



# IBM BladeCenter servers

## Designed to grow with your business

Some IT vendors see blade servers as just another way to package a traditional two- or four-way server. But not at IBM, where we took a different approach and designed the IBM BladeCenter® server as an infrastructure solution — one that offers extreme flexibility and choice and helps our clients address the real problems of today's fast-changing business climate.

With IBM BladeCenter, it's all about choice. Consider:

### **IBM offers an entire portfolio of BladeCenter chassis that share the same blades and switch options.**

Dell offers only one chassis and Hewlett Packard (HP) does not share components between its different offerings. IBM's chassis are geared to meeting specific needs. These include:

- BladeCenter — *great choice for enterprise-class workloads*
- BladeCenter T — *designed for telecommunications and rugged environments such as military, manufacturing or medical settings*
- BladeCenter H — *for high-performance computing, technical clusters and virtualized enterprise solutions wanting a 10 GB fabric*

### **IBM offers multiple processor technologies, I/O and storage options for BladeCenter.**

Whereas Dell only offers an Intel® Xeon® (EM64T) processor, IBM offers the EM64T and AMD Opteron (single or dual core), IBM PowerPC® and Intel Xeon MP processors. Not only that, but IBM BladeCenter servers offer the Myrinet clustering adapter, which is not available in HP or Dell blade servers. BladeCenter servers support up to three input/output (I/O) slots and four hard disk drives using the Small Computer System Interface (SCSI) storage expansion unit, whereas HP and Dell can only support one I/O slot and two hard drives. And neither of these competitors can offer support for two 100 MHz PCI-X adapters using the BladeCenter PCI I/O expansion unit.

### **IBM BladeCenter servers support multiple operating systems (OSs) and switch technologies.**

IBM offers support for Microsoft® Windows®, multiple Linux® vendors, IBM AIX® and the Sun Solaris operating environment — all inside the same chassis. You can also choose from multiple switch technologies:

- *IBM BladeCenter servers feature multiple enterprise-class Ethernet switch offerings from Cisco and Nortel that also including Layer 3 functionality, trunk failover and other features not found on all competitor blade offerings.*

- *BladeCenter servers support the integrated Nortel Layer 2-7 switch, an option neither HP nor Dell can offer.*
- *BladeCenter servers support the integrated TopSpin Infiniband switch, whereas HP does not and Dell's is only a pass-through switch.*
- *IBM supports 4-GB fibre channel from the blades to the midplane to the switch to the storage device. Neither Dell or HP offer this today.*

### **Facts about infrastructure simplification and budget savings**

- *By supporting 14 blades per chassis compared to 8 in HP ProLiant BL20p or BL25p, or 10 for Dell PowerEdge 1855, you require fewer chassis, switches, cables and other peripherals. The result? Potentially reduced deployment times and costs — plus fewer parts to manage.*
- *The integrated media in BladeCenter gives you the flexibility to install software and drivers locally, as well as remotely, through IBM Director management software. Dell and HP require the use of a special cable and a special USB CD or diskette drive to work locally.*

## Designed for extreme availability and reliability

IBM BladeCenter has the following design features:

- *A high-availability dual-path midplane, which provides two communication paths to the midplane for Ethernet, fibre-channel, keyboard, video monitor and mouse (KVM) switches, power supply and management signals. This setup helps ensure that all the servers keep running, even if there is an issue with a connector on a blade or a path on the midplane.*
- *Support for redundant management modules, ensuring that you have the option and extra protection to access the chassis from remote locations.*
- *Multiple hot-swap components (blowers, power supplies, management modules and switches) to help avoid having to take blades offline.*
  - *The HP fibre-channel switch is not hot-swappable and it does not have redundant management.*
  - *BladeCenter also comes with two blowers to help reduce potential points of failure. HP has eight fans on each BL20p and four on each BL30p blade.*
- *IBM Predictive Failure Analysis<sup>®</sup> technology can help predict failures before they occur on multiple components, including hard disk drives, memory, CPUs and blowers.*
- *Light path diagnostics provide a central-information LED panel and individual LEDs throughout the system on items such as memory dual inline memory modules (DIMMs), I/O, power supplies and CPUs. This can help service personnel pinpoint a specific failing component (even without power), helping reduce downtime and service costs.*

- *BladeCenter is also designed with integrated power supplies, which help make it easier to deploy and set up than the HP with its external power enclosures, and can help ensure near-continuous operation.*
- *IBM BladeCenter servers can help to have an even bigger impact on the IT budget, especially when buying multiple blades:*
  - *Reduced cabling for KVM, Ethernet, fibre channel, power supply and other cables, and remote management infrastructure.*
  - *Potentially lower operational costs because the BladeCenter density can allow for up to 84 blades in a 42U rack, which is 75 percent more than HP BL20p or BL25p and 40 percent more than Dell PowerEdge 1855, when you factor in required power supplies. This density saves floor space and can help you get more out of your investment. Finally, IBM BladeCenter servers might provide a power savings over competitive blade servers.*

### IBM BladeCenter: The leading edge of server technology

IBM BladeCenter servers can become the building block for all your IT needs, helping you reduce complexity and manage your entire solution, not just your servers. For more information about how IBM BladeCenter servers can help your organization, contact your IBM representative, call 1 866 426-0472 or go to

[ibm.com/systems/bladecenter/](http://ibm.com/systems/bladecenter/)



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#### NOTES:

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 shutdown completely, or fail, these machines automatically reduce the frequency of the processor to maintain acceptable thermal levels.

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