

Energy Management Firm Builds Dynamic, Scalable Data Center



Executive Summary

Customer Name: Comverge

Industry: Energy Management

Location: Norcross, Georgia

Number of Employees: 560

Challenge:

- Overcome scalability limitations of physical servers
- Accelerate server provisioning to scale in unison with customer field deployments
- Help ensure resilient operations with geographic redundancy

Solution:

- Cisco Unified Computing System provides horizontal and vertical scalability
- Cisco B-Series Blade Servers offer high memory density on small footprint
- Cisco ASA 5500 Adaptive Security Appliance delivers robust security

Results:

- Saved as much as US\$200,000 in VMware licensing costs
- Reduced rack servers from 25 to 6
- Gained more scalable, reliable, resilient architecture

Comverge uses Cisco Unified Computing System to power analysis of growing Smart Grid data and better serve customers.

Challenge

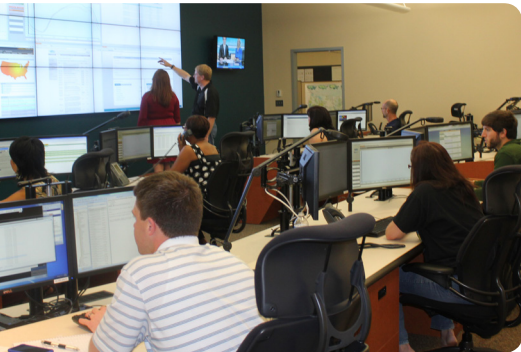
Founded in 1980, Comverge grew out of a merger of technology groups from Scientific Atlanta, Lucent/Bell Labs, and PowerCom. More than three decades later, the company has leveraged its deep understanding of the energy industry (and the technology that drives it) to become a leading provider of intelligent energy management solutions. For Comverge's utility, commercial, and industrial customers, this means helping them predict and manage energy demand, optimize energy distribution along the grid, increase reliability, and decrease operating expenses.

At the core of all of this activity is Comverge's Network Operations Center. Providing 24-hour support, this data center is staffed with energy analysts and engineers, who help customers manage and execute their energy consumption strategies. However, with 3700 megawatts of energy under management, more than 500 utility and 2100 commercial customers, 5 million deployed residential devices, and double-digit growth, Comverge recently found itself bumping up against the limits of its physical server-based environment.

To gain the scalability and flexibility that it needed, the company knew that a new primary data center was necessary, and that virtualization would be a cornerstone of the new infrastructure. "In the past, our hosted application system resided on physical servers, which limited us in terms of scalability," says Greg Allarding, vice president of network operations at Comverge. "We needed an environment that would allow us to scale much more quickly horizontally within existing customer environments as well as grow the business by adding new customers."

“If you break down the licensing per core, it’s cheaper to license VMware on Cisco UCS than on other systems... this has resulted in a cost savings of between \$150,000 and \$200,000.”

– Greg Allarding
Vice President of
Network Operations
Comverge



Solution

With a freshly rewritten application portfolio and a new development framework perfectly suited for virtualization, Comverge began looking in earnest for a data center platform that could scale easily while still maintaining a small footprint and a resilient infrastructure. With the help of IT solutions provider F1 Consulting, the company decided that Cisco Unified Computing System™ (UCS™) was the ideal solution for its new Network Operations Center.

“When it came down to building the primary Network Operations Center in Norcross, footprint and memory density were extremely important,” says Louis Gilbert, systems architect at F1 Consulting. “Comverge needed its blade servers to offer substantially more memory than its competitors’, and the Cisco UCS package gave us that. The Cisco UCS B440 servers provide more cores and a lot more processor per blade.”

In addition, Comverge deployed the Cisco Nexus® 5000 Series Switches and Cisco® ASA 5500 Adaptive Security Appliance to further enhance the infrastructure. “Because Comverge’s application is exposed to the Internet, it was critical to protect the egress into the DMZ [demilitarized zone],” says Gilbert. “We implemented Cisco ASAs to provide the comprehensive security the company needed.”

Today, Comverge’s data center runs VMware ESX with vSphere. An Ubuntu Linux application and database and batch-processing servers run on the virtualization platform, as do Microsoft SQL servers used for telemetry data. As for storage, Comverge went the iSCSI route, which scales extremely well with the Cisco Nexus switches.

Says Allarding, “We believe that the Cisco UCS solution will allow us to run between 600 and 800 virtual machines in a footprint that would have equaled roughly 25 racks fully populated in the old architecture. Soon, we’ll be running that same type of horsepower in the equivalent of six racks.”

Results

An important benefit for Allarding in the deployment of the new Cisco-powered Network Operations Center was the reduced cost of VMware licensing. “If you break down the licensing per core, it’s cheaper to license VMware on Cisco UCS than on other systems,” he says. “Add to that the discounts that are available with the Cisco OEM bundle of VMware, and you begin to recognize substantial savings. For us this has resulted in a cost savings of between \$150,000 and \$200,000.”

Cisco UCS also helps Comverge meet its high service levels. “The use of converged network adapters and the large RAM capacity of the UCS blades make it an ideal solution for running Microsoft applications,” says Allarding. “Cisco UCS allows us to quickly add Microsoft Exchange and Windows Servers as demand or capacity requirements increase.”

With the added customer benefits of multiple nodes, greater redundancy, and higher website availability, Allarding believes that Comverge now has a data center in which infrastructure and network architecture are perfectly matched to the development and operating frameworks of its software.

Product List

Data Center Solutions

- Cisco Unified Computing System (UCS)
 - Cisco B440 Series Blade Servers

Routing and Switching

- Cisco Nexus 5000 Series Switches
- Cisco Catalyst 6200 Series Switches

Security

- Cisco ASA 5500 Adaptive Security Appliance

Says Allarding, “There was a day when Comverge was challenged to scale to customer demand due to physical server limitations. But Cisco UCS gives us elastic capacity that is scalable to our needs. Today, our customers get higher capabilities and higher reliability by default thanks to Cisco UCS and our virtualized data center. That really resonates with our customers.”

Next Steps

Not surprisingly, Comverge’s future plans do not stray far from its current operating agenda. “Our objective is to continue to sign additional customers both domestically and internationally,” says Allarding. “That means growing our IT infrastructure footprint, which in turn means more chassis and blades. With Cisco UCS, we know this growth can be accommodated.” What’s more, he knows it can be accomplished at a price point that is within the company’s means. “As we continue to deploy and scale, I expect to be able to run a higher number of servers on a single blade than I can in other environments. From a cost standpoint, this makes Cisco UCS indispensable.”

For More Information

To find out more about Cisco Smart Grid Solutions, visit:

www.cisco.com/go/smartgrid.

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

To find out more about Cisco Nexus Switches, visit: www.cisco.com/go/nexus.

To find out more about Cisco Security solutions, visit: www.cisco.com/go/security.

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