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Blade PCs get a new edge

- By Karen D. Schwartz
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Virtualization and other tricks help make the case for a data center approach to PCs

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PC blades might seem like the dumb terminals of 20 years ago, but there is nothing dumb about them. A blade PC gives users access to the equivalent of a fully functional PC. The only difference is that the data, processor and hard drive are safely stowed in racks behind secured doors. The only components that sit on a user's desk are a keyboard, a mouse, a display and a small box that connects those peripherals to the network.

Numerous government agencies have been sold on blade PCs' primary benefits, such as greater physical and data security, high availability and uptime, better manageability, and reduced operating and support costs compared with traditional PCs.

Recent blade developments may add some new points of appeal, such as virtualization, which lets multiple users share a single blade. In addition, new connectivity and configuration options will greatly expand the types of applications users can perform.

Those benefits are translating into expectations of healthy growth for the technology, which is offered by companies such as ClearCube, Hewlett-Packard, Hitachi Data Systems, IBM and Verari Systems. Blade PC sales will grow about 160 percent through 2009, according to market researcher IDC.

For many organizations, especially in the government sector, security has been — and still is — a major driver in the adoption of blade PCs.

"All of the data resides completely in the data center, so the only thing that goes out to the user is pixels," said Win Reis, product manager for blade PCs at HP. And to drive home his point, Reis emphasized the ephemeral nature of those pixels. "At the end of the session, even that last set of pixels is removed, so you have a totally secure device where the data is secure, and the transmissions are encrypted."

Security was one of the primary reasons that Headquarters Air Force Security Forces Center at Lackland Air Force Base chose to move to PC blades a few years ago. The base in San Antonio, Texas, which supports Air Force Security Forces, was moving into a new building at the time. Richard Johnsen, a senior network engineer, had orders from his superior to ensure that all of the organization's 500 employees had computers capable of handling classified information at the secret level.

“I knew it would be a huge undertaking because with secret computers, you have to have removable hard drives,” Johnsen said. “You can’t leave anything behind when you’re not there.”

Instead of going the traditional PC route, which would have required buying safes to lock up the hard drives when not in use, the center went with PC Blades from Clear-Cube. The facility now has about 300 in use.

Promises about blade PCs’ ease-of-management benefits have proved true at Lackland, Johnsen said. For example, the center’s information technology managers can remotely diagnose and replace a user’s computing power in minutes.

“We just transfer them to a spare blade, and they still have access to all of their data because it performs a mirror copy of everything they are doing onto another blade,” Johnsen said. “They are up and running in five minutes versus several hours.”

Johnsen’s office has also discovered one of the newer benefits of blade PCs, which is virtualization. Instead of having to buy a blade for every user, virtualization software splits one physical blade into two or more separate PCs.

“For things like e-mail and light use, 80 percent to 90 percent of the PC isn’t being used,” said Rob Enderle, an analyst at the Enderle Group. “In that case, you could put two or three people on a single blade and bring down the overall cost significantly.”

That was Johnsen’s thinking. He purchased only 24 additional blades because he planned to virtualize them.

“The computers we have today far exceed the needs of the average user, so we’re going to put two virtual sessions per blade, which will halve the number of computers we’re using and double the capacity,” Johnsen said. “Users won’t even know the difference.”

With those advantages, why isn’t more of the government moving to blade PCs? Part of the reason might be cultural. After all, it’s disconcerting to sit down at a computer that lacks a hard drive, CD drive or other features associated with a conventional PC.

Another factor is cost. On the surface, at least, blade PCs appear to cost much more than traditional PCs. And that’s partly true. According to IDC, blade PCs cost on average about 44 percent more than their traditional counterparts.

Part of the additional cost is the blade itself. The technology hasn’t reached critical mass yet, which means that it hasn’t reached its lowest possible cost point, as PCs have, Enderle said. Other costs include dealing with a potential increase in thermal loading for the center that houses the blades, especially if the center wasn’t designed for that purpose.

However, the cost equation is misleading, according to IDC. Through the life cycle of the blade PC, it will net more than a 400 percent return on investment because of overall reduced support costs, higher availability, and greater security and manageability. In a 2005 study, IDC found that a 100-seat ClearCube implementation saved the equivalent of $35,120 annually in IT support costs, and an organization of 5,720 employees could save as much as $2 million annually in desktop management costs by adopting blade PCs.

Conventional wisdom says that a $1,000 traditional PC will cost about $12,000 in support costs for the four-year life of the device, said Greg Witt, federal vice president at ClearCube. A blade PC’s support costs for the same period are about 40 percent less.

Meanwhile, organizations often can reduce the number of IT support employees needed if they switch to blade PCs. Lackland Air Force Base’s Air Force Security Forces Center, for example, was able to reduce its IT support staff

from 11 to six after it installed blade PCs.
One temporary impediment to greater adoption of blade PCs is the lack of clear standards, but PC analysts say standards will come.

“Outside of the cage itself, each of these solutions is different,” Enderle said. But that situation could change quickly, he added. “PC blades and server blades use a lot of the same technology, so as soon as we get a core set of standards on server blades, we’ll probably have a core set of standards on PC blades shortly thereafter.”

Once that happens, Enderle said, prices will drop and the market for blade PCs will heat up.

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