

Data Center Breakthrough: Unify the Network and the Server

Effective government depends on collaboration and information access, and the services that make this possible reside in government data centers. How can you continue to provide more and better services with limited budgets, and without outgrowing limited data center space, power, and IT resources?

The Old Model: Some Assembly Required

Until very recently, adding a new IT service required the following activities. You would buy a server chassis, server blades, two Ethernet switch modules to connect the chassis to the LAN (in case one module failed), two Fibre Channel switch modules to connect to the storage area network (SAN), and cables. Then you would hook up all the components and begin managing them. When the first server chassis was full, you'd buy a new one, populate it with server blades and four new switch modules, and repeat.

"If the service grew to 128 server blades, you'd find yourself individually managing as many as 16 blade chassis with at least 32 LAN switches and 32 SAN switches," says Tim Silk, manager of systems engineering, Cisco. "The trouble with using different platforms for the server, network, and storage access is that successful services become more expensive to deploy, manage, and troubleshoot."

It's no wonder that more than 70 percent of IT budget is spent just maintaining and managing existing structure, as Forrester concluded in a December 2008 study.

The New Architecture: Unified and Ready to Go

Now agencies can introduce and manage services for citizens and employees more quickly and with far less money, resources, and energy consumption, with Cisco Unified Computing System. Introduced in March 2009, Cisco Unified Computing System is the first architecture that brings together on one platform everything needed to support a data center service: servers, storage access, virtualization, and network connectivity. Silk says, "An architecture that's designed from the ground up to be managed as a single system costs significantly less to manage."

Scale with a Fraction of the Cost and Effort

The main system—deployed first—includes a unified fabric that connects to both the LAN and SAN. Even for the smallest services, this simplifies the cabling infrastructure and halves the number of switch modules to purchase and manage.

The benefits become more dramatic as your service grows. Subsequent chassis don't need their own LAN and SAN switches. Instead, they connect directly to the main chassis and share its switching resources. "Even if a service grows from needing one server module to hundreds, the management burden remains the same," Silk says.

Cisco Unified Computing System can grow to 320 server blades in 40 interconnected chassis. Memory scales up to 384 gigabytes per server. And you can continue to use the same operating system you use today: VMware, Red Hat Linux, or Microsoft.

One Unified Computing System, Many Services

What's more, those hundreds of servers can act like thousands of virtual machines, managed with no more resources than if you had one server. Virtualized server environments use less hardware, and therefore need less data center space. They also consume less energy.

One System to Manage

Finally, Cisco Unified Computing System simplifies ongoing management costs because government IT personnel can use one interface to manage everything related to the service: server, storage access, and connectivity. You can use the included management tool, or take advantage of standard APIs to use a third-party tool.

To read more about Cisco Unified Computing System and watch a video, visit: www.cisco.com/go/unifiedcomputing




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