

Case Study



INDUSTRY

Satellite and broadband service provider

LOCATION

Germantown, Maryland

SOLUTION

Optimized and pre-tested FlexPod™ for VMware® virtual data center design, which includes leading technologies from VMware, Cisco®, and NetApp®

DATALINK SERVICES

- Analysis
- Design
- Implementation
- Support

BENEFITS

- Reduced new server provisioning time from three weeks to just 15 minutes
- Obtained ROI in first six months, surpassing initial 12-month estimate
- Achieved greater efficiency in system deployment, growth, and ongoing management
- Established more comprehensive, more flexible disaster recovery coverage
- Achieved internal success at each phase of a highly complex IT project

Hughes Network Systems speeds server deployment, enhances service levels, and achieves rapid ROI with a virtual data center solution from Datalink.

THE CUSTOMER: HUGHES NETWORK SYSTEMS, LLC

Hughes Network Systems, LLC (Hughes) is the world's leading provider of satellite broadband for home and office, delivering innovative network technologies, managed services, and solutions for enterprises and governments globally. HughesNet® is the number-one high-speed satellite Internet service in the marketplace, with offerings to suit every budget and more than 620,000 subscribers in North America. To date, Hughes has shipped more than 2.5 million systems to customers in over 100 countries, representing more than 50-percent market share.

THE CHALLENGE: SERVER SPRAWL, INEFFICIENT SILOS, AND SLOW DEPLOYMENT OF NEW SERVERS AND APPLICATIONS

As the senior director of systems integration at Hughes North American division's network operations center (NOC) near Washington, DC, Karl Fosburg is charged with improving the efficiency and cost-effectiveness of the NOC's internal systems – from servers to network management architectures and ongoing service monitoring.

In support of continual process improvement, Fosburg began to assess how to drive greater operational efficiency by virtualizing the

infrastructure. With more than 4,500 servers in operation at the NOC, virtualization offered a number of compelling benefits, such as:

- Consolidated servers and improved utilization
- Reduced capital expenses
- Simplified server backup routines
- Improved consistency of server images
- Streamlined timeline for server and application deployment
- Fewer inherent cabling challenges
- Reduced data center footprint requirements

"One of the big problems we had was server sprawl – thousands and thousands of servers in our network with the majority being one-rack servers. It just seemed excessive to me. It led me to start researching server virtualization as a more efficient alternative," Fosburg said. He liked what he'd heard about server virtualization and its ability to speed deployment times and reduce physical server footprints while also making areas like system management easier and more consistent. But he wasn't quite sure of the best approach for the Hughes NOC environment.

One of the big problems we had was server sprawl – thousands and thousands of servers in our network with the majority being little one-rack servers.



THE SOLUTION: PRE-TESTED FLEXPOD FOR VMWARE ARCHITECTURE, BACKED BY THE EXPERTISE OF DATALINK

To proceed, Fosburg knew he needed to guarantee ROI for any virtualization project to Hughes senior management, but he didn't know yet which architecture or mix of software, servers, networks, and storage would offer the best chance for success. Having worked with Datalink for the past few years to support Hughes' many Sun servers and storage, Fosburg also knew Datalink had deep expertise in virtualization. He opted to seek Datalink's guidance in sorting out his architectural options and explaining the various ROI models for virtualization.

"Datalink worked with me for over a year," said Fosburg, recalling the various Datalink meetings and seminars he attended. He liked Datalink's thinking on the subject of virtualization, including the firm's evolutionary roadmap that describes how today's data center could move first from silos to a more dynamic, virtualized platform where servers, network resources, and storage resources would be managed from their own virtual pools. This environment could then ultimately evolve into a highly efficient, private cloud.

"The Datalink team really did a lot of legwork in terms of validation and research for the ultimate solution we chose. We looked at different approaches to virtualization, different designs, architectures, and their drawbacks and advantages – including open source, VMware, and Microsoft® Hyper-V™," Fosburg said. Datalink also helped with research and recommendations on vendor selection for underlying network and storage architectures to support virtualization and the type of dynamic data center Fosburg had in mind.

The solution ultimately deployed by Datalink at Hughes is FlexPod – a pre-tested server, network, and storage architecture tuned specifically for use in virtual data center environments. The FlexPod architecture uses vendor-supported, proven configurations from VMware for server virtualization, Cisco Unified Computing System (UCS) blade servers and 10GbE Catalyst® and Nexus® switches, and NetApp V-Series storage controllers with VMware-centric management features and network file system (NFS) configuration and communication with underlying disk storage.

THE BENEFITS: ULTRA-FAST ROI AND FASTER SERVER DEPLOYMENT

The efficiencies and savings on this project have been significant. Fosburg also expects increased savings as they begin aggressively replacing existing physical servers with their VM counterparts.

ROI ACHIEVED IN THE FIRST SIX MONTHS, SURPASSING EARLY 12-MONTH ESTIMATES

Datalink and Fosburg estimated that it would take one year for the project to break even. The project easily exceeded expectations, recouping the investment in the first six months, and continues to deliver savings today. The key, according to Fosburg's calculations, was the mounting savings in capital avoidance alone. Hughes no longer needed to requisition and acquire so many new physical servers now that new virtual servers could be deployed on the existing Cisco UCS blade server platform. Added to that was the growing savings in electrical power and tech support personnel costs.

NEW SERVER PROVISIONING TIME DROPPED FROM THREE WEEKS TO JUST 15 MINUTES

The Hughes virtual data center also shaved weeks off the time it takes to provision and roll out new servers and applications. According to Fosburg, deploying a new server and application used to take three weeks including requisition paperwork, purchasing, change control processes, and implementation. Today, the same new server deployment request is completed in just 15 minutes after change approval, thanks to the ease of VMware and the flexibility of the FlexPod architecture. Application staging time also decreased dramatically.

The environment now also runs much more efficiently, according to Fosburg. It benefits greatly from higher quality builds using more consistent virtual server images, as well as more comprehensive backups across the board performed with the help of virtualization-aware tools like NetApp SnapManager® for Virtual Infrastructure.

THE OVERALL EXPERIENCE: SUCCESS AT EACH PHASE WITH MORE PLANS TO FOLLOW

Fosburg gave Datalink high marks for its impartial, long-term approach to the project and detailed follow-through – from start to finish. This included coming in without regard to a specific system design or vendor. He also liked Datalink's ability to shield Hughes from direct dealings with vendors. "Datalink was able to act more with Hughes' business interests in mind than just trying to make a big sale and having it fail miserably because we bit off too much in one chunk," he said.

Datalink was also instrumental in helping Fosburg develop and validate a more constrained ROI model that could gain approval from both senior management and senior technical staff. Datalink then ensured preplanning success via ongoing meetings with key Hughes teams regarding upfront power and amperage requirements and the upcoming network design. Once implementation began, the Datalink team encouraged key Hughes support personnel to "shadow" Datalink's solution engineer, ensuring both a successful knowledge transfer and project handoff to Hughes internal staff. This was a welcome change to Fosburg. "I've seen vendors in the past who don't want to have 'shadows' because they might lose professional services business, but Datalink was supportive of that from day one and really pushed us to make sure our people had freed up their time so that they could learn," he said. Datalink also continues to deliver with high-quality, OneCall™ Support Services for any issues.

After experiencing repeated success with the project since its deployment (and fielding interested queries from other Hughes internal teams), Fosburg is now working with Datalink to define a second phase of the project. He describes this phase as a "nice triangle, private cloud environment with geographic diversity," which will likely involve a multisite availability and disaster recovery architecture using FlexPod along with F5 Networks. Such an architecture would enable host applications to be moved quickly and brought online from one site to the next.

Accustomed to living up to its own high standards for excellence, Hughes found a like-minded partner in Datalink for this project. Fosburg and his systems integration team continue to reap the benefits of this successful partnership today and into the future.

Making IT happen

A complete data center solutions and services provider, Datalink helps Fortune 500 and mid-tier enterprises get the most from every IT investment – with storage, server, and network expertise across the infrastructure. We deliver greater business results throughout, designing what we sell, deploying what we design, and supporting what we deliver.

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