SOLUTION BRIEF

SIMPLIFYING NETWORKED STORAGE WITH DELL AND CISCO

Dell EqualLogic™ PS Series SANs and Cisco Catalyst switches can help simplify data center operations through the following attributes:

- Simple network administration
- Cost-effective deployment and operation
- Connection resilience
- Seamless scalability of capacity and performance

DELL AND CISCO SIMPLIFY DATA CENTER OPERATIONS WITH ISCSI

In many cases, storage resources can provide an excellent starting point for cost control efforts. Disk resources dedicated to individual departments or applications often sit underutilized or idle, and yet cannot easily be allocated to other purposes. Data protection and disaster recovery processes and procedures are distributed across myriad server, storage, and software resources, which can limit economies of scale and put data at greater risk. iSCSI SANs allow IT managers to deploy server and storage resources more flexibly to best meet the needs of the enterprise.

ISCSI ENABLES A UNIFIED DATA CENTER FABRIC

First presented at the Internet Engineering Task Force (IETF) in March 2000, iSCSI is a standard access protocol for linking servers and storage using an IP-based network interconnect. iSCSI allows enterprises to leverage existing networking skills and infrastructure to create a shared storage environment that delivers high performance, manageability, ease-of-use, and seamless scalability. As an industry standard based on TCP/IP, iSCSI offers stability, broad market adoption and active development support, while removing the need for costly domain specialization. High-performance Cisco® Ethernet switches attach the iSCSI devices to servers to provide fast access to storage for applications. This combination of high-performance Cisco Catalyst switches and Dell EqualLogic iSCSI arrays can provide IT departments with the ability to pool unused storage capacity, provision it on the fly as needed, and make changes non-disruptively, in live production environments.

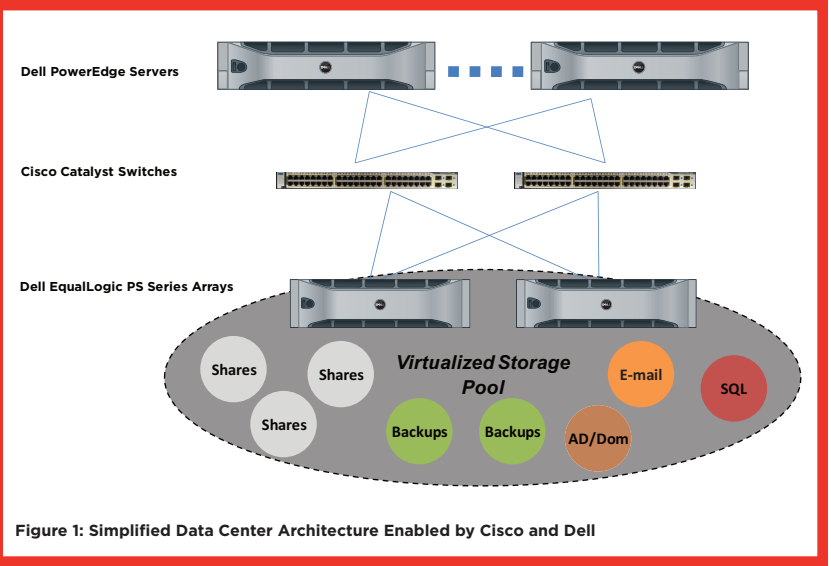

Figure 1: Simplified Data Center Architecture Enabled by Cisco and Dell

iSCSI allows IT departments to use a single transport protocol for computer and storage resources today, whether these resources are collocated or distributed across a LAN or even a WAN. Moreover, as Data Center Ethernet (DCE) gains traction, its support for low latency, lossless networking, Equal-Cost Multi-Path Routing (ECMP), congestion management, TRILL-based path determination, and Data Center Bridging Capability Exchange Protocol (DCBX) will further enhance iSCSI SAN implementation, while simultaneously allowing enterprises to use iSCSI and Fibre Channel networked storage technologies side-by-side. Dell and Cisco are both involved in DCE standards development, actively seeking new opportunities for removing complexity from enterprise data centers.

PERVASIVE VIRTUALIZATION TO MEET ENTERPRISE DEMANDS

Dell and Cisco share a common approach to virtualization, abstracting a logical view of the infrastructure from the physical view to mask underlying complexity for productivity gains. In the storage domain, the Dell EqualLogic architecture leverages the virtualization primitives designed into the iSCSI protocol, to automate load-balancing across multiple storage tiers, enable seamless scaling of performance and capacity, centralizing storage and simplifying data management. Similarly, Cisco leverages its IP expertise in the networking domain to automate tasks — such as multihoming, interface management, and traffic and network segmentation — involving physical network components. These virtualization innovations serve the greater goal to simplify operations, optimize performance, improve system scalability, better protect critical data, and reduce overall total cost of ownership (TCO).

As 10 Gbit Ethernet and DCE technologies mature, Dell and Cisco will continue to respond creatively to the growing demand for simpler data center architectures, leveraging virtual technologies pervasively, and optimizing across integrated server, storage and network infrastructure layers.

NETWORKED STORAGE FOR CURRENT SAVINGS AND FUTURE GROWTH

The benefits afforded by simplified networked storage can improve operational efficiency today with the ability to scale for growth tomorrow. A networked storage solution that simplifies operations can provide long-term strategic advantage as well as short-term cost savings.

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