

ESG SHOWCASE

Dell EMC Smart Fabric Director: The Key to Simplifying and Optimizing Modern Networks

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Introduction

Organizations are embarking on digital transformation initiatives and modernizing their applications and infrastructure. A significant part of modernizing infrastructure involves creating private clouds in on-premises data centers to support hybrid cloud environments. These new cloud environments enable organizations to be far more agile, deliver better experiences, and enhance operational efficiencies. It is critical for digitally transformed organizations to implement management solutions that enable their networks to keep pace with rapidly expanding and highly virtualized environments.

Organizations Strive to be More Operationally Efficient

ESG research verifies that organizations are embarking on digital transformation initiatives, and that one of the top goals of their transformation efforts is to become more operationally efficient.¹ This shouldn't come as a surprise, as organizations struggle to deal with the complexity of these new, highly distributed, and virtualized IT environments that span data centers, clouds, and even the edge. In addition, the vast majority of organizations surveyed by ESG report being under pressure to develop and launch new products and services faster.² Accordingly, this also means that IT needs to be able to provision and configure new services faster and ensure they remain optimized, not only when built, but over time as well. Until now, network admins have struggled to effectively simplify and optimize modern virtual (overlay) and physical (underlay) networks in an effective manner.



86%

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Dell EMC Smart Fabric Director Drives Operational Efficiency in Modern Network Environments

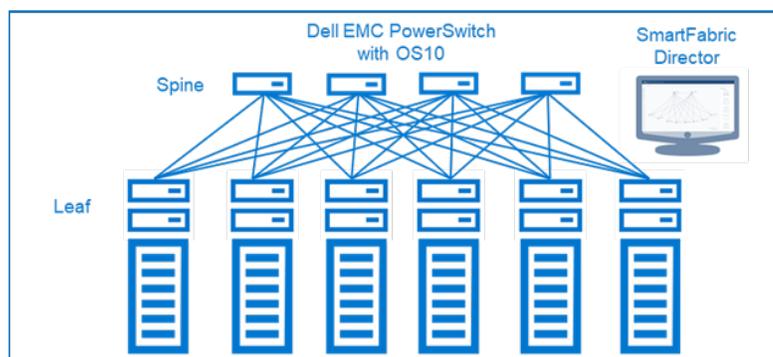
To streamline the data center network environment and become more agile, organizations have been simplifying their physical network architectures from three-tiers to a two-tier leaf and spine configuration. While this dramatically simplifies

¹ Source: ESG Master Survey Results, [2020 Technology Spending Intentions Survey](#), January 2020.

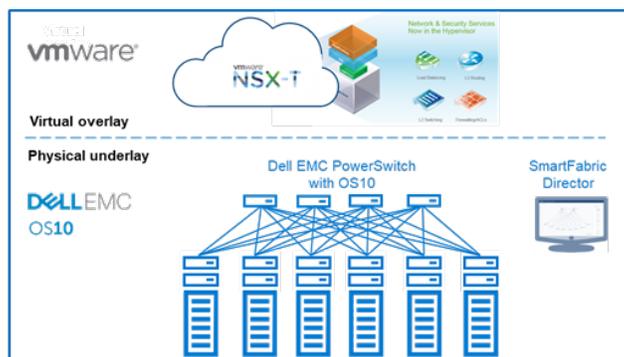
² Source: ESG Master Survey Results, [Trends in Modern Application Environments](#), December 2019.

the network environment, organizations with large deployments find that they are still time consuming and can be error-prone. The goal is to take minimal user input, essentially what most now call “intent,” and be able to automatically provision the new fabric. To provide some context, manually provisioning a data center network composed of four spine and six leaf switches can require almost six thousand CLI commands that have to be programmed manually. This not only could take a significant amount of time, it can also be error-prone, which could further delay deployments.

Key Dell EMC Smart Fabric Director Use Cases



Data Center Network with bare-metal and VMware vSphere with BGP-EVPN overlay



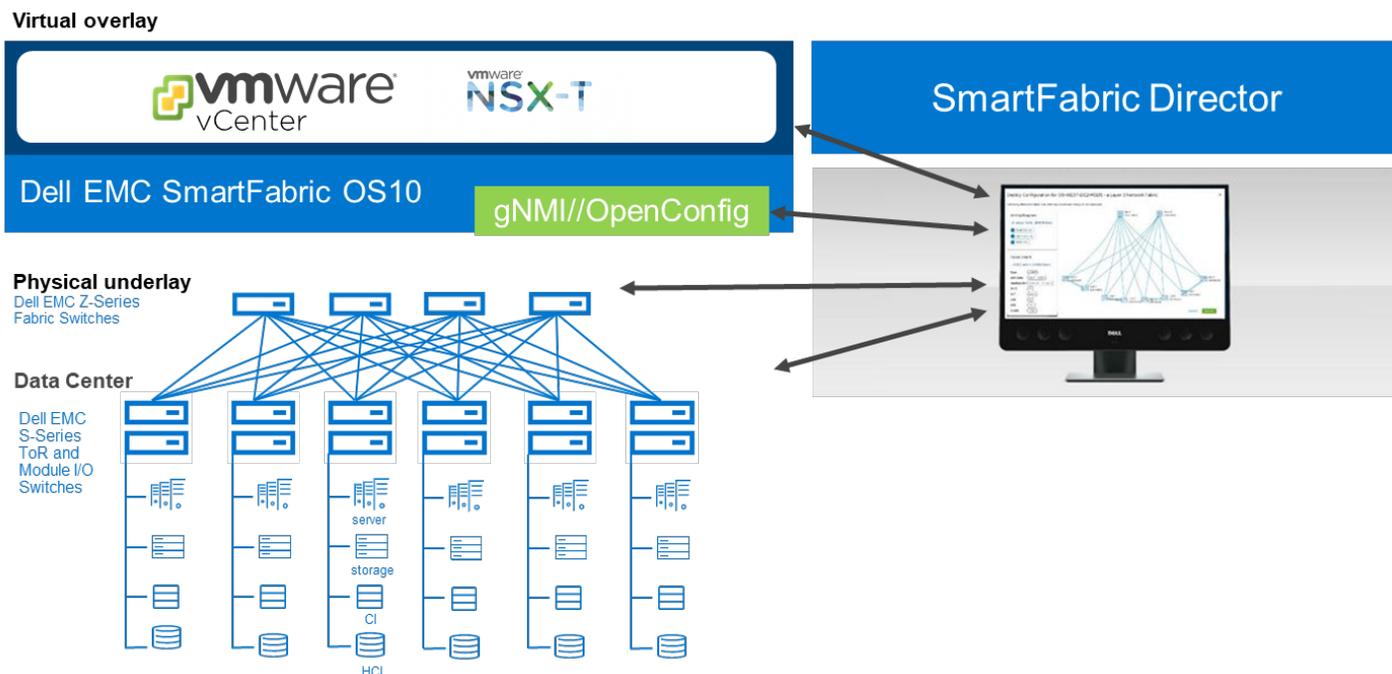
Data Center Network with NSX-T overlay

Fortunately, Dell Technologies’ Dell EMC Smart Fabric Director is now able to automate organizations’ configuration of data center networks. Dell Technologies claims it only requires three steps to create a fabric; this level of automation will dramatically reduce deployment times to as little as a few minutes. In addition, the automation will eliminate manual errors or misconfigurations typical in large scale roll-outs. While some organizations leverage third-party automation tools to help deploy networks, their value tends to end with the deployment. However, that is not the case with the SmartFabric Director. It is a fabric automation solution that also aggregates streaming telemetry from the fabric. The ability to collect telemetry enables use cases such as monitoring, troubleshooting, and capacity planning—key to day two operations in modern data centers. Non-disruptive lifecycle management of the fabric switches is also a key day two operations capability of the Smart Fabric Director.

Smart Fabric Director also provides enhanced visibility with the tight integration of virtual overlay networks (NSX-T) and the physical underlay (Dell PowerSwitch). This is a non-trivial task and required the developers from VMware to work closely with Dell Technologies to deliver this critical capability. With so many enterprises already running VMware and using vCenter and vSphere, this new capability will simplify the management of these modern environments. A number of benefits can be attained by tightly integrating the underlay network with the virtualized services running over it, including:

- Automating the mapping of port group VLANs in vCenter to the underlay to ensure traffic arrives at its intended destination.
- Automating new ESXi host connectivity to top-of-rack switches and conversely, automatically clean up any configs when a host is removed.
- Ensuring minimum Maximum Transmission Unit (MTU) for encapsulated NSX traffic. Any time the NSX-T template is used, the Smart Fabric Director will ensure proper MTU configuration across the network and provision the appropriate VLANs.

VMware and Dell Technologies ‘Better Together’



Essentially, the Smart Fabric Director ensures a bulletproof underlay fabric to optimize NSX-T deployments.

The Bigger Truth

For organizations using, or planning to use, VMware NSX-T that would like to have enhanced levels of visibility and automation between their virtual and physical network infrastructure, Smart Fabric Director will deliver the requisite functionality.

This release is also a concrete example of how VMware and Dell Technologies’ “better together” capabilities can deliver value. In this case, VMware and Dell Technologies engineers codeveloped the code and ensured a tight integration.

As organizations continue to invest in digital transformation initiatives, they require tools to help drive greater operational efficiencies. The Smart Fabric Director provides organizations the ability to rapidly configure a physical data center fabric and significantly enhance the operational experience when supporting highly virtualized network environments like VMware’s NSX-T.

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