



THE ENTERPRISE NEWSWEEKLY

IBM smooths 64-bit route

REVIEW: OPTERON-BASED ESERVER 325 IS ROBUST, AFFORDABLE

By Francis Chu

IBM'S FIRST TWO-WAY OPTERON-BASED SERVER, the eServer 325, combines 64-bit computing power, an affordable price and a rack-optimized form factor. This provides an impressive server platform for 32-bit shops that are looking to migrate to 64-bit computing down the road.

With a low entry price for the performance it offers, the eServer 325, which shipped earlier this month, will be a good pick for hosting 32-bit and 64-bit applications in server farm clusters, grid computing and HPC (high-performance computing) applications, and in compute-intensive areas such as academic or scientific research.

With the ability to equip two Advanced Micro Devices Inc. Opteron processors per eServer 325, or 84 processors in a standard-size rack, IT managers can pack a lot of computing horsepower in a little space—an important factor to be considered in the HPC world.

Although the eServer 325 is a good fit for large cluster applications, not every site will need its high level of computing power. However, with its relatively low price, the compact eServer 325 can also work quite capably as a general-purpose server in many enterprises.

Unlike Intel Corp.'s Itanium 2 processors, the Opteron processors run both 32-bit and 64-bit applications natively without performance overhead, so companies can buy Opteron systems to run their 32-bit applications and operating systems while preserving their option of powering up to 64-bit down the road.

In contrast, Itanium 2 processors are designed from the ground up to run in 64-bit environments and suffer a performance penalty when running 32-bit applications in emulation mode.

The eServer 325 can be equipped with AMD Opteron processors at speeds of 1.4GHz (Opteron Model 240), 1.6GHz (Model 242) or 2GHz (Model 246). The \$2,919 entry-level eServer 325 includes one 1.4GHz Opteron

processor, 1GB of SDRAM (synchronous dynamic RAM), an 80GB IDE hard drive, integrated management and dual embedded 10/100/1,000M-bps Gigabit Ethernet ports.

IBM, Dell Inc. and Hewlett-Packard Co. also offer 64-bit servers with Itanium 2 processors but at a much higher cost. For example, IBM's Itanium 2-powered xSeries 382 server



IBM's eServer 325 delivers 64-bit power.

starts at \$10,000, and Dell's PowerEdge starts at \$7,800. Adding processors and memory to these systems quickly brings the price to more than \$20,000.

The \$5,088 eServer 325 system we tested was equipped with dual 1.6GHz Opteron processors, 2GB of SDRAM, a 40GB hard drive and dual embedded Gigabit Ethernet ports.

The eServer 325 is a mere 1U (1.75 inches) high—but it has good scalability, offering six DIMM (dual in-line memory module) slots, two hard drive bays with a maximum internal storage capacity of 292GB and dual 64-bit PCI-X slots.

The server's extra memory slots will allow the system to scale up to 12GB of memory using 2GB DIMMs—an expensive investment, but 64-bit applications can exploit the higher memory support.

The eServer 325 does not have redundant power supplies. For sites with bigger IT budgets, this won't be a big problem. However, smaller sites will probably find replacement and spare server costs harder to swallow.

The eServer 325's integrated system management processor provides easy out-of-band management via a text console over a serial or LAN connection. The management processor also allows remote power control of the server.

The eServer 325 currently supports only SuSE Linux AG's SuSE Linux Professional 8.2 or SuSE Linux Enterprise Server 8.0 for Opteron operating systems. However, Red Hat Inc. has pledged support for the 64-bit Opteron platform in its Red Hat Linux enterprise offering, and Microsoft Corp. last week announced the beta availability of Windows Server 2003 supporting the AMD Opteron architecture. ☛

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EXECUTIVE SUMMARY

eServer 325 IBM's first Opteron-powered server provides a robust platform for the two-way AMD chip at an affordable price. This makes the eServer 325 a good fit for compute-intensive sites looking to make a gradual transition to 64-bit operations. The eServer 325 starts at \$2,919 with a single processor and 1GB of memory, and a well-equipped dual-processor system costs about \$5,000. More information about the eServer 325 is at www.pc.ibm.com/us/eserver/opteron/325.

KEY PERFORMANCE INDICATORS

USABILITY	GOOD
CAPABILITY	GOOD
PERFORMANCE	GOOD
INTEROPERABILITY	EXCELLENT
MANAGEABILITY	EXCELLENT
SCALABILITY	GOOD
SECURITY	GOOD

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capabilities; lacks redundant power.

EVALUATION SHORT LIST • Dell's PowerEdge 3250 • HP's Integrity cx2600