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From households to global corporations, everyone seems to be looking for ways to streamline the way they operate. And more than ever, mid-sized companies are searching for ways to do more with less. Like most companies, mid-sized businesses are focused on growth, but constrained resources are challenging their competitive force.

Mid-sized companies need new ways to leverage technology advances in order to improve their market stance without increasing costs. They need high-end data center capabilities without the high price tag or the space requirements. They can also do without excessive power consumption, heat output and noise. Consolidating and centralizing IT resources can help immensely. Better yet? An all-in-one server solution with servers, storage, networking, management and more—all built into a single chassis.

According to industry analyst Gartner, midsize businesses run 25 to 45 servers on average to power their business functions. Approximately 10 of those servers are appliances designed to perform a single or specialized set of server functions such as storage, Web serving or security.¹ Integrating these and other activities can dramatically reduce the physical server sprawl associated with typical data centers. Consolidation can also greatly reduce IT resources and associated costs.

Analysts at IDC note that blade servers make up the fastest growing server market, with revenues projected to grow from \$3 billion to \$11 billion by 2010.² The midmarket blade servers introduced in the past two years seem to be contributing to this growth. Small offices and larger companies with distributed locations are now jumping on board the simplification and integration that the biggest companies have been getting from blades for years. For mid-sized companies ready to sharpen their computing platforms with blade servers, careful consideration of their options can reveal clear contrasts.

Two of today's technology powerhouses offer servers with the potential for addressing pressing midmarket needs: IBM BladeCenter S and HP BladeSystem c3000, a.k.a. "Shorty." Let's see how these blade servers stack up.

Storage

IBM offers up to 9.15 TB of shared storage in addition to the 146 GB of storage customers can install on each blade, plus enables virtualization support. The storage can be added in one-drive increments. IBM BladeCenter S also offers optional solid state drives, which, according to IBM, are up to three times more reliable and use up to 87 percent less power than standard mechanical hard drives. HP currently doesn't offer a solid state drive option, and lags with only 4.64 TB maximum of shared storage—less than half of what IBM BladeCenter S offers—and inadequate support for virtualization.

SAN

IBM BladeCenter S delivers a fully redundant, fully integrated storage area network (SAN) for the office environment—an industry first—built into the BladeCenter S chassis itself and based on SAS technology. Unlike the BladeCenter S with SAS RAID controller, HP doesn't currently deliver the SAN solution within their blade chassis, given the external storage configuration.

Cost

For a lower price from IBM, you'll get a fully outfitted chassis with power supplies, fans, storage enclosures, rack rails, DVD drive and more.

Noise

IBM internal research shows the BladeCenter S to typically operate at 69 dB when installed with the Office Enablement Kit. The HP BladeSystem c3000, at twice as loud, far exceeds humming at an average of 75 dB, the equivalent sound of a vacuum cleaner. HP offers no additional option for noise suppression.

Redundancy

With redundant power, cooling and switching, IBM BladeCenter S includes redundant midplanes, redundant midplane power connections and redundant midplane I/O connections. HP provides only midplane I/O redundancy. With redundancy throughout, the BladeCenter S eliminates the potential points of failure that exist in the BladeSystem c3000, delivering higher availability.

Scalability

IBM offers built-in storage drives so that customers can simply add a drive if they need more storage. There is also 33 percent more room for growth because of extra space in the BladeCenter S enclosure. HP's tower leaves no room for power distribution units (PDUs), and if customers need more storage, they have to add a storage blade that occupies an entire server slot.

Security/switching

The BladeCenter S product line features role-based security, allowing organizations with separate server, networking or storage departments to securely assign management tasks. The BladeCenter Office Enablement Kit comes with front- and rear-locking doors that help ensure data will remain safe and secure in any environment.

Setup

The BladeCenter S Start Now Advisor is a self-guided, point-and-click wizard that allows users to set up the entire chassis, including servers, storage and networking, in 30 minutes or less from a single console. HP doesn't provide end-to-end setup.

The IBM BladeCenter S features layer 2-7 switching for hacker protection, application failover and virus protection. Self-contained layer 2-7 services within the chassis enable direct connection to a typical small-office DSL or cable modem Internet connection with built-in security from Network Address Translation (NAT), Denial of Service (DoS) protection and packet filtering. IBM says that customers can lower TCO up to 33 percent, along with increased performance with the layer 2-7 switch, compared to having separate layer 2-3 and layer 4-7 devices. HP currently has no layer 2-7 switch offering, and the HP BladeSystem c3000 requires external security devices for adequate protection.

Issue alerting

The BladeCenter Service Advisor, standard on all IBM BladeCenter S servers, automatically alerts IBM or the service provider when issues arise. This makes it easier than ever to identify and resolve potential issues, sometimes even before they occur. Shorty doesn't offer this function.

Rack

The IBM BladeCenter S Office Enablement Kit features specialized locking, with an 11U enclosure that includes space for the 7U BladeCenter S and up to six blade server bays, plus an additional 4U of flexible space for devices such as tape library, keyboard and LCD tray, PDUs or other devices. IBM's rack includes noise dampening and air filtration to reduce noise and help protect the rack from dust and debris. The HP BladeSystem c3000 holds up to four full-height server blades, doesn't allow room for optional devices and doesn't include noise dampening or dust filtration.

Power

The IBM BladeCenter S requires four standard 110-volt or 220-volt power cords to run all blades, while the HP BladeSystem c3000 requires six power cords to run all blades. The BladeCenter S runs in any office environment on 110-volt power and has no special cooling requirements.

All in all, the IBM BladeCenter S seems like a good choice for midsized companies looking to simplify infrastructure complexity and manageability while lowering total cost of ownership. Unlike other midmarket servers that are simply slimmed-down versions of their enterprise counterparts, the IBM BladeCenter S chassis was designed specifically for the midmarket. It's a true all-in-one solution with servers, networking, I/O, management and now fully redundant, fully integrated SAN storage built into the BladeCenter S chassis.

The flexible modular technology integrates Intel® and AMD Opteron™ processor-based blade servers to support a wide range of operating systems. Hot-swap and redundant switch modules support SAS, Gigabit Ethernet and Fibre Channel options. The standard management tools, including IBM Systems Director, are open and easily integrated. The IBM Systems Director Active Energy Manager, along with IBM Cool Blue™ technology, helps to green up the IT infrastructure.

BladeCenter S also features virtualization capabilities for midsize companies looking for more ways to simplify IT and cut costs. As an authorized reseller of VMware® products, IBM offers several end-to-end virtualization solutions, including the BladeCenter S with VMware ESXi 3.5 embedded hypervisor—a thin, OS-independent hypervisor that partitions physical servers into multiple virtual machines. The BladeCenter S is available with VMware ESXi embedded on the server, for integrated virtualization capabilities right out of the box. So you can actually power up your BladeCenter S server and deploy virtual machines in a matter of minutes. **IBM Virtualization Manager, available as an extension to IBM Systems Director, helps you to manage your virtual resources.** And because you can integrate your servers, storage, networking, applications and I/O into a single chassis, moving to virtualization on the BladeCenter S is far less expensive than with other rack servers.

The New Orleans Saints: High fives for the BladeCenter S

So what are customers saying about the IBM BladeCenter S? The New Orleans Saints football organization has been using IBM for years. Today, they deliver all of their major applications from the IBM BladeCenter S, including their scouting database, scouting applications, e-mail, Internet access, security, a financial application, player histories, player statistics, player contracts and more. And availability is critical. IT Director Jeff Huffman stresses that coaches and scouts must have access to the scouting database 24 hours a day, seven days a week. “There is no downtime. Downtime is just not acceptable,” says Huffman. Besides availability, they're benefiting from virtualizing many of their servers and have condensed their footprint, reduced power consumption and air conditioning needs and decreased costs.

According to Jody Barbier, New Orleans Saints Assistant IT Manager, “The BladeCenter S is a data center in a box, and [it] is not even a very big box.” They currently have two six-foot racks and three four-foot racks serving up their valuable business applications and data day after day. But don't think the server never gets a change of scenery. “The on-board storage makes it ideal for any small office or organization that's on the move,” says Barbier. In the past, they've had issues with coaches trying to access files back in New Orleans. Now, with the compact BladeCenter S, they can bring the files with them on the road and have a complete setup on the spot. “The BladeCenter S definitely can make the trip with us if we go to the Super Bowl,” says Barbier.

IBM BladeCenter S: A better choice for the midmarket

IT industry analyst Pund-IT Research sums up the advantages of the IBM BladeCenter S in a 2007 report: “The bottom line? IBM’s BladeCenter S is designed to help meet the critical requirements of smaller companies and similar environments, such as the branch offices of larger organizations. The platform’s highly flexible integrated components, combined with offerings and options provided by IBM’s myriad collaborators, qualify the BladeCenter S as a total solution capable of supporting virtually any smaller organization. Overall, small and midsized businesses facing IT challenges including increasing complexity, decreasing efficiency and the need to maximize IT investments would be wise to consider IBM’s BladeCenter S solutions.”³

To learn more about the IBM BladeCenter S, you can download the BladeCenter S e-Kit at: <http://www-03.ibm.com/systems/migratetoibm/smb/>

Sources

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2. IDC: “Worldwide and U.S. Blade Server 2006-2010 Forecast and 2005 Vendor Shares,” report #203964, October 2006.
3. Pund-IT, Inc.: “IBM’s BladeCenter S: Sharpening Blade Servers for Small Businesses,” by Charles F. King, September 18, 2007.