IBM @server xSeries and Linux solutions

IBM @server xSeries Linux solutions

A reliable foundation for Linux solutions, IBM @server™ xSeries® servers leverage IBM Enterprise X-Architecture™ state-of-the-art, industry-leading technologies to deliver enterprise-class power and scalability and availability at very attractive prices. Add to that rock-solid IBM support, and xSeries servers are a reliable, smart choice to run Linux.

xSeries servers are powered by Intel® Pentium® 4, Itanium® 2 and Xeon™ processors giving you high levels of power, performance, scalability and reliability for your servers and workstations.

ibm.com/linux/xseries **ibm.com**/linux

Introducing Grid computing

Grid computing uses open standards to enable distributed computing over the Internet, a private network or both. Grid computing enables devices to be virtually shared, managed and accessed across an enterprise, industry or workgroup. This resource virtualization provides the necessary access, data and processing power to rapidly solve complex business problems, conduct compute-intensive research and data analysis and engage in real-time business on demand.

For more information go to: **ibm.com**/grid

IBM @server Integrated Platform for e-business

A pre-assembled platform that has been architected, integrated, tested and optimized for e-business on demand solutions.

Get to market fast with complete dynamic e-business solutions from IBM and its Business Partners. The IBM @server Integrated Platform for e-business is available in a range of configurations optimized for popular e-business workloads. Each platform has all you need to get up and running quickly, including IBM @server systems running the Linux operating system, the industry-leading DB2® database (optional), the market-leading WebSphere® Application Server and a firewall (optional). Because it is based on Linux, the Integrated Platform can propel you into e-business at a price you can afford, while enabling you to run your e-business applications with the confidence of rich security features in a reliable, high-performance environment.

For more information go to:
ibm.com/servers/solutions/linux/integrated/

Integrated Platform Express

IBM Integrated Platform Express allows its Business Partner network of software vendors and resellers to deliver cost-effective Linux-based solutions incorporating IBM hardware and software to small and medium-sized businesses (SMBs). As the entry point for the IBM @server Integrated Platform for e-business on xSeries, these solutions are designed and priced specifically for the needs and budgets of small businesses, leveraging the IBM WebSphere Appplication Server Express and DB2 UDB Express (optional). Using this platform, developers can respond to market demand faster thanks to integration of hardware and software by an IBM Business Partner, saving time and money.

For more information visit:
ibm.com/linux/integratedplatformexpress

IBM and Intel

Price and performance to power your enterprise

Get the highest levels of power, performance, scalability and reliability for your xSeries servers and IntelliStation® workstations with an Intel Pentium 4, Xeon or Itanium 2 processor. These high-performance processors extend Intel Architecture to new levels of enterprise computing performance—and offer outstanding compatibility and reliability.

IBM is committed to Linux

- Runs on all IBM @server platforms
- Middleware development
- Open source contributions
- 5000 professionals dedicated to Linux
- Linux white papers and Redbooks
- Industry-focused Linux Center of Competencies
- Linux OS on 1000+ internal servers with mission-critical applications
- Linux-enabled Business Partners

Integrated Software Vendors (ISVs)

IBM and xSeries servers have partnered with a number of Independent Software Vendors (ISVs) to bring you a wide range of applications for Linux, across a broad spectrum of industries.

For more information go to: **ibm.com**/linux/isv

High availability in a strong, affordable foundation

xSeries servers include technologies such as Chipkill™ memory, Light Path Diagnostics, Predictive Failure Analysis®, Software Rejuvenation, Memory ProteXion™, memory mirroring and Capacity Planning. These technologies help deliver outstanding availability. In addition, hardware and software subsystems in xSeries servers are tested for compatibility and reliability to minimize weak links.

IBM @server BladeCenter solutions

Consolidation. Integration. Flexibility.

IBM @server BladeCenter™ provides IT professionals a new way to achieve the critical goal of doing more with less. Smart management tools, such as IBM Director, help reduce the time needed to install, deploy and redeploy vital IT infrastructure. Easy modular scalability lets you "pay as you grow"—adding the capacity you need, when you need it. Efficient architecture requires less space, power, cabling and cooling. BladeCenter protects existing investments, allows for future expansion and can be added to racks of servers already installed.

For more information go to: **ibm.com**/eserver/bladecenter

IBM TotalStorage FAStT900 Storage Server

Scalable, high-performance storage for on demand computing environments

The IBM TotalStorage™ FAStT900 Storage Server delivers breakthrough disk performance and outstanding reliability for demanding applications in compute-intensive environments. The FAStT900 is designed to offer investment protection with advanced functions and flexible features. Designed for today's on demand business needs, the FAStT900 easily scales from 36GB to more than 32TB to support growing storage requirements. The FAStT900 offers advanced replication services to support business continuance and disaster recovery. It is an effective storage server for any enterprise seeking performance without borders.

For more information go to: **ibm.com**/storage

IBM Software for Linux

Flexible, reliable, cost-effective—World-class IBM middleware on Linux.

IBM software on Linux provides an open and comprehensive platform enabling the easy integration, deployment, development and management of applications across heterogeneous server environments resulting in lower costs and higher performance.

- ***DB2*** *for Linux gives you a robust, easy-to-manage database that offers high performance, complementing the stability and reliability of Linux at a lower cost than any other e-business ready Linux database on the market.*
- ***Lotus®*** *offers Web-enabled solutions that foster smart collaboration among your employees, customers, partners and suppliers. With Domino for Linux, you can create a connected community with easy access to ideas—a powerful advantage in any competitive arena.*
- ***Rational*** *software on Linux helps organizations create business value by improving their software development capabilities. The Rational software development platform integrates software engineering best practices, tools and services for organizations to thrive in an on demand world.*
- ***Tivoli®*** *software on Linux provides your company with an array of cross-platform management tools that cut costs, simplify management of your technology infrastructure, speed return on investment and improve IT responsiveness.*
- ***WebSphere*** *products on Linux, based on open, industry standards, makes it easy to collaborate and strengthen relationships with customers, suppliers and trading partners whether you're building your business on the Web or bringing your business to it.*

For more information go to: ***ibm.com****/software/linux*

IBM also provides other key software:

- ***IBM Director*** *consists of an impressive suite of systems management tools that deliver superior hardware manageability, enabling customers to realize maximum system availability and lower IT costs.*

For more information go to: **ibm.com**/eserver/xseries

See what customers have to say

Watch and listen to customers from a range of industries describe how xSeries and Linux solutions have enhanced their operations.
Customer case studies: **ibm.com**/eserver/success

Choose to meet your e-business needs

IBM is working closely with the top Linux distribution companies—Red Hat, Inc., SuSE Linux AG and Turbolinux—to optimize and certify their distributions for IBM configurations.[1] In addition, IBM fully supports United Linux. The range of Linux offerings available on xSeries servers gives you the flexibility to choose the optimum Linux implementation for your unique requirements. What's more, IBM Linux distribution partners complement IBM's extensive support and services with their own worldwide offerings.

[1] To locate ServerProven®/Certification information for xSeries servers and Linux, go to: **ibm.com**/pc/us/compat/index.html

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IBM xSeries servers and Linux

Tower servers offer versatile designs that convert from tower to rack-mount. Value models take small business serving to new levels of productivity at very affordable prices; larger enterprise models combine maximum internal scalability and high-availability tools for intense workloads.

Rack-optimized servers help solve your data center space dilemma with outstanding performance and manageability in a slim chassis at a low infrastructure cost.

High-performance scalable servers scale up with "pay as you grow" modular SMP server technology for high-end transaction performance or server consolidation.

Blade servers help solve IT problems involving space constraints, manageability, scalability, performance and cost—at twice the density of most of today's 1U servers.

For more information or to purchase now go to: **ibm.com**/eserver/xseries

IBM @server Cluster 1350
Expertly designed, thoroughly pretested, factory-integrated Linux cluster solutions

- Using xSeries rack-optimized or BladeCenter nodes and a variety of popular third-party components
- Thoroughly tested configurations with a huge range of scalability
- Clearly defined, repeatable manufacturing process (including testing in our factory prior to ship)
- Spare parts well stocked, including third-party components
- Onsite cluster installation and setup included
- Common service/support offerings for the cluster as a whole widely available

Cluster 1350 provides a factory-integrated Linux cluster solution based on selected rack-optimized and blade servers shown on this page.

For more information on the Cluster 1350 solution visit:
ibm.com/servers/eserver/clusters/















xSeries	x205	x225	x235	x255	x305	x335	x345	x360	x382	x445	x450	IBM @server BladeCenter	IntelliStation E Pro 6226-65U	IntelliStation M Pro 6219-48U	IntelliStation Z Pro 6221-48U
Form Factor	Tower, Rack/4U	Tower, Rack/4U	Tower, Rack/5U	Tower, Rack/7U	Rack/1U	Rack/1U	Rack/2U	Rack/3U	Rack/2U per chassis	Rack/4U per chassis	Rack/4U	Rack/7U chassis (up to 14 blade servers per chassis)	Desktop	Mini Tower	Mini Tower
Intel Processor (max)	2.8GHz Pentium 4 533MHz front-side bus speed	2.8GHz Xeon 533MHz front-side bus speed	3.06GHz Xeon 533MHz front-side bus speed	2.8GHz Xeon Processor MP	2.8GHz Pentium 4 533MHz front-side bus speed	3.06GHz Xeon 533MHz front-side bus speed	3.06GHz Xeon 533MHz front-side bus speed	2.8GHz Xeon Processor MP	Itanium 2 at up to 1.5GHz	Xeon Processor MP up to 2.8GHz or Xeon Processor 3.0GHz	Itanium 2 at up to 1.5GHz	2.8GHz Xeon Processor	2.8GHz Pentium 4	3.06GHz Pentium 4	3.06GHz Xeon
Number of Processors (std/max)	1/1	1/2	1/2	1/4	1/1	1/2	1/2	1/4 or 2/4	2/2	2/32 with Xeon Processor MP 2/4 with Xeon Processor	1/4	1/2 per server (14/28 per chassis)	1/1	1/1	1/2
Cache (max)	512KB L2	512KB L2	512KB L2	2MB L3	512KB L2	512KB L2	512KB L2	1MB or 2MB	Up to 6MB	2MB L3/64MB XceL4	64MB L3/64MB L4	512KB L2	512KB L2	512KB L2	512KB L2
Memory (max)	2GB PC2100	8GB PC2100 DDR Chipkill	12GB PC2100 DDR Chipkill	24GB PC1600 DDR Chipkill	4GB PC2100	8GB PC2100 DDR Chipkill	8GB PC2100 DDR Chipkill	16GB PC1600 DDR Chipkill	16GB PC2100 DDR Chipkill	64GB Chipkill DDR SDRAM	40GB PC2100 DDR Chipkill	8GB PC2100 DDR Chipkill per server	2048MB PC2100 DDR SDRAM	4096MB PC2100 DDR SDRAM	8192MB PC2100 DDR SDRAM
Expansion Slots	5 PCI	5 total/4 PCI-X	6 total/2 Active PCI-X	6 Active PCI-X	2 PCI-X (133MHz)	2 PCI-X (64-bit 100MHz)	4/0 PCI-X, 1/0 PCI	6/6 Active PCI-X	3/3 PCI-X	6/6 Active PCI-X, with RXE-100 Remote Expansion Enclosure	6 64-bit PCI-X	No PCI slots, all features integrated	1 AGP 3 PCI	1 AGP 5 PCI	1 AGP 4 PCI 64-bit/100MHz 1 PCI 32-bit/33MHz
Disk Bays (total/hot-swap)	4/3 (IDE or SCSI)	6/6	6/6 with optional 3-pack hot-swap HDD kit	12/12 with optional 6-pack hot-swap HDD kit	2/0	2/2	6/6	3/3	2/2	2/2 Supporting Ultra320 SCSI	2/2	4/2 server (14 IDE or 7 SCSI servers per chassis) hot-swap via optional SCSI Storage Expansion Unit	4/NA	7/NA	6/NA
CD-ROM/Diskette Drive	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes/48X CD-ROM	Yes/48X CD-RW	Yes/48X DVD combo
Maximum Internal Storage	360GB[2] IDE 587.2GB SCSI	880.8GB hot-swap 587.2GB non-hot-swap	1.32TB[2]	1.76TB	293.6GB SCSI 240GB IDE	293.6GB SCSI 240GB IDE	880.8GB	220.2GB	293.6GB	293.6GB	146.8GB	80GB IDE and 146.8GB SCSI per server(14 IDE or 7 SCSI servers per chassis)	73.4GB Ultra160 SCSI	220GB Ultra320 SCSI	220GB Ultra320 SCSI
Network	Integrated 10/100/1000 Ethernet	Integrated 10/100/1000 Ethernet	Integrated 10/100/1000 Ethernet	Integrated 10/100/1000 Ethernet	Dual Integrated 10/100/1000 Ethernet	Dual Integrated 10/100/1000 Ethernet	Dual Integrated 10/100/1000 Ethernet	Integrated 10/100 Ethernet	Dual Integrated 10/100/1000 Ethernet	Dual Integrated 10/100/1000 Ethernet	Dual Integrated 10/100/1000 Ethernet	Integrated dual GB Ethernet per server (GB Ethernet and Fibre Channel switch modules options for chassis)	Broadcom NetXtreme 10/100/1000 Integrated-Ethernet	Broadcom NetXtreme 10/100/1000 Integrated-Ethernet	Broadcom NetXtreme 10/100/1000 Integrated-Ethernet
System Management Processor	Supports optional Remote Supervisor Adapter	Supports optional Remote Supervisor Adapter	Supports optional Remote Supervisor Adapter	Supports optional Remote Supervisor Adapter	Supports optional Remote Supervisor Adapter	Integrated (supports Remote Supervisor Adapter)	Supports optional Remote Supervisor Adapter	Remote Supervisor Adapter in dedicated slot	Integrated Intel IPMI 1.5	Remote Supervisor Adapted standard	Remote Supervisor Adapter	Integrated on server (Integrated Management Module on chassis)	N/A	N/A	N/A
Power Supply (std/max)	340W 1/1	425W or (2) 514W hot-swap	1/2	370W 2/4 hot-swap	220W 1/1	332W 1/1	1/2	370W 1 or 2/3 hot-swap	350W 2/3	1050W 2/2 hot-swap	2 1050W/2	Integrated 1200W (2/4 per chassis)	200W	340W	425W
Hot-swap Components	HDDs (select models)	Power supply, HDDs (select models)	Power supply, fans, HDDs, PCI-X slots	Power supply, fans, HDDs, PCI-X adapters	N/A	HDDs	Power supply, fans, HDDs	Power supply, fans, HDDs, PCI-X adapters	Power supply, HDDs	Power supply, fans, HDDs, PCI-X adapters, memory DIMMs	Power supply, fans, Active PCI-X adapters, HDDs	Blade server, Management Module, Power Supply Modules, GB Ethernet Switch Module, Fibre Channel Switch Module, Blower Modules	N/A	N/A	N/A
Light Path Diagnostics	Limited	Limited	Yes	Yes	N/A	Yes	Yes	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes
RAID Support	Optional	Integrated RAID-1	Integrated RAID-1 Optional RAID-5	Optional	Optional	Integrated RAID-1	Integrated RAID-1 Optional RAID-5	Optional	Integrated RAID-1	Integrated RAID-1	Integrated RAID-1, optional ServeRAID controllers for RAID-5	IDE-Software only, SCSI-yes	Adapter only	Adapter only	Integrated RAID-1
xSeries Linux Compatibilities[1]	Red Hat, SuSE	Red Hat, SuSE	Red Hat, SuSE, Turbolinux	Red Hat, SuSE	Red Hat, SuSE	Red Hat, SuSE, Turbolinux	Red Hat, SuSE, Turbolinux	Red Hat, SuSE	Red Hat, SuSE	Red Hat, SuSE, Turbolinux	Red Hat, SuSE	Red Hat, SuSE	Red Hat	Red Hat	Red Hat

[2] GB= 1,000,000,000 bytes when referring to storage capacity. Accessible capacity is less.
TB= 1,000,000,000,000 bytes when referring to storage capacity. Accessible capacity is less.