DELL Technologies

SOLUTION BRIEF

DELL NETWORKING SMARTFABRIC FOR VXRAIL

Dell Technologies extends the simplicity, efficiency and agility of VxRail to HCI Network Fabrics with SmartFabric OS10

There is a clear need for **a different approach to deploying scalable fabrics capable of supporting extreme data consumption and HCI**.

The next generation hyperconverged infrastructure needs to overcome the current issues of manageability, scalability, and efficiency by looking towards an open infrastructure concept — while also reducing costs and lowering innovation risks.

Read on to learn more about Dell Technologies' approach to simplifying HCI Network Fabrics with **SmartFabric Services**.

Introduction

As companies race to keep pace with aggressive growth and the need to modernize IT infrastructures, the rapid adoption of hyperconverged infrastructure (HCI) in core datacenters and across the edge plays a key role in digital transformation initiatives. Network infrastructure is critical for the high performance access, delivery, and response times needed to lead in today's business marketplace. However, the network continues to be prone to configuration and management issues that affect the speed of transformation.

Dell Networking and VxRail are driving products and solutions by offering a well-engineered solution for the software-defined enterprise that can deliver both operational and infrastructure efficiencies that were previously unavailable. With VxRail and Dell Networking SmartFabric OS10, the process of fabric creation, administration and operation is now greatly simplified with automation, reducing the risk of misconfiguration at the same time.

A Simple and Consistent Distributed Enterprise with Dell EMC VxRail

Realizing the benefits of HCI, IT organizations have started to deploy in all areas of the business, from the remote branch office to the central data center. Key to this adoption are agility, simplicity, modernization, and scalability.

Dell EMC VxRail is the only fully integrated, preconfigured and pre-tested VMware HCI solution on the market. Based on VMware's vSphere, vSAN and VxRail HCI System Software, VxRail systems deliver a turnkey IT infrastructure transformation.

Dell EMC Fabric Solutions for HCI

As hyperconverged clusters scale, the network fabric becomes critical to a successful deployment. Dell EMC fabrics deliver:

- **On-demand scalability:** to remain competitive, the modern data center requires the capability to dynamically grow based on business requirements. Together, Dell Networking switching fabrics and VxRail provide an intelligent and capable architecture that scales on demand and increases the efficiency of the data center.
- **Increased availability at scale:** robust and redundant fabrics and storage are an absolute necessity for today's data center. A single failure should not cause a full-service interruption.

Dell EMC SmartFabric Services

SmartFabric Services is a “one-of-a-kind” feature, part of the Dell EMC SmartFabric OS10 flagship networking operating system. It creates a fully integrated solution between the fabric and VxRail hyperconverged cluster infrastructure.

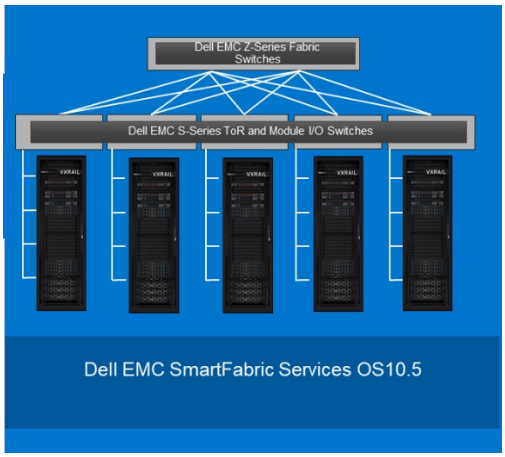

Figure 1 – Dell EMC SmartFabric Services for VxRail

With SmartFabric Services, customers can quickly and easily deploy and automate data center networking fabrics both within a single rack or between multiple on-site racks and multiple clusters. SmartFabric services only require customers to perform a single configuration step per switch, automating over 99% of multiple leaf and spine configuration steps per rack, providing elastic network provisioning, tightly integrating with the VMware ecosystem and delivering an enhanced support experience.

Dell EMC Fabric Validated Deployment Guide

Along with Fabric Design Center, Dell EMC offers a complete portfolio of scalable networking solutions for VxRail appliances, validated deployment guides, choice of operating system, and industry standard features to ensure interoperability and investment protection. Customers wishing to explore highly customizable fabric deployment can leverage the various validated deployment guides certified through proven best practice guides and engineering solution qualifications.

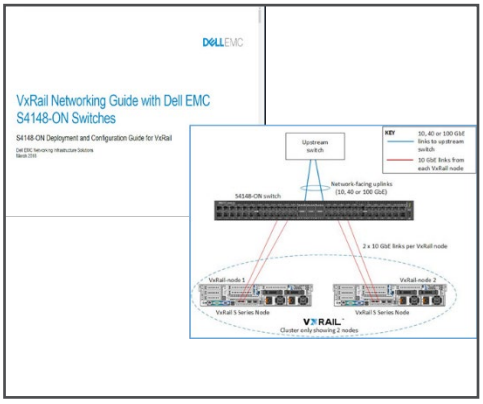

Figure 3 – An example of a Dell EMC Validated Deployment Guide

The Value of SmartFabric Services

- Significantly simplify complex single and multi-rack deployments across multiple VxRail clusters
- Flexible topology for multi-rack deployments
- Greatly reduce the time and cost to deploy, scale and adapt networks for a VxRail environment
- Reduce risk of network configuration errors
- User-friendly network management via single pane of glass leveraging existing VMware tools and OMNI plugin
- Enhanced support experience with single vendor support
- Flexibility to add non-VxRail nodes into the fabric

SmartFabric Services for VxRail automates

99%

of network configuration steps for leaf and spine switches across multiple racks and VxRail clusters

Dell EMC Open Manage Network Integration (OMNI) for VMware vCenter

The Dell EMC OMNI is an efficient REST API based plug-in, integrated with VMware's vCenter whose primary objective is to enable vCenter to easily deploy and manage a large virtual network of VMs and physical underlay on a VxRail HCI stack. With Dell EMC OMNI, day two operations and management of the hyperconverged fabric is a breeze. With the capability to provide visibility into the virtual environment and dynamic infrastructure configuration deployment, OMNI is key to the overall Dell EMC fabric umbrella portfolio.

In addition to OMNI, VxRail Manager complements day-to-day operation with all virtualization management done within the familiar vCenter Server interface. This results in all day-to-day operations for Dell Networking, VxRail, and virtualization management all taking place within the vCenter Server interface. Additional IT and Cloud automation can be provided with optional software like VMware's vRealize Operations and vRealize Automation allowing you to seamlessly integrate VxRail as the foundation of your data center infrastructure.

Dell EMC Fabric Building Blocks

With a full range of 10/25/40/50Gigabit and 100Gigabit Ethernet data center switches plus a distributed architecture, Dell EMC delivers a highly scalable purpose-built fabric for leading virtualization environments including hyperconverged infrastructure.

At the spine, our high-performance Z-series 100GbE switches provide optimum inter-hyperconverged cluster communication. At the top-of-rack, our small-med-high density S-series 10/25GbE switches provide an efficient 10GbE-to-25GbE evolution path for the single hyperconverged cluster.

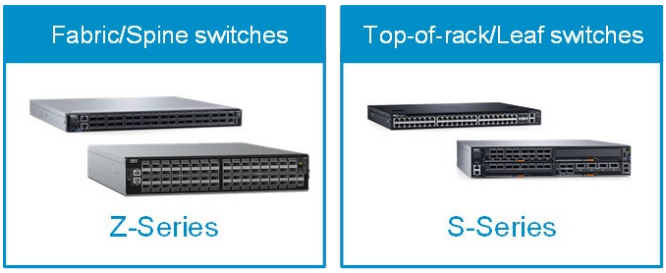

Figure 4 – Dell EMC Fabric Hardware Blocks

Dell Technologies Services

Organizations deploying solutions based on Dell EMC Open Networking are never alone: Dell Technologies provides a comprehensive set of deployment and support options covering the entire lifecycle of the enterprise IT investment.

Services such as planning and design, deployment and integration, and education are just a few offerings within a comprehensive set of customer services available. Dell EMC ProDeploy and ProDeploy Plus provide full service installation and configuration of both hardware and system software by certified deployment engineers. Dell delivers single vendor support, eliminating the usual headaches encountered when dealing with a multi-vendor solution.

Summary

Dell Technologies can and wants to be a partner on our customers' digital transformation journey. Whatever the size of your organization, Dell can help by providing solutions that are:

- **Purpose-built**: our purpose-built Open Networking product portfolio is optimized for I/O intensive networking workloads and traffic patterns.
- **Future-ready**: Dell EMC fabrics span from 10GbE through 100GbE.
- **Validated**: our production-ready solutions are tested and validated.
- **Supported**: global secure supply chain and support services ensure deployments of any scale virtually anywhere in the world.

Learn more about Dell Networking and Dell EMC VxRail at DellTechnologies.com/VxRail.