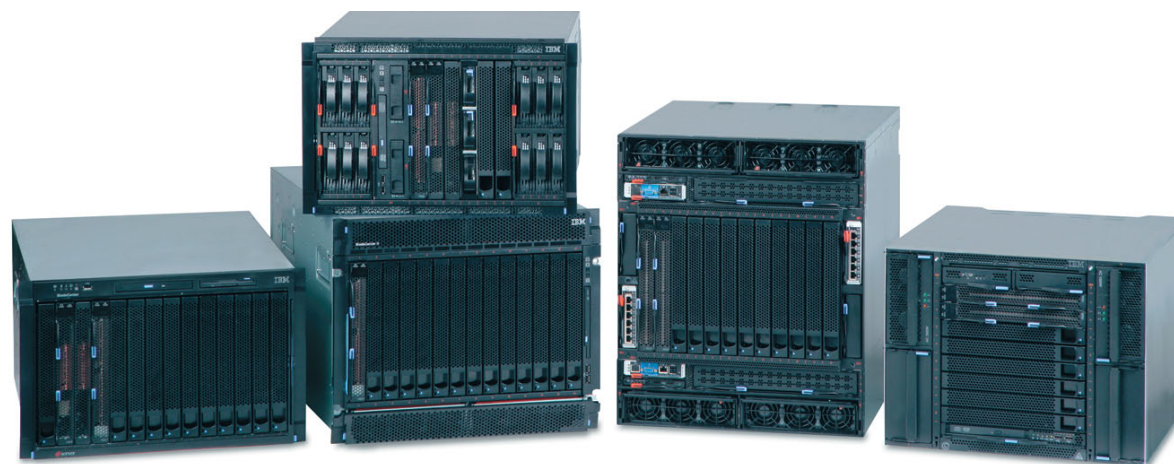


Reduce Costs. Improve Service. Manage Risk.



IBM BladeCenter: Build smarter IT



Highlights

- ***Realize innovation with a flexible, scalable architecture that lets you choose the right solution for your dynamic business***
- ***Manage complexity and growth with easy deployment using IBM BladeCenter® Open Fabric Manager and IBM Systems Director***
- ***Go green and save with energy-efficient features and fewer extras to buy***
- ***Stay up and running with an intelligent system design that includes multiple layers of redundancy and reliability combined with advanced availability tools***
- ***Consolidate on IBM BladeCenter servers and virtualize applications to better utilize resources and amplify the already-significant advantages of BladeCenter efficiencies***
- ***Start smart with IBM BladeCenter S—the integrated system for small offices and distributed environments***

Overview

Your priorities are clear: meet the challenges of today's dynamic world, contain costs, deal with IT skill shortages and take full advantage of new technologies. In short, manage your IT organization and infrastructure for business success. With its industry-leading flexibility, BladeCenter is a smarter choice for your dynamic business.

By integrating servers, storage, networking and management, BladeCenter is helping companies in every industry sweep complexity aside. The blades contain all the necessities to run an application—processors, memory, I/O and storage. The chassis contains shared redundant power, shared hot-swap cooling, a media tray, integrated Ethernet, storage, switching and consolidated powerful management.

Its innovative, open design offers a true alternative to today's sprawling racks and overheated server rooms. So toss out your cables. You have nothing to lose but complexity.

Realize innovation

Your business needs continually change. IBM understands that there's no one-size-fits-all solution. To meet your broad and diverse needs, you want your IT infrastructure to be flexible and modular. BladeCenter offers

a comprehensive portfolio of chassis, blade servers, switches and fabrics—all managed from a common infrastructure.

One of many BladeCenter innovations is the BladeCenter S chassis, which can be deployed in minutes and uses standard office power. Built specifically for office and distributed-enterprise environments, BladeCenter S is an integrated business-in-a-box foundation with configurable shared storage. The i Edition Express for BladeCenter S helps the small or mid-sized company that seeks simplicity and value to avoid increased spending and staffing requirements while becoming more responsive to the demands of a growing business.

BladeCenter Start Now Advisor removes technical hurdles by providing all you need to get your BladeCenter S up and running. Simply insert a DVD, and Start Now Advisor will do the work of sorting out what your specific solution has and needs so you can spend time running your business.

Like IBM System x® servers, many BladeCenter servers are built on IBM X-Architecture® for enterprise-class reliability. X-Architecture is the IBM blueprint for bringing innovation to x86 systems—innovation that

helps set you apart from the competition. The result is open, industry-standard servers on which you feel confident running your business-critical workloads.

Manage complexity, growth and risk

You want a flexible business foundation that is both open and innovative. BladeCenter delivers. Choose from many offerings defined by Blade.org and created by other members of the most extensive organization for blade solutions.

Match your data center needs with the appropriate interconnect, selecting from multiple I/O fabrics.

IBM BladeCenter Open Fabric is an integrated server I/O portfolio that provides a comprehensive set of interconnects and smart management tools. It is supported by multiple vendors, so you can match the solution to your standards.

BladeCenter Open Fabric Manager makes it even easier to deploy your blades with preconfigured connections and a simple graphic user interface. BladeCenter Open Fabric Manager automates blade deployment by intelligently managing the interaction between the blades and the storage and data networks. You define the connections just once and BladeCenter Open Fabric Manager takes care of them after that—so you

can be ready in minutes, not days. BladeCenter Open Fabric Manager also helps reduce costly downtime with automatic failover capability. And of course, there's no need to redo your network standards. BladeCenter Open Fabric Manager works across the BladeCenter family of chassis and switches.

BladeCenter is also designed with extensive redundancy to help reduce failures. Unlike some competitive products, BladeCenter servers provide dual I/O and dual power connections to the chassis for enterprise-class reliability to keep your business up and running.

Virtualizing on BladeCenter allows you to create a highly flexible infrastructure that can quickly and easily adapt to business changes. BladeCenter, a comprehensive virtualization solution, is the only blade server solution in the industry that allows you to consolidate and simplify your Linux®, UNIX®, IBM i operating system and Windows® workloads on a single platform. When business transformation is your goal, BladeCenter and virtualization is the answer. Together, virtualization and BladeCenter help reduce costs, increase business agility and boost IT resiliency.

Take advantage of the industry's only click "n" scale blade with the IBM BladeCenter LS42. Simply purchase a lower-cost two-socket, singlewide blade and

add a multi-processor expansion unit to scale to a four-socket double-wide blade, providing lower price of entry and investment protection.

Reduce energy costs

You want to control your power and cooling environment and help minimize environmental impacts. BladeCenter offers energy-efficient designs and powerful tools to help monitor, control and allocate power consumption. IBM Power Configuration lets you select systems and IT infrastructure that fit your business goals before you commit to buying the first server. IBM Systems Director Active Energy Manager™ helps optimize energy efficiency so you can be more responsive to energy needs and costs.

IBM Systems Director

IBM Systems Director provides easy-to-use, powerful tools for managing both physical and virtual resources for System x and BladeCenter and other IBM and non-IBM systems. It provides simplified deployment, installation and update processes, and can be accessed from anywhere with a consistent, Web-based user interface. New tasks can be quickly learned with intuitive wizards, tutorials and integrated help. The broad portfolio of systems managed by a single tool can reduce staff training and operational expenses.

BladeCenter chassis at a glance

	BladeCenter S	BladeCenter E	BladeCenter H	BladeCenter T	BladeCenter HT
Benefits	All-in-one chassis with integrated SAN, ideal for small offices and distributed environments	Energy-efficient, high-density chassis ideal for space and power- constrained data centers	High-performance and high-density chassis ideal for even the most demanding applications	Ruggedized NEBS-3/ETSI-compliant chassis ideal for harsh environments and demanding conditions	Ruggedized NEBS-3/ETSI-compliant chassis ideal for next-generation, high-performance applications.
Best in class environments	Standard office	Space- and power-constrained	High-performance density	Telco and ruggedized	Telco and ruggedized
Rack form factor	7U	7U	9U	8U	12U
Blade bays	6	14	14	8	12
Standard media	DVD-RW/CD-RW	DVD-ROM, floppy	DVD/CD-RW	DVD-ROM, floppy	USB external
Number of switch fabrics	Up to 4	Up to 4	Up to: 4 standard, 4 high-speed, 4 bridge	Up to 4	Up to: 4 standard, 4 high-speed, 4 bridge
Power supply modules	Up to four 950W/1450W AC	Up to four 2000W Or 2320W	Up to four 2900W AC	1300W AC or 1300W DC	3160W AC or 3160W DC
Systems management controller	Advanced Management Module (aMM)	Up to two aMMs	Up to two aMMs	Up to two BCT aMMs	Up to two aMMs
NEBS-/ETSI-characteristics¹	No	No	No	Yes	Yes
4X InfiniBand® or 10 Gb Ethernet capability (internal)	No	No	Yes	No	Yes
Common external ports	Front: 2x USB Rear: aMM; 4x USB, Video, Ethernet	Front: 1x USB Rear: aMM; 4x USB, Video, Ethernet	Front: 2x USB Rear: aMM; 4x USB, Video, Ethernet	Front: 2x USB Rear: PS/2 Mouse, PS/2 Keyboard, video, Ethernet, alarm panel	Front: 2x USB Rear: aMM; 4x USB, Video, Ethernet
Systems management software	IBM Systems Director with systems management and trial deployment tools, Advanced Management Module, Management Module (BladeCenter T only), Storage Configuration Manager (BladeCenter S only)				
IBM Predictive Failure Analysis	Hard disk drives, processors, blowers, memory				
Light path diagnostics	Blade server, processor, memory, power supplies, blowers, switch module, management module, hard disk drives and expansion card				
Limited warranty²	3-year customer replaceable unit and onsite limited warranty				
External storage	Support for IBM System Storage solutions				

IBM System Storage DS3200

Take an overburdened internal storage infrastructure to the next level by using the flexible and affordable SAS-based DS3200 storage system. The DS3200 combines next-generation SAS technology with time-proven designs for external storage and intuitive-management interface to create a fully featured, shared-storage system. This 2U rack-mount enclosure with 12 easily accessible disks supports both SAS and SATA drives and is expandable up to 48 drives by attaching up to three EXP3000s. Supported by all BladeCenter chassis, the DS3200 can increase the capacity, management efficiency and availability of your SAS-based storage.

BladeCenter servers

The family of IBM blade servers is designed to support a wide variety of applications that clients demand in today's business and government settings. Together, these blade servers are ideal for a range of applications including collaboration, Citrix, Linux® clusters, compute-centric applications, commerce transactions, databases, ERP/CRM applications and next-generation network applications.

BladeCenter offers you a choice of server blades that are compatible with the various BladeCenter chassis. The IBM BladeCenter HS21 and HS21 XM have up to two high-performance dual-core or quad-core Intel®

Xeon® processors. Other popular server choices include scalable IBM BladeCenter LS22 and LS42 server blade solutions that allow you to expand from 2-socket to 4-socket and back as their requirements change—providing on demand flexibility. IBM brings the extraordinary value of BladeCenter to the UNIX, i and Linux market with its family of POWER6™ processor-based blade servers. It is designed for virtualization and performance and featuring IBM's latest POWER6 processor technology—the world's fastest micro-processor. Couple that superior performance with Power Systems Software™ like IBM PowerVM™ built-in, and you now have the opportunity to consolidate your UNIX, i³ and Linux applications to Power™ blades like never before.

The new HS22 blade is a versatile, easy-to-use two-socket blade optimized for performance, power and cooling. It offers outstanding performance in an energy-efficient design for a wide range of enterprise applications. It delivers up to 96 GB of memory and features two hot-swap storage bays that support both SAS and SATA HDDs and solid-state drives. The HS22 also offers an optional embedded hypervisor that enables instant virtualization.

BladeCenter offers a broad choice of operating systems that allows you to deploy a wide choice of applications. On the HS22, HS21, HS21 XM, LS22 and LS42 blade servers, choose from Microsoft® Windows

Server®, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, Open Enterprise Server and Solaris 10. With the JS12 and JS22 blades, choose from AIX®, IBM i operating system⁴, Red Hat Enterprise Server or SUSE Linux Enterprise Server.

The feature-rich HS12 and JS12 Express are the first uni-socket blade servers to bring significant benefits to clients who want a durable server solution for consolidating multiple applications and servers into a single BladeCenter chassis transitioning from traditional rack-mount or desk-side servers to highly efficient blades. The HS12 is a versatile, affordable blade server for Web-serving and file and print applications that does not require a second processor. The JS12 Express blade server is a powerful new alternative to a traditional AIX, IBM i or Linux-based rack-mount and desk-side server. Combined with a BladeCenter S chassis, both the HS12 and the JS12 provide exceptional value and expandability in an attractively packaged and highly efficient design.

And the IBM BladeCenter PN41 performs Deep Packet Inspection and analysis of network traffic—a powerful approach that delivers network traffic insight and helps organizations stay competitive in the marketplace. The IBM BladeCenter PN41 delivers outstanding security to help protect a network infrastructure.

At a glance	IBM BladeCenter HS22	IBM BladeCenter HS21	IBM BladeCenter HS21 extended memory (XM)	IBM BladeCenter HS12
Processor	Choice of two Intel Xeon 5500 series processors, up to 2.93 GHz	Dual- and Quad-Core Intel Xeon	Dual- and Quad-Core Intel Xeon	Single-Core Intel Celeron, Dual-Core Intel Core™2 Duo, and Dual- and Quad-Core Intel Xeon
Number of processors (std/max)	1/2	1/2		1/1
Cache (max)		6 MB L2 shared (dual-core) or 2x6 MB (12 MB) L2 (quad-core)		Up to 6 MB L2 shared (dual-core) or 2x6 MB L2 (quad-core)
Front-side bus	Up to 1333 MHz			
Memory ⁵	Twelve DDR-3 VLP DIMM slots (up to 96 GB of total memory capacity and memory speeds up to 1333 MHz)	Up to 32 GB Fully Buffered DIMMs (internal) and up to 64 GB with Memory and I/O Expansion Unit	Up to 64 GB with Fully Buffered DIMMs	24 GB
Internal hard disk drives		Up to two SAS or solid state HDDs installed on each blade (support for up to three hot-swap SAS drives with optional storage and I/O expansion blade)	One SAS HDD installed on each blade or one or two optional internal solid state drives or one optional IBM 8 GB Modular Flash Drive (support for up to three hot-swap SAS drives with optional storage and I/O expansion blade)	Choice of hot-swap solid state, hot-swap SAS or non-hot-swap SATA HDDs, (support for up to three hot-swap SAS drives with optional storage and I/O expansion blade)
Maximum internal storage ^{5,6}	Up to 1.2 TB total internal storage	1.5 TB with optional storage and I/O expansion blade	1.2 TB with optional storage and I/O expansion blade	600 GB
RAID support	RAID-0, -1 and -1E (optional RAID-5 with battery-backed cache)	Integrated RAID-0 or -1 standard on blade server, integrated RAID-1E or RAID-5 optional with Storage and I/O blade	Integrated RAID-0 or -1 standard on blade server, integrated RAID-1E or RAID-5 optional on drives in SIO Blade	Integrated RAID-0 or -1 standard on hot-swap models; optional RAID-0, -1, -5, -6, -10 and 256 MB cache with 24-hour battery backup using ServeRAID-MR10ie card; integrated RAID-1E or RAID-5 optional with SIO blade

At a glance	IBM BladeCenter HS22	IBM BladeCenter HS21	IBM BladeCenter HS21 extended memory (XM)	IBM BladeCenter HS12
Network	Broadcom 5709S onboard NIC with dual Gigabit Ethernet ports with TOE	Dual Gigabit Ethernet (TOE-enabled), up to 12 ports optional with storage and I/O expansion blade and Multi Switch Interconnect Module	Dual Gigabit Ethernet (TOE-enabled), up to 12 ports optional with storage and I/O expansion blade and Multi Switch Interconnect Module	Dual Gigabit Ethernet, up to 8 ports optional, up to 12 ports optional with storage and I/O expansion blade and Multi Switch Interconnect Module
I/O upgrade	1 PCI-Express expansion card connection and 1 PCI-Express high-speed connection	1 PCI-X expansion card connection (traditional) and 1 PCI-Express (high speed)		1 PCI-Express expansion card connection and 1 PCI-Express high-speed connection
Systems management hardware	Integrated system management processor (BMC for HS21, HS21 XM and HS12; IMM for HS22); UpdateXpress, Remote Deployment Manager, IBM Systems Director, IBM Systems Director Active Energy Manager, ServerGuide 7.x, Scripting Toolkit 1.x			
OS support (available for purchase)⁷	Microsoft Windows, Linux, Sun Solaris and VMware			Microsoft Windows ⁷ , Linux ⁷ , VMware, IBM OS 4690
Standards	Not applicable	NEBS/ETSI characteristics	NEBS/ETSI characteristics	Not applicable
Limited warranty²	3-year customer replaceable unit and onsite limited warranty			1-year or 3-year customer replaceable unit and onsite limited warranty

At a glance	IBM BladeCenter LS22	IBM BladeCenter LS42
Processor⁸	Quad-core AMD Opteron	Quad-core AMD Opteron
Number of processors (std/max)	1/2	1 or 2/4
Cache (max)	2 MB L2 shared (dual- and quad-core) and 2 MB or 6 MB (L3) shared (quad-core)	
Memory⁵	Up to 64 GB DDR II VLP (800 MHz)	Up to 128 GB DDR II VLP (800 MHz)
Internal hard disk drives	Up to two SAS or solid state HDDs installed on each blade	
Maximum internal storage^{5,6}	1.5 TB with optional storage and I/O expansion blade	
Network	Two integrated Gigabit Ethernet controllers	Two or four integrated Gigabit Ethernet controllers
I/O upgrade	1 PCI-X expansion connector and 1 PCI-Express expansion connector	2 PCI-X expansion connectors and 1 PCI-Express expansion connector
Systems management hardware	Integrated systems management processor	
Operating system support (available for purchase)⁷	Microsoft Windows, Linux, VMware and Solaris 10	
Limited warranty²	3-year customer replaceable unit and onsite limited warranty	

IBM BladeCenter PN41 at a glance

Processor	Contains an Intel IXP2805 network processor for use in handling packets
Memory	Contains multiple types of memory including TCAM, QDR and RDRAM. Note: Memory is dedicated to packet processing and is not expandable
Drives	Contains no disk or flash drives
REGEX engine	Contains a Regular Expression accelerator to speed up searches
Front 10 Gb connector	XFP connection to 10 Gb Ethernet (optical)
Capture port	Front SFP connector used for data capture and debugging
Electrical input	12 V dc
Integrated functions	Quad 1 Gb Ethernet controllers; quad 10 Gb Ethernet controllers used in promiscuous mode; local service processor: baseboard management controller (BMC) with Intelligent Platform Management Interface (IPMI) firmware; RS-485 interface for communication with the management module; Automatic server restart
Environment	<p>Air temperature:</p> <ul style="list-style-type: none">• Security blade on: 10° to 35° C (50° to 95° F); altitude: 0 to 914 m (0 to 3,000 ft.)• Security blade on: 10° to 32° C (50° to 90° F); altitude: 914 to 2,134 m (3,000 to 7,000 ft.)• Security blade off: -40° to 60° C (-40° to 140° F) <p>Humidity:</p> <ul style="list-style-type: none">• Security blade on: 8% to 80%; security blade off: 5% to 80%
Size	Height; 24.5 cm (9.7 inches), Depth; 44.6 cm (17.6 inches), Width; 2.9 cm (1.14 inches)

At a glance	IBM BladeCenter JS12	IBM BladeCenter JS22
Processor⁸	64-bit IBM POWER6 3.8 GHz with integrated AltiVec SIMD accelerator	64-bit IBM POWER6 up to 4.0 GHz with integrated AltiVec SIMD accelerator
Number of processors	Two	Four
Level 2 cache	4 MB per core	
Memory bus	1.1 GHz	
Memory⁵	Up to 64 GB maximum per blade, eight DIMM slots, ECC Chipkill™ DDR II SDRAM running at 667 MHz	Up to 32 GB maximum per blade, four DIMM slots, ECC Chipkill DDR II SDRAM running at 667 MHz
Internal hard disk drives	Two 73 GB or 146 GB 2.5" Serial Attached SCSI (SAS)	One 73 GB or 146 GB 2.5" Serial Attached SCSI (SAS)
Maximum internal storage^{5,6}	Up to 600 GB	Up to 300 GB
Network	Integrated Virtual Ethernet adapter (IVE) Dual Gigabit and support for optional dual Gigabit Ethernet daughter card	Integrated P5IOC2 controller with two host Ethernet adapters
I/O upgrade	Integrated PCI-Express connector for high-speed daughter cards, integrated connector for PCI-X daughter cards	Integrated PCI-Express connector for high-speed daughter cards
Systems management hardware	Integrated system management processor	
OS support (available for purchase)⁷	AIX V5.3 or later, IBM i V61 or later, SUSE Linux Enterprise Server 10 for POWER®; Red Hat Enterprise Linux for POWER Version	AIX, Red Hat Enterprise Linux, SUSE Linux Enterprise Server
Virtualization (built-in feature)	PowerVM Standard Edition	AIX
Standards	NEBS-3/ETSI characteristics	
Limited warranty²	3-year onsite, next-business-day	

BladeCenter options

IBM offers a range of options to help create customized solutions to meet your specific business needs. Here below is a partial list of key I/O options.

Blade server options⁹

BladeCenter options	Part number
Ethernet Switches	
Cisco Catalyst Switch Module 3012	43W4395
Cisco Catalyst Switch Module 3110X	41Y8522
Cisco Catalyst Switch Module 3110G	41Y8523
Intelligent Copper Pass-Thru Module	44W4483
Server Connectivity Module	39Y9324
BNT 6-port 10 Gb Ethernet Switch Module	39Y9267
BNT 1/10 Gb Uplink Ethernet Switch Module	44W4404
BNT Layer 2/3 Copper GbE Switch Module	32R1860
BNT Layer 2/3 Fibre GbE Switch Module	32R1861
BNT Layer 2-7 GbE Switch Module	32R1859
Fibre Channel (FC) Switches	
Cisco 4 Gb 10 port FC Switch Module	39Y9284
Cisco 4 Gb 20 port FC Switch Module	39Y9280
Brocade 4 Gb 20 port FC Switch Module	32R1812

BladeCenter options	Part number
Brocade 4 Gb 20 port FC Switch Module	32R1813
QLogic 4 Gb 10 port FC Switch Module	43W6724
QLogic 4 Gb 20 port FC Switch Module	43W6725
QLogic 4 Gb Intelligent FC Pass-Thru Module	43W6723
QLogic 8 Gb Intelligent FC Pass-Thru Module	44X1907
QLogic 8 Gb 20 port FC Switch Module	44X1905
SAS Switches	
BladeCenter S SAS RAID Controller Module	43W3584
BladeCenter SAS Connectivity Module	39Y9195
InfiniBand Switches	
4x InfiniBand Pass-Thru Module	43W4419
Expansion Cards, SIO Options	
ServeRAID-MR10ie (CIOv) Controller for IBM BladeCenter	46C7167
SAS Expansion Card (CFFv) for IBM BladeCenter	39Y9190

BladeCenter options	Part number
SAS Connectivity Card (CFFv) for IBM BladeCenter	43W3974
36 GB 10,000 rpm SAS non-hot-swap HDD	26K5776
Multi-Switch Interconnect Module	39Y9314
PCI Expansion Unit II	25K8373
SIO Expansion Blade	39R7563
Memory and I/O Expansion Blade	42C1600
IBM BladeCenter Concurrent KVM Feature Card	26K5939
8 GB Modular Flash Drive	43W3934
73 GB 10,000 rpm SAS non-hot-swap HDD	26K5777
146 GB 10,000 rpm SAS non-hot-swap HDD	42D0421
73 GB 15,000 rpm SAS non-hot-swap HDD	43X0845
73 GB 10,000 rpm SAS hot-swap HDD for SIO	39R7389
146 GB 10,000 rpm SAS hot-swap HDD for SIO	43X0832
73 GB 15,000 rpm SAS hot-swap HDD for SIO	43X0853

BladeCenter options	Part number
15.8 GB SSD SATA SFF NHS	43W7614
31.4 GB SSD SATA SFF NHS	43W7618
Copper Pass-thru Module	39Y9320
Optical Pass-thru Module	39Y9316
Optical Pass-thru Module SC Cable	39Y9171
Optical Pass-thru Module LC Cable	39Y9172
Gb Ethernet Expansion Card (CFFv)	39Y9310
Broadcom 2-port 10 Gb Ethernet Expansion Card for IBM BladeCenter	44W4466
Broadcom 4-port 10 Gb Ethernet Expansion Card for IBM BladeCenter	44W4465

BladeCenter options	Part number
2/4 Port Ethernet Expansion Card (CFFh) for IBM BladeCenter	44W4479
NetXen 10 GbE Expansion Card (CFFh)	39Y9271
QLogic CFFh Ethernet/Fibre Combo Expansion Card for IBM BladeCenter	39Y9306
QLogic Ethernet and 8 Gb Fibre Channel Combo Expansion Card for IBM BladeCenter	44X1940
QLogic 4 Gb SFF FC Expansion Card	26R0890
Emulex 4 Gb SFF FC Expansion Card	39Y9186
Emulex 4 Gb Fibre Channel Expansion Card (CFFv) for IBM BladeCenter	43W6859

BladeCenter options	Part number
QLogic 4 Gb FC Expansion Card (CFFv)	41Y8527
4X InfiniBand DDR Expansion Card (CFFh) for IBM BladeCenter	43W4423
QLogic Ethernet and 4 Gb FC Expansion Card (CFFh)	41Y8527
Myrinet Cluster Expansion Card	73P6000
QLogic iSCSI Expansion Card	32R1923
BladeCenter Open Fabric Manager	44W3981
BladeCenter Open Fabric Manager-Advanced	46C3551
BladeCenter Open Fabric Manager-Advanced (Director Extension)	46C3552



Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server and Solaris 10 are available at competitive prices when purchasing new blade servers from IBM or IBM Business Partners in most countries.

For more information

World Wide Web

U.S. ibm.com/systems/bladecenter
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¹ For additional details, please refer to Underwriter's Laboratory (UL) certified NEBS Level 3/ETSI test report.

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³ The IBM i operating system is only supported on the BladeCenter H chassis. In addition, some of the IBM BladeCenter functions may not be supported by the i operating system. These are identified at ibm.com/systems/bladecenter/js22e/index.html.

⁴ The IBM i operating system is available only on the JS12 and J22 blades.

⁵ Maximum internal hard disk and memory capacities may require the replacement of any standard hard drives and/or memory and the population of all hard disk bays and memory slots with the largest currently supported drives available.

⁶ When referring to storage capacity, GB means 1,000,000,000 and TB means 1,000,000,000,000. Accessible capacity is less.

⁷ Microsoft Windows Server, Red Hat Enterprise Linux, SUSE Linux Enterprise Server, VMware ESX, Solaris 10, and AIX are available for purchase with new hardware in most countries either directly from IBM or through IBM Business Partners.

⁸ Some machines are designed with a power management capability to provide customers with the maximum uptime possible for their systems. In extended thermal conditions, rather than shut down completely, or fail, these machines automatically reduce the frequency of the processor to maintain acceptable thermal levels.

⁹ Options support varies by server and chassis platform. Based on IBM internal testing.

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Somers, NY 10589

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