Cisco Desktop Virtualization Solution for EMC VSPEX with VMware View 5.1.2 for 500 and 2000 Desktops

Solution Brief
June 2013

In Collaboration with EMC and VMware

Highlights

Reduced-Cost Approach

- The solution's simplified infrastructure plus outstanding virtual machine density reduces both capital and operating expenses for lower initial costs and reduced total cost of ownership (TCO)

Reduced Risk

- Cisco has engaged the EMC VSPEX program to produce configurations that are presized and prevalidated to reduce risk and accelerate deployment
- These solutions are designed to be highly available and reliable, helping ensure continuous application access

Rapid Deployment

- Using the Cisco Unified Computing System™ (Cisco UCS®), VMware View, and EMC VNX Family storage, the solutions provides intelligent infrastructure that is ready out of the box

Excellent Performance

- These solutions use a balanced approach to resources, including high-performance Intel® Xeon® processors, 20 Gbps of I/O bandwidth per server, and EMC VNX 5300 Family storage

Choice of Storage Network Model

- These solutions offer the option of connecting to the versatile EMC VNX5300 storage either using Network File System (NFS) or Fibre Channel

Cisco has engaged the EMC VSPEX program to deliver presized and prevalidated solutions to radically simplify virtual desktop deployment in small and medium-sized businesses.

IT departments are inundated with user demands for wider mobile access, greater choice of computing devices, and more flexible work models. IT is also challenged by limited budgets and resources and delivery of services that demand continuity, compliance, and security. For these reasons, many IT departments are looking to desktop virtualization, or virtual desktop infrastructure (VDI), to address these demands. Gartner's 2012 hosted virtual desktop (HVD) forecast (June 2012 Update) estimates that more than 77 million new virtual desktops will be deployed by 2016. Desktop virtualization centralizes the management and maintenance of user desktops and data, which accelerates new desktop deployment, application and operating system migration and patching, application rollout, and increases end-user efficiency. However, traditional desktop virtualization deployments present

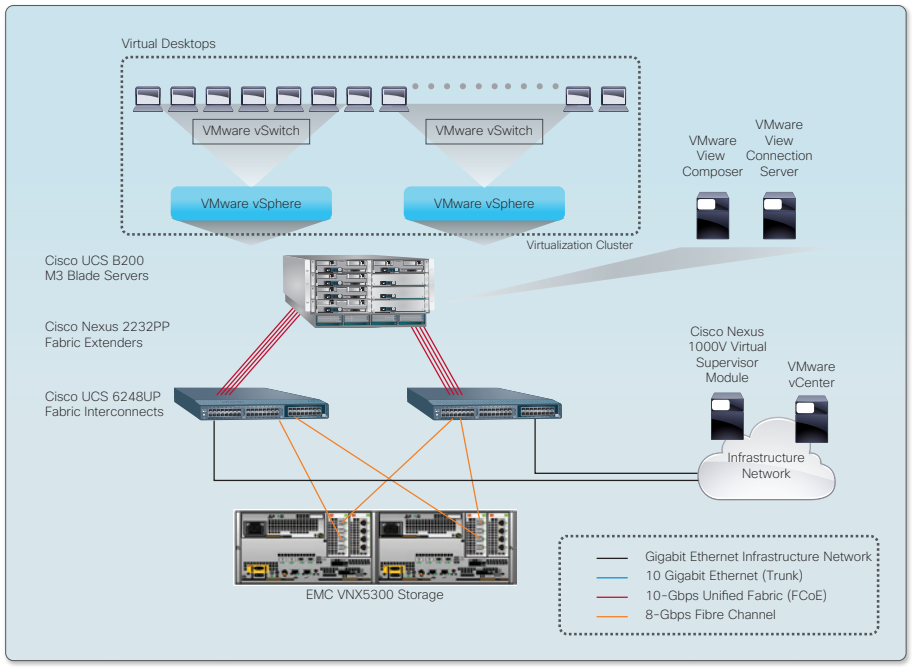

Figure 1. Solution Architecture to Support 500 VMware View Virtual Desktops

some challenges that stress data center and networking infrastructure, such as login storms when many users login at the same time, shared storage use patterns that create bottlenecks, and workload spikes that overwhelm the CPUs and memory.

In response to these challenges, Cisco has presized and prevalidated two sets of bundled solutions deploying virtual desktop infrastructure for VMware View under the EMC VSPEX program. These solutions integrate all the components necessary to quickly deploy virtual desktops, according to business needs. The Cisco® Desktop Virtualization Solution for EMC VSPEX with VMware View is just one of the many desktop virtualization solutions available from Cisco.

Support for 500 Virtual Desktops

With support for 500 to 600 virtual desktops, this solution is designed to provide an extremely cost-effective, low-risk entry into desktop virtualization (Figure 1). These solutions, with single-wire management, provide simplified physical setup and centralized management, with resiliency and rapid provisioning when new capacity is required.

Choice in Deployment

Two blade server options are available (Table 1), and vary only in how the versatile EMC VNX5300 storage is connected to the solution's Cisco UCS® 6248UP 48-Port Fabric Interconnects. One solution offers Network File System (NFS) connectivity, and the other offers Fibre Channel connectivity. The Cisco UCS fabric interconnects' universal ports allow direct connectivity to either 10 Gigabit Ethernet networks or Fibre Channel SANs.

Table 1. 500 Virtual Desktop Solution Components

Element	Blade Server-Based Fibre Channel Solution	Blade Server-Based NFS Solution
Software	VMware View 5.1.2	
Computing	5 Cisco UCS B200 M3 Blade Servers, each with: • 2 Intel Xeon processors E5-2690 (8 cores each) • 256 GB of memory • Redundant power supplies • Cisco UCS Virtual Interface Card (VIC) 1240 1 Cisco 5108 Blade Server Chassis	5 Cisco UCS B200 M3 Blade Server, each with: • 2 Intel Xeon processors E5-2690 (8 cores each) • 256 GB of memory • Redundant power supplies • Cisco UCS VIC 1240 1 Cisco 5108 Blade Server Chassis
Networking	• 2 Cisco UCS fabric interconnects • 2 Cisco UCS fabric extenders	• 2 Cisco UCS fabric interconnects • 2 Cisco UCS fabric extenders
Storage	EMC VNX5300 storage • 2 storage controllers • Redundant Fibre Channel modules • 3 100-GB flash drives for Fast Cache • 15 600-GB SAS drives for virtual desktops • 2 600-GB SAS drives for expansion	

Industry-Leading Solutions

All options feature industry-leading boot, login, and start-work times, without exhausting system resources. These solutions offer economical entry points into desktop virtualization with shared storage. They are excellent for small deployments or remote and branch-office deployments.

Support for 2000 Virtual Desktops

The second solution delivers a cost-effective scalable platform with support for up to 2000 virtual desktops. Combining the power of Cisco Unified Computing System™ (Cisco UCS), Cisco UCS or Cisco Nexus® networking, VMware View 5.1, and EMC VNX5500 storage, this solution offers scalability at an excellent price point (Figure 2). The combination of technologies delivers a desktop virtualization platform that supports

a high user density (150 or more desktops per blade) while maintaining an outstanding end user experience. Both Fibre Channel and NFS storage can be used concurrently to optimize performance and efficiency (see Table 2).

This solution features industry-leading boot up, login and start-work times, without exhausting system resources. It can be used by organizations that want to take advantage of multipurpose computing nodes. Managed by Cisco UCS Manager, Cisco UCS blade servers can be repurposed automatically at different times of day, to best support workload and business requirements. The Cisco desktop virtualization infrastructure can be brought back online more quickly than infrastructure from any other vendor because only minutes are needed to provision the system. This speed increases business agility and allows high utilization of data center assets.

Solution Components

The solution helps organizations quickly move away from silos of desktop operations and move quickly toward a more cost-effective virtualized desktop environment.

Cisco UCS combines high-performance computing, networking, virtualization, and storage-access resources in a single unified system. Management is provided through Cisco UCS Manager, which integrates with VMware vCenter for transparent provisioning of virtual machines.

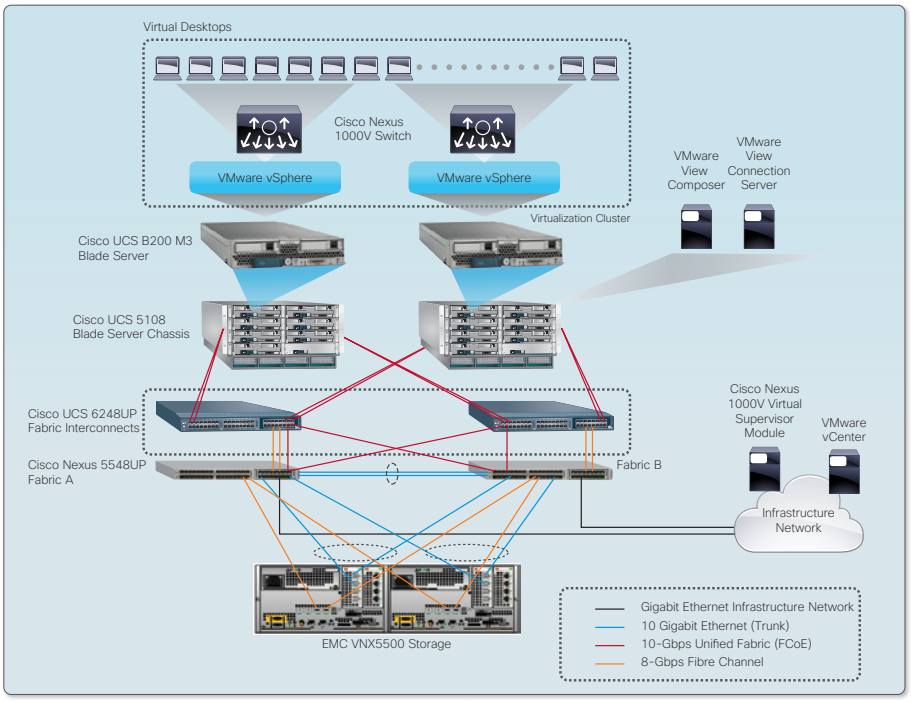

Figure 2. Cisco Virtual Desktop Solution for EMC VSPEX with Support for 2000 Virtual Desktops Using Fibre Channel Shared Storage

Cisco Nexus 1000V Switches are full-featured Cisco switches that operate within multiple hypervisors as a single distributed virtual switch. The software switches extend the network edge to the virtual machine, providing manageability and scalability for virtualized and cloud environments.

VMware View 5.1.2 helps organizations centralize management of desktop operations and user data, which helps user and administrative efficiency and reduce operating expenses.

VMware View 5.1.2 running on VMware ESXi 5.1 uses the VMware Content Based Read Cache and VMware View host cache to store the most frequently read data in ultra-fast Cisco UCS server memory. This capability greatly improves responsiveness and helps provide an excellent end user experience.

EMC VNX Family storage solutions provide unified storage that delivers both storage area networking (SAN) storage and network-attached storage (NAS) in a single platform optimized for virtualization. EMC VNX storage makes the addition, management, and monitoring of storage straightforward. The storage solution provides space savings and allows more data to be stored at a lower cost.

Easy Ordering

The solution's computing and networking components are available through Cisco and its partners. Cisco solutions for EMC VSPEX make it easy to quickly deploy a powerful, secure virtualized environment without the expense or risk entailed in designing and building your own custom solution.

For More Information

For more information about Cisco VSPEX solutions, please visit http://www.cisco.com/go/vspex.

For more information about Cisco Desktop Virtualization, please visit http://www.cisco.com/go/vdi.

For more information about Cisco Desktop Virtualization with VMware View, please visit http://www.cisco.com/go/vdivmware.

For more information about Cisco DesignZone for VDI, please visit http://www.cisco.com/go/vdidesigns.

Table 2. 2000 Virtual Desktop Solution Components

Element	Blade Server–Based Fibre Channel and NFS Solution
Virtualization	VMware View 5.1.2
Computing	14 Cisco UCS B200 M3 Blade Servers, each with: • 2 Intel Xeon processors E5-2690 (8 cores each) • 256 GB of memory • Redundant power supplies • Cisco UCS Virtual Interface Card (VIC) 1240 2 Cisco 5108 Blade Server Chassis
Networking	• 2 Cisco UCS fabric interconnects • 2 Cisco UCS fabric extenders
Storage	EMC VNX5500 Storage • 2 storage controllers • 10 200-GB flash drives for VNX Fast Cache • 36 600-GB SAS drives for virtual desktops and expansion • Redundant Fibre Channel and 10 Gigabit Ethernet connectivity • 7 Data Movers
Additional Software	Cisco Nexus 1000V Switch

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