Cisco Solution for EMC VSPEX: Microsoft Private Cloud Fast Track 3.0 Enterprise Medium M250

Solution Brief
June 2013

In Collaboration with EMC and Microsoft

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 pre-sized and pre-validated to reduce risk and accelerate deployment
- Cisco® Validated Designs for Microsoft Private Cloud Fast Track 3.0 further accelerates deployment and reduces risk with pretested configurations
- The solution is designed to be highly available and reliable, helping ensure continuous application access

Rapid Deployment

- Using Cisco Unified Computing System™ (Cisco UCS®), Cisco® Nexus Switches, Microsoft Hyper-V, and EMC VNX Family storage, the solution provides businesses with intelligent infrastructure that accelerates private cloud deployments

Excellent Performance

- The solution uses a balanced approach to resources, including high-performance Intel® Xeon® processors, 20 Gbps of I/O bandwidth per server, and EMC VNX5500 Family storage

Integrated Management

- The solution is tightly integrated with Microsoft System Center 2012 SP1 Operations Manager, Orchestrator, and Virtual Machine Manager and comes with a Microsoft PowerShell-based management toolkit, Cisco UCS PowerTool.

Cisco has engaged the EMC VSPEX and Microsoft Private Cloud Fast Track programs to deliver presized and prevalidated solutions to radically simplify private cloud deployment in medium-sized businesses.

Cisco participates in both the EMC VSPEX and Microsoft Fast Track programs to deliver a greatly simplified private cloud solution that can be deployed quickly and accurately. This solution for Microsoft Windows Server 2012 Hyper-V and Microsoft System Center 2012 Service Pack 1 (SP1) integrates all the components necessary to deploy a medium-sized private cloud implementation (Figure 1). It consists of Cisco Unified Computing System™ (Cisco UCS®) B200 M3 Blade Servers, Cisco Nexus® switches, Microsoft Windows Server 2012, Microsoft System Center 2012 SP1, and EMC VNX5500 storage.The solution is configured for high availability and reliability (Table 1).

Solution Benefits

The solution helps organizations quickly move toward a more cost-effective private cloud environment.

Cisco UCS combines high-performance computing, networking, virtualization, and storage-access resources into a single unified system. The solution adds tight integration between Cisco UCS Manager and Microsoft System Center Operations Manager 2012 SP1, Virtual Machine Manager, and Orchestrator. For command-line management there is Cisco UCS PowerTool, a Microsoft PowerShell-based library of commands.

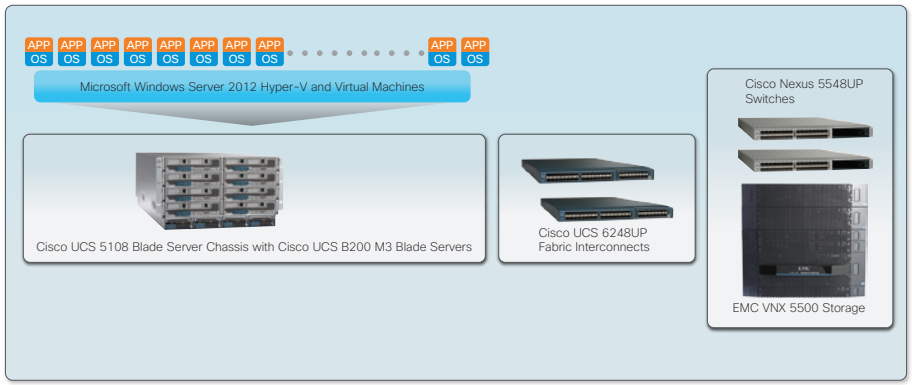

Figure 1. The Solution Supports Up to 250 Virtual Machines Using Fibre Channel Storage

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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.

Microsoft Windows Server Hyper-V supports a dynamic, multitenant infrastructure to help scale and secure workloads in a private cloud. This environment is established by integrating Cisco UCS and EMC VNX storage to provide a fully isolated environment with tools that can help ensure service levels and support self-service delivery.

EMC VNX Family storage provides unified storage solutions that deliver both 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 ESI PowerShell toolkit integrates with Microsoft Windows PowerShell to automate configuration and administrative tasks.

Easy Ordering

The solution's computing and networking components are available through Cisco and its partners (Table 1). 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.

Table 1. Solution Components

Element	Solution Components
Software	Microsoft Windows Server 2012 Hyper-V Microsoft System Center 2012 SP 1
Computing	8 Cisco UCS B200 M3 Blade Servers, each with: • 2 Intel® Xeon® processors E5-2650 (8 cores each) • 256 GB of memory • Cisco UCS Virtual Interface Card (VIC) 1240 1 Cisco UCS 5108 Blade Server Chassis
Networking	• 2 Cisco UCS 6248UP Fabric Interconnects • 2 Cisco UCS 2208 Fabric Extenders • 2 Cisco Nexus 5548UP Switches
Storage	EMC VNX5500 storage • 2 storage controllers • Redundant Fibre Channel and iSCSI modules and Server Message Block (SMB) 3.0 data movers • 75 300-GB SAS drives • EMC Unisphere array management • EMC PowerPath Multipath I/O (MPIO) • EMC Storage Integrator (ESI) • EMC VNX Operations Management Pack for Microsoft Systems Center Operations Manager 2012
Additional Software	• Cisco Nexus 1000V Switch Essential Edition • Cisco UCS Management Pack for Microsoft System Center 2012 SP1 Operations Manager • Cisco UCS User Interface Extensions for Microsoft System Center 2012 SP1 Virtual Machine Manager • Cisco Integration Pack for Microsoft System Center Orchestrator 2012 SP1 • Cisco UCS PowerTool (Microsoft PowerShell Management Toolkit)

For More Information

For more information about Cisco UCS Microsoft solutions, please visit http://www.cisco.com/go/microsoft.

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