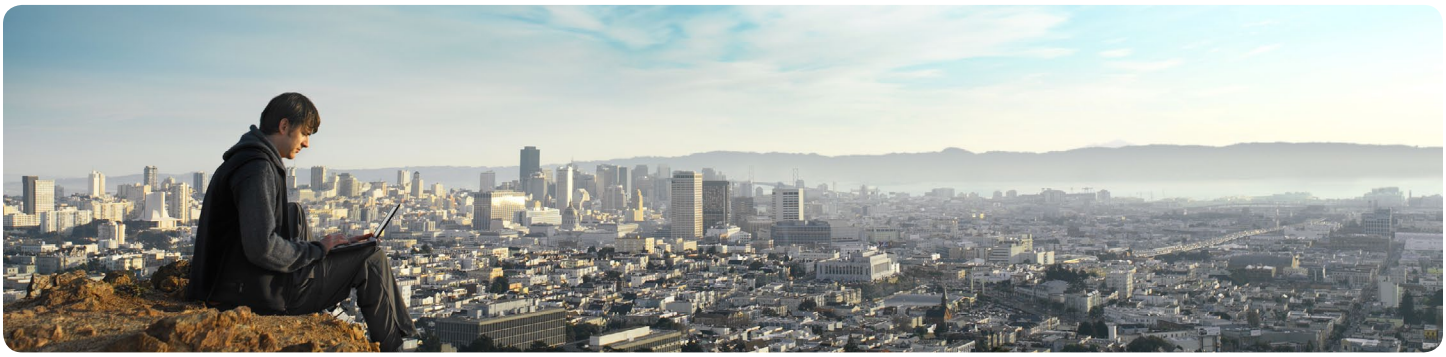
BlueWave Builds Bigger, Better Cloud to Provide Services Faster



Executive Summary

- **Customer Name:** BlueWave Computing
- **Industry:** Cloud services provider
- **Location:** Atlanta, GA
- **Number of Employees:** 150+

Challenge

- Deliver new, high-performance cloud service
- Help enable rapid growth in customer base
- Keep infrastructure and management costs low

Solution

- Implemented FlexPod prevalidated data center solution built on Cisco UCS Servers and Nexus Series Switches, NetApp FAS storage, and complete software bundle components

Results

- Delivers better performance: system responsiveness up 300 percent, latency down 50 percent
- Supports rapid onboarding of new clients by halving time to provision new services
- Saves on management resources and power needs

New FlexPod-based cloud boosts performance three-fold and enables rapid scaling.

Challenge

Businesses across heavily regulated industries, such as financial services, healthcare, and many others, are finding that keeping up with the demands of today's complex IT environments can shift focus away from their core business activities. Small and mid-sized companies especially struggle to invest the time, staff, and other resources needed to build a reliable, high-performance IT infrastructure. Instead, they choose to outsource responsibility for tackling today's biggest IT challenges: skyrocketing data volumes, security concerns, and increasingly stringent government regulations for information tracking and data security.

Cloud services firms, such as BlueWave Computing, assume this daunting responsibility for their clients and make a business of designing and delivering services that satisfy the most exacting business requirements. BlueWave's cloud infrastructure is a highly flexible, multi-tenant environment built for high availability, with cloud clusters that offer the highest level of resource utilization, scalability, and availability with a 100 percent uptime service-level agreement (SLA) supported by the underlying infrastructure.

In the past few years, increased regulations have brought more complexity and, in turn, for firms such as Bluewave, additional business as companies could not meet new requirements on their own. With demand for its cloud-based services doubling every

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— Dan Timko
VP of Cloud Services
BlueWave Computing, LLC

year, BlueWave wanted to expand even more aggressively by offering its services as a cloud backend for Independent Software Vendors (ISVs) and their software as a service (SaaS) programs nationally. To position itself for that growth, the company also undertook initiatives to expand its compliance with cloud security, International Organization for Standardization (ISO), Payment Card Industry (PCI), and Health Insurance Portability and Accountability Act (HIPAA) standards, and planned to launch a next-generation cloud computing service that greatly accelerated provisioning.

As BlueWave's cloud workload increased and the company brought new services to market, its IT team found itself at the limit of what the company's existing server and storage infrastructure could offer. BlueWave began experiencing issues with storage, performance, and reliability. And as BlueWave teams worked to address the issues, they became frustrated by the lack of integrated support offered by the company's multiple vendors. As a result, the team began searching for a new foundation for its virtual cloud offering, and sought out a unified data center solution supporting the company's next phase of growth.

"The FlexPod platform immediately caught our attention by offering a fully integrated solution that captures best-of-breed technology across trusted vendors Cisco and NetApp, along with alliance partner VMware," says Dan Timko, vice president of Cloud Services at BlueWave. "It's key for both our daily operations and troubleshooting strategies to have a single point of support, because we have 100 percent SLAs that require us to instantly address any possible service interruption and rapidly respond to any customer need."

In addition to the collaborative nature of the vendors supporting the FlexPod platform, the Cisco Unified Computing System™ (UCS™) infrastructure was another major attraction for BlueWave. "Cisco UCS is optimized to run in a virtualized environment, and it has a clear advantage over competing solutions when it comes to speed, reliability, and ease of management," says Timko. "The high-density Cisco UCS infrastructure also offered the ability to scale up our systems more sustainably and profitably."

Solution

BlueWave deployed FlexPod in its primary data center in Atlanta, and is built on Cisco® UCS B230 M2 Blade Servers, a two-socket platform that delivers high performance and density in a compact, half-width form factor and incorporates NetApp FAS storage. Its all-Cisco network infrastructure includes Cisco Nexus 5548 Switch as the core switch for VLAN management and routing and the Cisco UCS 6248UP 48-Port Fabric Interconnect to provide uniform access to both networks and storage. BlueWave is also using Cisco ASA 5500 Series Adaptive Security Appliances (ASAs) for its edge firewalls, Cisco Catalyst® 3750 Switches for its access layer, and Cisco Catalyst 2960 Switches.

The Cisco UCS infrastructure runs a variety of server and database applications vital to enabling BlueWave to serve its clients; supported services and applications include Microsoft SQL Server, DB2, and MySQL databases with clustering, mirroring, and replication. The company also runs VMware ESXi hypervisors, Citrix XenApp, and NetScalers. Plus, business-critical applications, including accounting packages from Great Plains, PCI-compliant payment processing, Microsoft Dynamics CRM, NextGen EMR/EHR, Microsoft Office, Microsoft Exchange, and a wide range of BlueWave's clients' proprietary applications run on the new infrastructure.

The FlexPod platform supports secure multitenancy on Cisco SAFE architecture, NetApp MultiStore technology, NetApp® Data ONTAP® (Coresec Security at Evaluation Assurance Level – EAL2+), and VMware vShield™ Zones, as well as offers streamlined management by leveraging Cisco UCS Manager for easier account management, authentications to LDAP, and role-based access to systems.

Results

BlueWave originally planned to deploy FlexPod as part of a new product launch for vCloud, but ended up accelerating the FlexPod implementation due to issues with its existing blade infrastructure. "Past technology had painted us into a corner, and we needed to deploy a more robust solution much faster than we projected," says Timko. "The FlexPod solution rose to the occasion by getting us up and running quickly. As we continue to build out our new infrastructure, we keep finding new capabilities, incrementally increasing the value of our investment."

An area of particular importance is the dramatic increase in storage performance. Customers have noticed the difference delivered by the more powerful infrastructure. "We were amazed by the numbers we got once we put in FlexPod," says Timko. "We got three times the storage performance of our previous system at its best with half the latency."

Unmatched scalability

As a cloud services provider, BlueWave must continually add capacity to suit the expanding needs of both new clients and established ones. Designed to make scaling up easier and less expensive, the FlexPod platform is a perfect fit with the company's needs. In addition to offering much greater memory density on a small blade, Cisco UCS eliminates the need for multiple switches and fabrics for each blade, replacing them with a single Cisco 6248UP Fabric Interconnect.

BlueWave also appreciates the incremental scalability of UCS, which makes it much less expensive for the company to add more capacity because it does not have to buy a big, expensive chassis, with switches and fiber, every time it needs to scale up. "Scaling becomes cheaper and easier from a labor perspective, because all we need to do in the Cisco UCS model is plug in a new blade, then apply the service profile with UCS Manager," says Timko. Timko notes BlueWave can now onboard customers and increase capacity more rapidly and cost effectively. FlexPod cuts time to provision new services in half because Cisco UCS management software reduces the time to deploy server templates.

Boosting productivity, saving resources

Automating and streamlining management tasks also support scalability because they help BlueWave make the most of scarce human resources. "People who can run these systems are expensive and hard to come by," says Timko. "We need to have as much automation as possible to maximize the value of their time."

BlueWave engineers working on Cisco UCS are enthusiastic about it and appreciate being able to use Cisco UCS Manager to manage the system, from networking to storage. "Service profile templates have been an absolute hit with the team," says Timko. "Our IT team loves UCS Manager, especially the way that they can set up a profile once and then replicate it to new blades. Plus, they like the straightforward cabling design, which, aside from just looking clean, makes setting up a new blade easier and faster than ever."

Product List

FlexPod Components

- Cisco UCS B230 M2 Blade Servers
- Cisco Nexus 5548 Switches
- NetApp FAS3240 Storage System

Routing and Switching

- Cisco Catalyst 3750 Series Switches
- Cisco Catalyst 2960 Series Switches
- Cisco UCS 6248UP 48-Port Fabric Interconnect

Network Management

- Cisco Unified Computing System Manager

Security and VPN

- Cisco ASA 5500 Series Adaptive Security Appliances

BlueWave currently supports its cloud offerings with its internal senior engineering team, but can tap into additional resources as needed. "FlexPod with Cisco UCS enabled us to shift our focus from solving problems to improving our systems and services," says Timko. "I'm looking forward to freeing up my senior staff to get creative with these new technologies. I think they'll come up with some interesting ways of leveraging them to make our services even better and to support our goal of nationwide expansion."

In addition to saving time and staffing resources, BlueWave is also reducing one of its biggest expenses: power and cooling. "One of the benefits of the density of the FlexPod platform is that we can run more VMs on far fewer blades," says Timko. "We can effectively double the RAM in the system without doubling the power usage, which makes a significant contribution to our bottom line."

Prepare for future

Thanks to FlexPod, BlueWave has completed a highly successful launch of its new vCloud service, which will help the company grow faster, with even more powerful and more secure cloud services.

"In the cloud services market, our success is built on our ability to respond quickly to client demands for new and enhanced services," says Timko. "With Cisco UCS as part of the FlexPod platform, we're better prepared than ever to scale up rapidly with a high-performance and cost-effective service. We're confident that building our cloud offering on this platform will enable us to easily scale to serve clients nationwide."

For More Information

To find out more about Cisco Unified Data Center solutions, go to: www.cisco.com/go/dc, and Cisco Unified Computing Systems at www.cisco.com/go/ucs.
To find out more about BlueWave, go to: http://www.bluewave-computing.com.

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