

SUCCESS STORY

DELIVERING HYPER-CONVERGED INFRASTRUCTURE at St. Mary's College of Maryland



What Data Networks Did for St. Mary's College of Maryland

- Implemented state-of-the-art Dell EMC data storage technology to better support existing virtual infrastructure and replace near-obsolete equipment.
- Added performance and redundancy to network switching to eliminate a single point-of-failure.
- Better-utilized existing technology investments (including VMware licensing) to drive improved value and performance.

Abstract

A new hyperconverged infrastructure solution delivers peak virtualization and data storage for this Maryland-based college.

The challenge

St. Mary's College of Maryland (SMCM) is a liberal arts college located 70 miles southeast of Washington, DC. Boasting several honors undergraduate degree programs and a Master of Arts in Teaching program, SMCM's total student enrollment is approximately 1,700. The college maintains a 10-to-1 student-to-faculty ratio, and more than 80% of its students live on campus.

The SMCM Information Technology (IT) department utilizes virtual infrastructure to support the college's mission. Before engaging Data Networks on this project, SMCM had a VMware vSphere 5.1 architecture deployed using a Dell "3-2-1" infrastructure. Three Dell PowerEdge R710 servers hosted 46 teaching and administrative virtual machines (VMs). The PowerEdge host servers connected to a set of core Juniper switches via a 1GbE Cisco Catalyst 2960-S switch as well as the SMCM DMZ network.

A Dell EqualLogic SAN provided the storage solution and included two Dell PowerConnect 6248 1GbE switches attached redundantly to the PowerEdge hosts and to the storage group. Dell EqualLogic PS4000 and PS6100 SAN arrays comprised the storage group.

The solution

In discussing the situation with SMCM, Data Networks recognized two key concerns, according to Joseph Green, the Data Networks Solution Architect for SMCM. "The EqualLogic SAN arrays had reached end-of-life - Dell was no longer marketing them and would soon no longer support them," explained Green. "In addition, the Cisco Catalyst switch connecting the VM infrastructure with the core network was a single point-of-failure. We needed to swap out the storage group with something sufficiently powerful yet budget-friendly and give SMCM some redundancy in their switching."

Data Networks proposed and SMCM agreed upon a virtual infrastructure improvement project, and they formed a joint team to plan and complete the project.

Specific project objectives included:

- Replace the EqualLogic PS4000/PS6100 combination with four Dell EMC VxRail all-Flash appliances (taking advantage of the completion of the Dell-EMC merger).
- Augment the single Cisco Catalyst switch with additional Juniper 10Gbps uplink modules.
- Leverage as much of SMCM's existing technology investments as possible, especially its committed VMware licensing and core Juniper switching.

VxRail is SMCM's initial adoption of hyper-converged infrastructure. This benefits the college in several ways: using just a single console for data center control and VM administration (with fewer new administration tools to learn), linear scalability of virtualization as growth dictates, and greater consolidation ratios so that SMCM's VMware licensing investment is maximized.

Moreover, adding the uplink modules to existing networking in support of VxRail not only provides redundancy for the Cisco switch, but also is a much more cost-effective solution than upgrading or purchasing one or more Cisco switches due to Juniper's virtual chassis capability.

Data Networks engineers proceeded to install the required 10Gb modules between the Cisco Catalyst and core Juniper switches at the project's outset. From there, Data Networks began to execute the SAN array conversion using a prepared checklist designed by their engineers specifically for VxRail deployments. This effort included physical installation of the VxRail appliances, configuration of all communication ports and networking protocols in consultation with Dell EMC Support resources, and transfer of all application and workflow software licenses from the EqualLogic devices. The project took only one week to complete and Data Networks engineers moved the new VxRail appliances into production and shut down the EqualLogic storage group over a weekend without incident.

The result

Since going live with VxRail hyper-converged virtual architecture, virtual machine (VM) usage and administration performance has been excellent. According to Chris Burch, SMCM's Assistant Vice President of Information Technology, "Because of our partnership with Data Networks, we're benefiting from a significant increase in VM administration throughput, as measured in workloads. Our new VxRail's all-Flash configuration is expected to deliver peak virtualization and data storage for us over a solid lifespan of more than five years. At any time, we can easily expand our VM usage and data capacity to suit our teaching and administrative support needs."

About Data Networks

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INNOVATIVE TECHNOLOGY

By partnering at the highest levels with the industry's most respected manufacturers, Data Networks can deliver the right products for your environment with the most aggressive pricing possible. Our strong vendor relationships also bring technical training opportunities, expedited help desk resources, and professional service liaisons for consulting and project engagements.

INSPIRED ENGINEERING

Our goal is to be your trusted technology advisor. So we staff highly-qualified engineers who bring years of experience and the most advanced technical certifications to every engagement. We assign them a single area of technical focus, a unique approach that allows them to continually update their skills and expand their specialized technical knowledge. And we arm them with documented best practices developed over more than 30 years of public-sector service.

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