The IBM Systems family

System z™
The flagship for IBM Systems innovation and the heart of a highly secure, resilient and integrated infrastructure.

System x®
Innovation comes standard.

BladeCenter®
Simplify Datacenter complexity.

Power Systems™
Get the power to do more, spend less.

System Storage™
IBM System x and BladeCenter Portfolio

- Scale Up / SMP Computing
- Scale Out / Distributed Computing

- Large Symmetrical Multi Processing (SMP) ‘Bricks’
- ‘Classic Servers’
- BladeCenters & Blades

WRITE HISTORY WITH POWER SYSTEMS

IBM Systems Director Family
Market and Technology Innovation

- Application Development and Software Licensing
- Consolidation and Virtualization
- TCO and ICT management Costs
- GREEN initiatives
IBM BladeCenter® is the **RIGHT** choice. **OPEN. EASY. GREEN.**

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<th><strong>THE RIGHT</strong> choice, tailored to fit your diverse needs so you can drive innovation with technology advancements</th>
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| **OPEN** and innovative for a flexible business foundation.  
**EASY** to deploy, integrate and manage so you can improve the responsiveness of systems and people |
| **GREEN** today for a better tomorrow helping to maximize return on your investments |
"If performance per watt is to remain constant over the next few years, power costs could easily overtake hardware costs, possibly by a large margin,"
- Luiz Andre Barroso, Google

IDC estimates that it would cost almost US$400,000 annually to power a 1,000 volume server-unit data center
- IDC, August 2005

Real power and cooling solutions are addressed via a combination of hardware, software, and processors --

IBM is uniquely positioned to win the argument
Today’s IT environment can be complex with multiple components required to deliver business solutions.
IBM BladeCenter Solutions

Traditional Rack Servers

Typical Datacenter Configuration

1. Ten x86 1U 2-way servers
2. RISC-based 2-way server
3. HPQ 4-way server
4. Alteon L7 E’net switches
5. FC SAN switches / Cables
6. Layer 2 GbE switches
7. KVM switches
8. Ethernet cables
9. KVM cables
10. Power cables

Bladed Datacenter Configuration

IBM BladeCenter

BladeCenter

Reduce TCO by 1/4
Reduce power by 1/3
Reduce floor space by 1/2
Integrate everything into 1
IBM BladeCenter is a simple integration of servers, storage and networking. Its innovative, open design offers a true alternative to sprawling racks and overheated server rooms.

- Multiple server management tools reduced to one
- SAN cables removed
- LAN cables removed
- Multiple external switches integrated inside the chassis
- KVM costs eliminated
- PDU costs drastically reduced
- Power, heat and floor space conserved
End to End High Availability Design

**Redundant Cooling Domains** at Chassis Level

**Redundant Power Modules** at Chassis Level

**Redundant Power Domain Design** at Blade Level

**Redundant Connectors** at Blade Level

Power Feeds

Turbines

High Speed Connectors
BladeCenter protects your critical business

**Engineered for reliability**
- Dual power connections
- Thermal/cooling redundancy
- Dual blade connections for all I/O
- Dual switch modules
- Dual paths through backplane
- Dual Management Modules
- Dual N+N power topologies
- True N+N thermal solutions

**Engineered for availability**
- Automated failover capability via Management Module
- Management Module monitors health of chassis components
- Comprehensive Predictive Failure Analysis® proactively identifies many potential issues before they cause failures
- First Failure Data Capture helps provide integrity of error reporting
- Light Path Diagnostics for easy trouble shooting

No single point of failure
Extend blade benefits to your entire business

Chassis tailored to your specific needs…

- IBM BladeCenter E
  - Enterprise, best energy, best density
- IBM BladeCenter S
  - Distributed, small office, easy to configure
- IBM BladeCenter T
  - Ruggedized
- IBM BladeCenter H
  - High performance
- IBM BladeCenter HT
  - Ruggedized, high performance

- A common set of blades
- A common set of industry-standard switches and I/O fabrics
- A common management infrastructure
There is a choice of two BladeCenter chassis for JS12/JS22 deployment

**BladeCenter H**
- Up to 14 blades
- Supports JS22 for IBM i / AIX / Linux
- Supports x86 blades
- Requires SAN
- For a data center

**BladeCenter S**
- Up to six blades
- Supports JS12 and JS22 for IBM i / Aix / Linux
- Supports x86 blades
- Disk in chassis
- For office or data center
IBM BladeCenter S

All-in-one gets you up and running fast

- **Integrated** business-in-a box foundation with configurable shared storage

- **Big IT results** even from the smallest IT staffs to deliver big IT results

- **Easy with “select-and-click” configurability**

- **Grows** with your business

- **Optimized for small office environments**
BladeCenter Office Enablement Kit

- Ideal way to deploy BladeCenter S into office environments
- Includes Acoustical Module built into the back
- Optional Air Filter on the front
- Locking door for security
- Mobile with rollers
- 33% (4U) extra room to grow
BladeCenter Blades Portfolio

**HS21 XM**
Extended-memory

**LS41**
Scalable, enterprise performance

**QS21**
High performance

**JS12**
High-performance, virtualization

**HS21**
General-purpose enterprise

**LS21**
High performance

**HC10**
Workstation

**JS22**
Scalable performance, virtualization
IBM BladeCenter JS22 Express

JS22 Express
- 4-core 4.0 GHz
- Up to 32GB of Memory
- Up to 146GB on-blade storage

Choice and Flexibility
- Supports AIX, i and Linux operating systems
- Supports the latest BladeCenter chassis
- POWERE6™ processor-based

What’s your requirement?
- Replace traditional rack-based servers
- Infrastructure Consolidation and Database Serving
- Proven BladeCenter technology and blade leadership
IBM BladeCenter JS12 Express

**Choice and Flexibility**
- Supports AIX, i and Linux operating systems
- Supports the latest BladeCenter chassis
- POWERE6™ processor-based

**JS12 Express**
- 2-core 3.8 GHz
- Up to 64GB of Memory
- Up to 292GB on-blade storage

**What’s your requirement?**
- Replace traditional rack-based servers
- Infrastructure Consolidation and Database Serving
- Proven BladeCenter technology and blade leadership
IBM BladeCenter JS12 Express Overview

- One IBM POWER6 Processor @ 3.8 GHz
- Up to 64 GB Memory via eight DIMM sockets
- Up to two optional 2.5” SAS hard drives
- Dual Gigabit Ethernet Controller (P5IOC2 HEA)
- Light Path Diagnostics Panel
- Redundant Midplane Connections
- I/O Expansion Slot Connectors

WRITE HISTORY WITH POWER SYSTEMS
The RIGHT choice – not just the ONLY choice

- A common set of blades
- A common set of industry-standard switches and I/O fabrics
- Common management infrastructure
IBM Director – Overview

- Hardware Platform Manager
- Open, integrated suite of software tools
- Provides a consistent, single point of management and automation
- Includes tools to monitor the health of your systems and to automatically take action to minimize costly outages
- Keep your systems up-to-date and running optimally
- Intelligent tools that enable rapid, remote diagnosis and resolution
Virtualize more, manage less

Reduce time-consuming administration tasks by simplifying management of virtual resources

- Plan, order and deploy a new system fully configured for your virtualized environment with the IBM System Planning and Deployment Tool
- Reach beyond the box – see and manage multiple virtualized resources as one with the IBM Virtualization Manager
- IBM Workload Partition Manager for AIX enables you to quickly create, clone, delete and move Workload Partitions across servers from one location

New or Updated

Platform Management
- IBM Systems Director
- IBM Virtualization Manager
- IBM Active Energy Manager
- IBM Cluster System Manager
- IBM Workload Partition Manager for AIX

Resource Management
- IBM System Planning and Deployment Tool
IBM BladeCenter Open Fabric Manager

An integrated server I/O portfolio providing a comprehensive set of interconnects and smart management tools

**Supported interconnects:**
- Ethernet
- Fibre Channel
- Serial Attached SCSI (SAS)
- iSCSI
- InfiniBand

**Software:**
- BladeCenter Open Fabric Manager

**Works with IBM:**
- IBM Director
- Tivoli® Intelligent Orchestrator

**Works with third parties:**
- BNT SmartConnect
- Cisco VFrame

Supported across virtually ALL chassis, blades and switches
Complete solution in one box! OR! IBM BladeCenter
Innovative BladeCenter Technology

- Flexibility & Choice
  - CPU, OS, Blade Modularity, Switches
  - Pay as you grow scalability

- Infrastructure Simplification
  - Deployment times – integration and cable reduction
  - Better use of rack/floor space
  - Solutions – through IBM and our Alliance Partners

- Power and Cooling savings
  - 20-35% Savings

- Drive out cost & reduce TCO
  - Extreme Availability
  - Density = 40-75% reduction chassis, switches and more
More Information

**Documentation, education, and services for i and BladeCenter**

- **Documentation**
  - i and BladeCenter
  - i on POWER Blades Supported Environments
  - i on a POWER Blade Read-me First

- **Education**
  - Introduction to IBM BladeCenter
    [ETEC101 – 1 day](http://www.ibm.com/systems/i/support/itc/educ/itc101.html)
  - i on Power Blade Implementation
    [ETEC201 - 2 days](http://www.ibm.com/systems/i/support/itc/educ/itc201.html)

- **Services**
  - Service voucher for BladeCenter and i provides help from the experts
    [http://www-03.ibm.com/systems/i/hardware/editions/vouchers.html](http://www-03.ibm.com/systems/i/hardware/editions/vouchers.html)