Key benefits of a converged data center infrastructure

One of the biggest data center infrastructure challenges that IT executives face is the management of disparate technologies and standards. Emerging converged infrastructure technologies could alleviate this management challenge and connect IT silos for on-demand resource sharing. In this expert e-guide from SearchDataCenter.com, learn about the benefits a converged infrastructure can provide to your data center, including simplified management. And discover how to boost data center efficiency with the help of a converged infrastructure.

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'Wire once and walk away' boosts data center efficiency

By Mark Vaughn

"Set it and forget it" is a popular catchphrase from late-night infomercials for rotisserie ovens. Now a similar phrase is emerging around data center efficiency: "Wire once and walk away."

"Wire once and walk away" marks a change in how you run your data center, by creating an infrastructure with a fraction of the typical cabling and management demands. With this approach, the days of filling your data center with physical servers that each have two power supplies, four or more Ethernet cables and multiple fiber connections are over.

The phrase "wire once and walk away" has been around for a while, but technology -- server virtualization, blade servers and converged infrastructure -- has only recently advanced to the point where this approach can become a reality.

Server consolidation through virtualization was the first step in this direction. By running multiple server instances on a single device, you reduced power usage, rack space, cabling demands, cooling requirements and more, which lowered costs. Server virtualization revolutionized data center efficiency, but some hardware manufacturers realized that more could be done.

Next up were blade servers, which were still working to prove their relevance and value, because they required some rethinking of data center design and server management. But when you added the server consolidation benefits of virtualization with the physical consolidation perks of blade computing, things began to click. Still, the "wire once and walk away" approach required more, because blade servers alone didn't offer the technological advances needed to significantly reduce cabling and management overhead.

That brings us to the present and new converged infrastructure products, such as Hewlett-Packard's BladeSystem Matrix. These new technologies combine network and storage
communications and take advantage of blade server technologies, bringing about new levels of data center efficiency.

And new management tools allow you to carve up the bandwidth on these systems and allocate it to blades in a very simple manner. Quite literally, once the blade enclosure is racked and cabled, there is no longer a need to physically manipulate anything in the chassis cabling -- the very definition of the term "wire once and walk away."

Skeptics approach converged infrastructure with caution, concerned about the potential learning curve, vendor lock-in and long-term supportability. These concerns are typical with new technologies. HP addresses concerns about the learning curve by making converged infrastructure an optional component of its c-Class blade platform.

The potential savings and improved management functions of converged infrastructure are very real. You may not find these products in a late-night infomercial, but they are going to change the way you design and manage your data center.
Converged data center infrastructure promises to banish IT silos

By Laura Smith, Features Writer

One of the biggest data center infrastructure challenges that IT executives face is the management of disparate technologies and standards. For decades, they've implemented various parts of the puzzle -- servers, routers, storage and management -- only to wind up with IT silos. Emerging converged infrastructure technologies could alleviate this management challenge and connect those silos for on-demand resource sharing.

"Way back when, convergence was voice and data," recalled Jeffrey Kaplan, managing director of ThinkStrategies Inc., a consultancy in Wellesley, Mass. Today's convergence "is around centralized control of a traditional data center environment, while at the same time permitting self-service provisioning around authorized end users," he said.

Enterprises can build their own converged data center infrastructure, but the hassle is a hurdle, according to experts. Hence the arrival of third-party converged infrastructures: essentially, plug-and-play virtual computing parcels from such vendors as Hewlett-Packard Inc., with its BladeSystem Matrix.

These software products are integrated, tested, optimized and supported with no finger-pointing -- a big plus, according to Geoff Woollacott, engagement manager and senior analyst at Technology Business Research Inc., in Hampton, N.H.

"It is a compelling value proposition," Woollacott said. A converged infrastructure increases the efficiency of what's been built over time, he said. "The old CIOs were builders. New CIOs are architects. This is the blueprint."

Who would use a converged data center infrastructure?

Joe Onisick, technology solutions architect at World Wide Technology Inc., a systems integrator in St. Louis, has worked with clients to design and implement converged
infrastructures using products from both Cisco Systems and Hewlett-Packard.

Typically these projects are either new build-outs, where a converged data center infrastructure will be used from square one; or the migration of an existing infrastructure to a converged environment, utilizing as much as possible of the legacy investment, Onisick said.

"Large organizations already have a lot of infrastructure in place," said Greg Shields, senior partner and principal technologist at Concentrated Technology LLC, an IT education and strategic consulting practice in Denver. "As they roll out the old hardware, they'll replace it with 'virtualization-in-mind' converged infrastructure hardware."

This "sunset" process would allow enterprises to build a converged infrastructure in phases, adding on modular products to what's already there. Rather than repeating the silo mistake with new equipment purchases, "converged infrastructure tends to sidestep that by elevating ourselves away from do-it-yourself," Shields said.

**Converged data center infrastructure extends a private cloud**

At first glance, a converged data center infrastructure appears similar to a private cloud, which many IT executives consider to be a network of servers providing on-demand services "with a hypervisor, management studio and business practices to wrap around that," Shields said. But it makes more sense to think of a converged infrastructure "as a mechanism by which IT executives can add to a private cloud."

"The idea is modularity," Shields said. "I'm a business owner. Wouldn't it be nice for me to look at a screen and see that I need more compute, memory and storage; and then go to [a vendor's] website and say, 'I need X more capacity,' and have it show up in a box?"

The promise of that kind of convenience is getting the attention of such large enterprises as G&J Pepsi-Cola Bottling Inc. The distributor of PepsiCo Inc. and Dr. Pepper products in Ohio and Kentucky plans to use Hewlett-Packard's converged infrastructure to eliminate network
bottlenecks among its corporate headquarters, 10 warehouses and a separate disaster recovery site.

Still, enterprises will have to weigh the benefits of a converged data center infrastructure from a third-party vendor -- the main one being that there's one throat to choke -- with the drawbacks of relying on a single vendor for the majority of your infrastructure needs.
Resources from HP and Intel

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In addition, the company makes networking products, medical electronic equipment, instruments and systems for chemical analysis, handheld calculators and electronic components.

HP is among the top 20 on the Fortune 500 list. The company had net revenue of $42.9 billion in its 1997 fiscal year. More than 56 percent of its business comes from outside the United States, and more than two-thirds of that is from Europe. Other principal markets are Japan, Canada, Australasia, the Far East and Latin America. HP ranks among the top 10 U.S. exporters. HP is No. 5 among Fortune's Most Admired Companies and No. 10 among Fortune's Best Companies to Work for in America.