Virtualization and cloud architectures have enabled organizations to move toward an environment that creates greater flexibility while meeting evolving and dynamic business needs. At the same time, server virtualization and cloud architectures have transformed the deployment and management of IT resources, leading to operational efficiency and business agility.

However, organizations deploying cloud architectures can experience roadblocks to achieving the benefits of virtualization and the Software-Defined Data Center (SDDC) when faced with the limitations of legacy networks. The inability to build multi-tenancy at scale, while also lacking the flexibility for Virtual Machine (VM) mobility and optimization for east-west traffic, hinders the very benefits organizations seek to achieve. Add to that the need for evolutionary solutions to ensure cloud architectures capable of leveraging virtual and hardware resources, and the challenge is clear: In order to take advantage of the operational efficiencies and increased agility offered by virtualization and cloud architectures, the network must transform to support this environment.

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BROCADE AND VMWARE PROVIDE INTEGRATED NETWORK VIRTUALIZATION FOR PHYSICAL AND VIRTUAL ASSETS

With the introduction of Brocade® VCS® Fabric technology, many of the network challenges created by virtualization have been solved. By increasing flexibility and IT agility, VCS Fabric technology enables organizations to transition smoothly to elastic, mission-critical networks in highly virtualized data centers.

Brocade and VMware have partnered to help organizations realize the promise of the SDDC. VMware NSX is the leading network virtualization platform that delivers the operational model of a VM for the network. Similar to VMs for compute, virtual networks are programmatically provisioned and managed independent of underlying networking hardware. NSX reproduces the entire network model in software, allowing diverse network topologies to be created and provisioned in seconds. The joint solution removes the roadblocks to achieving the benefits of virtualization and cloud architectures. Together, Brocade VCS Gateway and VMware NSX unify virtual and physical infrastructure while providing customer choice with the ability to support both overlay-based and native fabric-based solutions.
Through Brocade VCS Gateway for NSX, Brocade provides a solution that leverages both virtual and physical architectures for a seamless transition to cloud architectures. Brocade VCS Fabric technology, delivered on Brocade VDX switches, enables the highest levels of Ethernet fabric resilience, automation, and scalability for data center environments, solving the latency limitations of data center networks based on classic Ethernet with a fabric that is self-forming, self-aggregating by design, and ideal for cloud architectures. VCS fabric-based functionality—such as multi-layer, multi-pathing, and logical chassis—provide the critical foundation for cloud deployments.

By unifying physical and virtual networking, VMware NSX and Brocade VCS Gateway enable the connection of physical devices to the virtual overlay network, providing data center operators a unified network operations model for all application types. By leveraging Brocade VCS Fabric technology, VXLAN supports the creation of large numbers of virtual domains above existing networks. This enables organizations to efficiently use their current infrastructure while leveraging the benefits of VXLAN to support multi-tenancy and large-scale deployment of applications and VMs.

VMware NSX paves the way for enterprises to rapidly deploy networking and security for any application, non-disruptively, by enabling the fundamental abstraction of networks from networking hardware—creating the virtual network. VMware NSX provides a full-service, programmatic, and mobile virtual network for VMs when deployed with Brocade VCS Gateway for NSX. In addition, resiliency delivered at the gateway level using VCS Fabric technology is essential for mission-critical applications.

Together, Brocade and VMware help customers leverage the promise of the SDDC to help unleash the power, intelligence, and analytics of networks with a flexible, end-to-end solution. By using networking technologies more effectively when migrating toward highly scalable, simplified, and automated virtualized infrastructures, Brocade VCS Gateway and VMware NSX unify virtual and physical infrastructure for a seamless transition to cloud architectures.

**Figure 1.**
Brocade VCS Gateway and VMware NSX unify virtual and physical infrastructure.

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