

Successful Deployment of Complex Datacenter Modernization



Overview

A global enterprise engaged Lume to modernize its data center infrastructure to support growing virtualization demands, improve operational efficiency, and reduce capital expenditures. The project involved a full-stack refresh of compute, storage, and network layers, with a focus on scalability, performance, and user experience.



The Challenge

- Replace aging infrastructure with a modern, high-performance virtual environment.
- Support over 60 virtual guest servers and more than 150 concurrent VDI users daily.
- Enhance integration with existing Azure infrastructure.
- Implement a resilient and scalable SAN solution.
- Design a network architecture capable of handling complex routing, segmentation, and high-throughput demands.

60+

virtual guest servers

150+

concurrent VDI users daily



The Solution

Lume deployed a robust virtualization environment anchored by a 10-host cluster, each configured with dual Intel Xeon processors, 1TB RAM, and dual SSD-based virtual OS storage. The environment was built on dual cluster VMware hypervisor architecture, one supporting server operations, the other supporting Horizon VDI. VMware was selected for its flexibility and operational efficiency in light of licensing constraints with other hypervisors.

At the core of the storage solution was a newly implemented HPE SAN, leveraging NVMe technology to deliver high IOPS and low latency—critical for the client's database and VDI workloads. The SAN was integrated via 25Gb SFP+ fiber connections, supported by enterprise-grade fiber switches previously validated in other successful Lume deployments.

Upon Implementation

10-host

cluster provides ample headroom for future growth, with modular expansion paths for both computer and storage.

150+

VDI users now experience consistent, high-performance access to virtual desktops.

25GbE

network fabric significantly improved application responsiveness and VDI login times.



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Network Design

The network architecture was designed to accommodate complex VLAN segmentation, secure multi-tenant access, and high-throughput requirements. Redundant fiber uplinks and dynamic routing protocols were implemented to ensure high availability and fault tolerance. The environment also supports seamless integration with external backup and disaster recovery platforms, including Cohesity for BCDR.



The Results

Performance

The NVMe-backed SAN and 25GbE network fabric significantly improved application responsiveness and VDI login times.

Scalability

The 10-host cluster provides ample headroom for future growth, with modular expansion paths for both computer and storage.

User Experience

Over 150 daily VDI users now experience consistent, high-performance access to virtual desktops.

Operational Efficiency

Centralized management and automation reduced administrative overhead and improved system reliability.



Conclusion

This project exemplifies Lume's ability to deliver tailored, high-performance datacenter solutions that align with client goals for scalability, cost control, and user satisfaction. The successful deployment of HPE SAN technology and a 10-host virtual environment demonstrates Lume's expertise in complex infrastructure modernization initiatives.

Are you looking for IT solutions?

Contact us!

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