Retailer Prepares for the Future While Reducing Costs

Slumberland, Inc. replaced blade servers with Unified Computing System, saving US$1678 on each new server.

EXECUTIVE SUMMARY
SLUMBERLAND, INC. • Retail • Little Canada, Minnesota • 2300 employees
CHALLENGE • Implement cost-effective data center server platform • Support more servers without adding staff • Decrease operational costs
SOLUTION • Deployed Cisco Unified Computing System, engaging Cisco Advanced Services for planning and design • Continued using existing storage area network and Cisco MDS 9134 Multilayer Director • Integrated with Microsoft Hyper-V Server 2008 R2, Microsoft System Center Operations Manager, Microsoft SQL Server, and Microsoft Windows Deployment Services
RESULTS • Provisioned 28 logical servers in three days, spending 74 percent less compared to previous architecture • Managed 120 servers with only two system administrators • Reduced per-server management costs from $1575 to $80

Challenge

Founded in 1967, Slumberland, Inc. is a retailer offering mattresses and home furnishings through stores and a website. To provide more value to customers, the company aggressively pursues opportunities to keep business costs down. So when it came time to replace data center servers, the IT department began investigating new data center architectures that would enable cost-effective growth.

"In the current economic climate, management has asked us to keep equipment a year or two longer," says Seth Mitchell, infrastructure team manager, Slumberland. "That made it very important to choose a computing system that supports new technologies such as virtualization and FCoE [Fibre Channel over Ethernet]."

Slumberland considers virtualization to be an important tactic to meet growing demand for compute capacity. The two-person server team had 30 pending requests for new servers to support applications intended to increase business efficiency.

Solution

After evaluating data center computing platforms, Slumberland selected the Cisco® Unified Computing System (UCS), implementing it in September 2009. "The Cisco UCS offers the technologies we need now and over the next five years, including virtualization, low-cost scalability, and support for FCoE," Mitchell says.

Slumberland's Cisco UCS comprises two chassis, each with four server blades. Testing in the Slumberland environment revealed the optimum density to be 20 virtual machines per blade. The IT department selected Microsoft Hyper-V Server 2008 R2 virtualization software because of the software's small footprint and the staff's existing Microsoft skills.

The Cisco UCS hosts the following:

- The various operating systems used at Slumberland, which include Microsoft Windows Server 2003 and 2008 and Red Hat Enterprise Linux
- Microsoft SQL Server, used for data warehouses and a custom business-critical ordering application
- Cisco Unified Communications Manager, used for IP telephony
- Oracle 10g RAC

To manage the system, the IT department uses Cisco UCS Manager software in conjunction with Microsoft Windows Deployment Services. "It takes just a few clicks to provision a new virtual server, move a virtual server between blades and chassis, or install the Windows operating system," says Mitchell.

Rapid Deployment

Cisco Advanced Services provided planning and design services, including explaining the relative advantages of different design and integration options for optimal performance and maintainability in the Slumberland data center environment.

The Slumberland IT department implemented the Cisco UCS internally, spending three days integrating the system into its environment and another two days tuning automated deployments. "Implementation was much easier than I had anticipated," Mitchell says. "We just configured the fabric interconnects, created address pools, and created service profiles to apply to each blade. If we did it again, we could complete implementation in four hours." The Cisco UCS integrated smoothly into Slumberland's existing data center architecture, and the company continues to use its existing SAN and Cisco MDS Multilayer Director.

> "During the first three days of operation, we provisioned 28 logical servers, spending $46,984 less than we would have with our previous server architecture. When we make use of all eight server blades, savings will increase to $187,936. Going forward, we will save $1678 on each logical server we deploy."
> — **Seth Mitchell, Infrastructure Team Manager, Slumberland, Inc.**

Results

Lower Capital Costs

The IT department calculated that deploying 14 logical servers on the Cisco UCS costs 57 percent less than it does on Slumberland's blade server system. The savings increase as the system grows: 20 logical servers cost 67 percent less, and 28 logical servers cost 74 percent less. (Calculations include operating system and backup licensing for three years.)

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Slumberland is saving more money on network connectivity. A single pair of Cisco 6100 Fabric Interconnects provides connectivity for all chassis and blades in the Cisco UCS, which enabled the company to consolidate from a 100-port switch to a 20-port Cisco Catalyst® 4900 Switch.

Faster Provisioning, For Greater Business Agility

With the previous computing system, the IT department had to configure network connectivity, storage access, and out-of-band management for each chassis. With the Cisco UCS, in contrast, IT performed the configuration just once. "Network provisioning took 30 minutes on Cisco UCS, compared to 90 minutes for a blade server," Mitchell says. "Any additional chassis and blades that we add in the future won't require even a minute more on connectivity."

Lower IT Staffing Costs

Slumberland is managing 120 servers with only two system administrators. One reason is simplified management. Previously, system administrators each spent 16 hours weekly provisioning and managing physical servers. "I estimate that management efficiencies from Cisco UCS and Microsoft Hyper-V 2008 R2 have freed up 10 hours weekly for each person to spend on tasks that add business value," says Mitchell. This translates to $45,000 in annual savings, based on $90,000 for a full-time employee.

What's more, virtualizing servers on the Cisco UCS greatly increases the number of physical servers that each system administrator can manage. Before, managing 56 physical servers took 28 hours, worth $88,200 in staff time, or $1575 per server. Now, managing the same number of logical servers on four Cisco UCS blades takes just 4 hours, worth $4500 in staff time, or $80 per server.

High Performance

Supporting up to 150,000 input and output operations per second (IOPS), the Cisco UCS Converged Network Adapter meets Slumberland's demanding I/O requirements. The Cisco UCS B200 M1 blades also deliver faster application performance than other servers with 96 GB of memory, according to Mitchell. The company has ordered Cisco UCS B250 M1 blades with 384 GB of memory, which it will use to virtualize applications requiring more memory.

Support for Lean Processes

Slumberland actively looks for ways to use IT to make processes more efficient. For example, the company recently developed an electronic document capture and transmission to accelerate the approval of customer financing, saving hundreds of thousands of dollars annually. The Cisco UCS supports innovations like this because the company can very quickly provision new servers to use for development and quality assurance. "If we want to copy the production system for use as a quality assurance system, we can do it much faster with the Cisco UCS," says Mitchell. "Overall, we have greater business agility."

PRODUCT LIST
Data Center
• Cisco Unified Computing System
• Cisco MDS 9500 Multilayer Director

Next Steps

The IT department expects to increase its return on investment from the Cisco UCS in the following ways:

- **FCoE:** When Slumberland's SAN vendor introduces native FCoE support, the IT department plans to connect the Cisco UCS directly to the SAN, simplifying the data center and reducing equipment costs.
- **Enhanced disaster recovery:** The company currently replicates SAN volumes to a secondary data center. After Slumberland deploys another Cisco UCS in the secondary data center, disaster recovery will be faster, because the IT department can use Cisco UCS service profiles to automate server configurations. In addition, Slumberland will not need to maintain specialized hardware in the secondary data center for certain applications, because any application can operate on the Cisco UCS.
- **More memory:** Slumberland will virtualize its remaining applications after installing new Cisco UCS B250 M1 blades with Cisco Extended Memory technology, which provide 384 GB that certain applications need to perform optimally in a virtualized environment.

Mitchell concludes, "Slumberland has a strong relationship with Cisco that spans unified communications, networking, security, and wireless. We regard Cisco as a trusted advisor. We have confidence in the Cisco UCS, because Cisco has the commitment and the resources needed for success."

For More Information

To find out more about the Cisco Unified Computing System, visit: http://www.cisco.com/go/ucs.

To find out more about Cisco Data Center 3.0 solutions, visit: http://www.cisco.com/go/datacenter.