slots maximum, up to 192 GB* with DDR-3 1600 MHz RDIMMs	24 DIMM slots maximum, 768 GB with DDR-3 1600 MHz RDIMMs



System x model	x3100 M4	x3300 M4	x3500 M4
<b>Expansion slots</b>	One PCIe x16 mechanical/x8 electrical, one PCIe x8, one PCIe x4, one PCIe x1	Up to six PCIe expansion slots: five PCIe standard with additional one PCIe slot when second processor is populated; optional PCI-X available via interposer conversion kit	Up to eight PCIe expansion slots; six PCIe standard with additional two PCIe slots when second processor is populated; optional PCI-X available via interposer conversion kit
<b>Maximum internal storage</b>	Up to 12 TB with 4 simple-swap 3.5" SATA HDDs or 8 TB with eight hot-swap 2.5"	Up to 24 TB with eight 3.5" hot-swap or simple-swap SATA/SAS HDDs; 16 TB with sixteen 2.5" hot-swap SATA/SAS HDDs (upgrade options required)	Up to 24 TB with eight 3.5" hot-swap or simple-swap SATA/SAS HDDs; up to 32 TB with 2.5" hot-swap SAS/SATA HDDs (upgrade options required)
<b>Network interface</b>	Dual Gigabit Ethernet	Standard dual-port GbE with optional additional dual-port GbE	Standard quad-port GbE
<b>Power supply</b> (std/max)	1/2 430 W redundant 80 PLUS Silver or 300 W fixed 80 PLUS Bronze or 350 W fixed	1/2 redundant 550 W/750 W 80 PLUS Platinum or fixed 460 W 80 PLUS Bronze	1/2 redundant 550 W/750 W/900 W, 80 PLUS Platinum
<b>Light path diagnostics</b>	Limited	Limited	Yes
<b>RAID support</b>	Embedded RAID-0, -1, -10 (standard), HW RAID-0, -1, -10, -5, -6 (optional)	Integrated 3 Gbps software RAID-0, -1, -10 (standard), optional 6 Gbps hardware RAID-0, -1, -10, or -5, -50, -6, -60	Integrated 6 Gbps hardware RAID-0, -1, -10, optional RAID-5, -6, -10, -50, -60
<b>OS support</b> (Available for purchase)	Microsoft Windows Server, Red Hat Linux, SUSE Linux, VMware ESX	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 vSphere ESX and ESXi



System x model	x3250 M4	x3550 M4	x3530 M4	x3630 M4	x3650 M4	x3750 M4
<b>Form factor</b>	Rack/1U	Rack/1U	Rack/1U	Rack/2U	Rack/2U	Rack/2U
<b>Processor</b>	Intel® Xeon® E3-1200v2 Series (quad-core) up to 3.5 GHz and 1600 MHz or Core i3 (dual-core) up to 3.1 GHz and 1333 MHz	Up to two Intel Xeon Processor E5-2600 (8-core) up to 2.9 GHz and 1600 MHz	Up to two Intel Xeon Processor E5-2400 (8-core) up to 2.3 GHz and 1600 MHz	Up to two Intel Xeon Processor E5-2400 (8-core) up to 2.3 GHz and 1600 MHz	Up to two Intel Xeon Processor E5-2600 (8-core) up to 2.9 GHz and 1600 MHz	Up to four Intel Xeon Processor E5-4600 (8-core) up to 2.9 GHz and 1600 MHz
 <b>Number of processors (std/max)</b>	1/1	1/2	1/2	1/2	1/2	2/4
<b>Cache (max)</b>	Up to 8 MB L3	Up to 20 MB per processor socket	Up to 20 MB per processor socket	Up to 20 MB per processor socket	Up to 20 MB per processor socket	Up to 20 MB per processor socket
<b>Memory (std/max)</b>	Up to 32 GB DDR-3 ECC memory, up to 1600 MHz; 1 GB, 2 GB, 4 GB and 8 GB UDIMMs	24 DIMM slots maximum, 768 GB with DDR-3 1600 MHz RDIMMs	12 DIMM slots maximum, 384 GB with DDR-3 1600 MHz RDIMMs	12 DIMM slots maximum, 384 GB with DDR-3 1600 MHz RDIMMs	24 DIMM slots maximum, 768 GB with DDR-3 1600 MHz RDIMMs	48 DIMM slots maximum, 1.5 TB with 32 GB LRDIMMs




System x model	x3250 M4	x3550 M4	x3530 M4	x3630 M4	x3650 M4	x3750 M4
<b>Expansion slots</b>	One PCIe x8 Gen3, one PCIe x4 Gen2	Up to two PCIe expansion slots	Up to 2 PCIe expansion slots with slotless RAID	Up to 4 PCIe expansion slots with slotless RAID	Up to six PCIe expansion slots; three PCIe standard with additional three PCIe slots when second processor is populated	Up to eight PCIe expansion slots; five PCIe standard with an additional three PCIe slots with expansion riser
<b>Maximum internal storage</b>	Up to 6 TB simple-swap 3.5" SATA HDDs or hot-swap simple swap 2.5" SAS/SATA HDDs (model dependent, 2.5" simple swap available via CTO special bid only)	Up to 8 TB of 2.5" hot-swap SAS/SATA or 9 TB of 3.5" hot-swap or simple-swap SAS/SATA	Up to 12 TB	Up to 42 TB	Up to 16 TB of 2.5" hot-swap SAS/SATA or 18 TB of 3.5" hot-swap or simple-swap SAS/SATA	16 TB of 2.5" hot-swap SAS/SATA or up to 32 1.8" eXFlash SSDs
<b>Network interface</b>	Dual Gigabit Ethernet	Standard quad port GbE and optional dual 10 GbE embedded adapter	Dual Gigabit Ethernet and optional additional dual Gigabit Ethernet	Dual Gigabit Ethernet and optional additional dual Gigabit Ethernet	Standard quad-port GbE and optional dual 10 GbE embedded adapter	Standard 10 GbE controller which provides dual GbE ports and dual 10 GbE ports with optional fiber or copper card



System x model	x3250 M4	x3550 M4	x3530 M4	x3630 M4	x3650 M4	x3750 M4
<b>Power supply</b> (std/max)	1/2; 300 W fixed or hot-swap, redundant 460 W high efficiency	1/2 550 W, 750 W and 750 W dc redundant power,	1/2; 460 W or 675 W redundant power	1/2 550 W, 750 W 900 W redundant power	1/2 550 W, 750 W, 900 W and 750 W dc redundant power	900 W or 1400 W redundant power
<b>Light path diagnostics</b>	Limited	Yes	Yes	Yes	Yes	Yes
<b>RAID support</b>	Embedded RAID-0, -1, -10 (standard), hardware RAID-0, -1, -10, -5, -6 (optional)	Integrated 6 Gbps hardware RAID-0, -1, -10, optional RAID-5, -6, -10, -50, -60	Integrated 3 Gbps software RAID-0, -1, -10; optional hardware RAID-0, -1, -10 or RAID-5, -50 or -6, -60	Integrated 3 Gbps software RAID-0, -1, -10; optional hardware RAID-0, -1, -10 or RAID-5, -50 or -6, -60	Integrated 6 Gbps hardware RAID-0, -1, -10, optional RAID-5, -6, -10, -50, -60	Integrated 6 Gbps hardware RAID-0, -1, -10, optional RAID-5, -6, -10, -50, -60
<b>OS support</b> (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, VMware vSphere ESX and ESXi	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware vSphere	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware vSphere	Microsoft Windows Server 2008 R2, Red Hat Enterprise Linux, SUSE Linux Enterprise, VMware vSphere ESX and ESXi	Microsoft Windows Server 2008 R2, Red Hat Enterprise Linux, SUSE Linux Enterprise, VMware vSphere ESX and ESXi



System x model	x3690 X5	x3850 X5	iDataPlex dx360 M4
<b>Form factor</b>	Rack/2U per chassis	Rack/4U per chassis	Rack/1U server/2U chassis
<b>Processor</b>	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 E5-2600 series up to 2.7 GHz (eight-core) and 1600 MHz
			
<b>Number of processors (std/max)</b>	1/2	2/4 per node (optional 2-node support)	2/2
<b>Cache (max)</b>	Up to 30 MB	Up to 30 MB	Up to 20 MB
<b>Memory (std/max)</b>	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 256 GB DDR-3 1600 MHz RDIMM or 512 GB DDR-3 1333 MHz LRDIMM via 16 DIMM slots
<b>Expansion slots</b>	5 PCIe slots	7 PCIe slots	2 PCIe slots
<b>Maximum internal storage</b>	9.6 TB SAS per chassis (supports 16 × 73.4 GB, 146.8 GB, 300 GB, 500 GB and 600 GB hard disk drives, or 24 × 50 GB and 200 GB solid state drives)	4.8 TB per chassis (supports 8 × 73.4 GB, 146.8 GB, 300 GB, 500 GB and 600 GB SAS hard disk drives, 8 × 160 GB and 500 GB SATA hard disk drives, or 16 × 50 GB and 200 GB solid state drives)	Up to 4 TB per chassis



<b>System x model</b>	<b>x3690 X5</b>	<b>x3850 X5</b>	<b>iDataPlex dx360 M4</b>
<b>Network interface</b>	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 dual Gigabit Ethernet, plus 1 port for management
<b>Power supply (std/max)</b>	675 W 220 V 1/4	1975 W 220 V 2 in most models/2	1/2; 550 W, 750 W, 900 W redundant power
<b>Light path diagnostics</b>	Yes	Yes	Yes
<b>RAID support</b>	RAID-0, -1 standard in most models, optional RAID-5, -6	RAID-0, -1 standard in most models; optional RAID-5, -6	Hardware RAID -0, -1, -10, -5, -6, -50, -60 (optional)
<b>OS support</b> (Available for purchase)	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	Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise, VMware



## 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.

## For more information World Wide Web

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- IBM eX5 enterprise systems  
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## Express models

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



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IBM Systems and Technology Group  
Route 100  
Somers, NY 10589

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Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.

\* 32 GB LRDIMMS will be available in the first half of 2013 for a maximum capacity of 384 GB.



Please Recycle

