Cisco Virtual Update

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Jan 16, 2013
What’s Coming: B420 M3 Blade Server
Expanding the Unified Computing Portfolio

Unified Computing in an enterprise-class, 4-socket blade for large, memory-intensive bare-metal and virtualized applications

- Performance intensive and high density virtualization
- 4-socket capabilities with the economics of a 2-socket platform
- Expanded storage feature set
- Integrated dual 20GbE + two mezzanine slots

UCS B420 M3
Dense, Performance-Optimized Enterprise Blade Server
Availability 3Q’CY12

- 4 x E5-4600 CPUs
- 4 x SFF Hot Plug SAS / SATA HDD /SSD
- Full width blade form factor
- Up to 160 Gb I/O Bandwidth
- 48 DDR3 DIMMs
- 1GB Flash-Backed Write Cache (Optional)
What’s Coming: FusionIO Mezzanine Card for UCS B-Series

Expanding the Unified Computing Blade Option Portfolio

Fusion ioDrive2 architected into Cisco UCS blade servers allow storage performance to be decoupled from capacity through the integration of a powerful new memory tier uniquely designed to accelerate applications.

- Create new ultra-low latency storage tiers
- Boost in-server application performance with Database and Virtualization workloads
- Specs:
  - 785 GB MLC Flash capacities (365 GB 2nd Phase)
  - 1.5GB/s Bandwidth (1MB Read)
  - 1.1GB/s Bandwidth (1MB Write)
  - 141,000 IOPS (512B Random Read)
  - 535,000 IOPS (512B Random Write)
  - 15µs Write Latency, 68µs Read Latency
- HW supported: All M3 Blades
- SW supported: UCSM 2.1 (Del Mar)

ioMemory2 for UCS B-Series
EC completed
Expected Q1’CY13
SKU: UCSB-F-FIO-785M
LSI Nytro WarpDrive allows storage performance to be decoupled from capacity through the integration of a powerful new memory tier uniquely designed to accelerate applications.

- Create new ultra-low latency storage tiers
- Boost in-server application performance with Database and Virtualization workloads
- Specs:
  - 400GB SLC Flash capacities (800GB eMLC 2nd Phase)
  - 2GB/s Bandwidth (256K Read)
  - 1.7GB/s Bandwidth (256K Write)
  - 238,000 IOPS (4K Random Read)
  - 133,000 IOPS (4K Random Write)
  - < 50µs Average
- HW supported: All M3 Blades
- SW supported: UCSM 2.1 (Del Mar)
- Option with EMC VFCache

EMC VFCache: An Intelligent caching software with PCIe Flash technology extends storage tiering to your server.

http://www.emc.com/storage/vfcache/vfcache.htm
What’s Coming: UCS Central
Unified Management for Multiple UCS Domains

Unified Management at Scale

UCS Central

- Unifies management of multi UCS domains
- Leverages UCS Manager technology
- Simplify global operations with centralized inventory, faults, logs and server consoles

- Delivers global policies, service profiles, ID pools and templates
  Foundation for high availability, disaster recovery and workload mobility
- Model based API for large scale automation
Manage Cisco UCS with Microsoft System Center 2012 and PowerShell

Cisco Virtual Update
Jan 16, 2013
Agenda

• Cisco UCS Introduction
• Manage Cisco UCS with System Center 2012
• SCOM Management Pack
• PowerTool Discussion/Demo
• SCO Integration Pack
• Q&A
Cisco Unified Computing System
Overview

Cisco UCS Hardware Brief

Cisco UCS: Single Object to Manage a Server's Identity

Cisco UCS Service Profile

NIC MACs
HBA WWNs
Server UUID
VLAN Assignments
VLAN Tagging
FC Fabrics Assignments
FC Boot Parameters
Number of vNICs
Boot order
PXE settings
IPMI Settings
Number of vHBA
QoS
Call Home
Template Association
Org & Sub Org Assoc.
Server Pool Association
Statistical Thresholds
BIOS scrub actions
Disk scrub actions
BIOS firmware
Adapter firmware
BMC firmware
RAS settings
Advanced NIC settings
Serial over LAN settings

SAN
LAN
Cisco UCS Manager

- Embedded device manager
  - Discovery, Inventory, Configuration, Monitoring, Diagnostics, Statistics Collection

- Single, highly available management domain for all UCS components
  - Adapters, blades, chassis, fabric extenders, fabric interconnects

- Service Profiles
  - Key Feature of UCS Manager
  - Coordinated deployment to managed endpoints

- APIs for integration with new and existing data center infrastructure
  - SMASH-CLP, IPMI, SNMP
  - XML-based SDK for commercial & custom implementations
Cisco UCS Manager

**IS:**
- A *Single point of management* for the entire system
  - IO Fabric
  - Chassis and Servers
  - Adapters & virtual I/O
- Centralized
- A *Policy-driven* Device Manager
  - Configuration
  - Fault
  - Monitoring
  - …

**IS NOT:**
- OS and application management
  - provisioning, patching, security, performance, inventory, change management
  - All transparently handled by ecosystem solutions
- Orchestration of other devices
  - E.g. storage, firewalls, L3 routers, …
- VM Management
- Workflow Engine
Manage Cisco UCS with System Center 2012

Bring Unsurpassed Power, Control And Efficiency
Integrated & Simple Management Tools
Optimize Your Data Center’s Functions

Cisco UCS Manager
- Manages Cisco UCS servers across multiple blade chassis and rack servers as one logical, highly available entity with flexible service profiles
- Provides granular UCS visibility and control to Microsoft data center management tools through a comprehensive XML API

Microsoft System Center
- A suite of tools that provide management, virtualization, monitoring, and security for your data center
- Manage your physical and virtual IT environments across data centers, client computers and devices
UCS Manager & System Center Together
Bring Unsurpassed Power, Control And Efficiency

Embedded in Cisco UCS products
- Provides end-to-end management in the UCS platform
- Eliminates the need for an external management server
- Enables rapid provisioning and scaling of IT infrastructure
- Comprehensive XML API gives customers programmatic capability to choose their management tools

UCS Manager seamlessly integrates with Microsoft System Center tools such as Operations Manager, Orchestrator and Virtual Machine Manager

• Employment of Cisco power to enhance your existing management tools and skill sets
• Utilization of a single Microsoft interface to manage, monitor, measure and automate at every layer
• Management of physical and virtual machines identically
UCS Management with SC 2012
Ease IT management through a single interface

Software

Operations Manager
Orchestrator

Management Pack
Integration Pack
.NET Library

Integration

UCS Manager
Physical
Virtual

Infrastructure

Unified Compute System

“Single Pane of Glass”

UCS PowerTool for PowerShell
Deliver integrated private cloud solutions
Cisco compute and network infrastructure with Windows 8 and Hyper-V

- Provision and Manage Windows 8 Physical and virtual environments supported by Cisco UCS and Cisco Virtual Networking Infrastructure.

- Cisco and MSFT announced integration plans involving VM-FEX/N1KV with Hyper-V in Sep 2011 BUILD conference

- SC2012 integration available in Apr 2012

- Hyper-V/N1KV/VM-FEX integration coincide with Windows 8 release schedule.
Best of Tech Ed winners stand apart from the pack, either offering an edge in product functionality, boasting enhanced feature sets in new versions, or introducing innovative technology. Winners are chosen based on their innovation, strategic importance to the market, competitive advantage, and exceptional value to customers.
Monitor Cisco UCS with Operations Manager 2012
Get end-to-end monitoring of Cisco UCS
UCS Management with Operations Manager 2012

- Holistic View of Converged Infrastructure Health
  - Monitor alerts and faults on Chassis, Blades, Fabric Interconnects, I/O Power Supply, Fan Modules….
  - Manage multiple UCS domains with single management pack

- Simple and Powerful Visualizations
  - Graphical Views of UCS topology
  - Graphical views of physical and logical entities and relationships

- Reliable Information
  - UCS XML API provides a powerful, supported interface for Operations Manager
UCS Management with Operations Manager 2012 – Hardware View
UCS Management with Operations Manager 2012 – Service Profile View
UCS Management with Operations Manager 2012 – Fault View
Automate Cisco UCS Management with UCS PowerTool
Bringing More Power to PowerShell
UCS PowerTool
Bringing More Power to PowerShell

The Essential Tool Kit

- PowerShell is the common management platform used across all Microsoft operating systems and applications
- UCS PowerTool is a Cisco-built, user-friendly, PowerShell-based library that Microsoft tools understand
- A simple way to utilize Windows PowerShell and customize tools to business needs

Don’t reinvent the wheel…

…build on it
Goal: Deliver comprehensive infrastructure management capabilities based on .NET and PowerShell by leveraging open UCS XML API

- Architected for Flexibility and coverage
  - PowerShell Wrapper
    - Cmdlet definition and structure
    - Get-help support
  - .NET UCS Namespace Library
    - XML API call construction
    - Class Definition
    - Validation
- ‘Good’ PowerShell Design
  - In-line get-help support
  - Full Pipelining support
  - Fully classed object definition
  - All ‘legal’ verbs
- .NET Namespace provides common base for all Microsoft focused integration
- Targeted to support full manageability of UCS across multiple releases
Automated Activity Generation

UCS XML Schema Processor

UCSM-IN.xsd
UCSM-OUT.xsd

Augment Schema

Method & MO Meta Information

PowerShell Generator
Cisco UCS PowerTool (1400+ Cmdlets)

Microsoft SCO IP Generator
Microsoft SCO Integration Pack (~1400 Activities)

XYZ Generator
XYZ Integration Pack
Cisco UCS PowerTool
Supported Objects and Assets

Service Profiles

- Policies (firmware, boot order, hba / nic config)
- Pools (wwpn, wwnn, uuid, mac)
- Config of HBA, NIC, Boot order, Local HDD config
- Faults
- Power / cooling / environmental data / statistical data

Blades

- Hardware - cpu, mem, mezz cards, CIMC IP, IPMI config)
- Faults
- Power / cooling / environmental data / statistical data

Chassis

- Faults
- PSU / Fans
- Power / Cooling / Environmental data / Statistical data

Fabric Interconnect

- Faults
- PSU / Fans
- Power / Cooling / Environmental data / Statistical data/ Networking info

Config

- Pools (wwpn, wwnn, uuid, mac)
- Service profile template creation & consumption
- Service profile template cloning
- Simplistic service profile creation (with a limited scope of what is available to configure)
- Expert SP creation (use variablized XML w/ config file)
- Management IP pool creation
# Cisco UCS PowerTool

**Glimpse at behind the scenes**

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<tr>
<th>Cmdlet</th>
<th>Method</th>
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<tr>
<td>Add-Ucs*, Set-Ucs*</td>
<td>ConfigConfMos</td>
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<td>Get-Ucs*</td>
<td>ConfigResolveClass with filters</td>
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<td></td>
<td>ConfigResolveClasses (for BaseClass cmdlets - limited)</td>
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<tr>
<td>Get-UcsManagedObject -ClassId</td>
<td>ConfigResolveClass</td>
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<tr>
<td>Get-UcsManagedObject – ClassId -Dnlist</td>
<td>ConfigFindDnsByClassId</td>
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<tr>
<td>Get-UcsManagedObject – Dn</td>
<td>ConfigResolveDns</td>
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<tr>
<td>Connect-Ucs</td>
<td>AaaLogin</td>
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<tr>
<td>Disconnect-Ucs</td>
<td>AaaLogout</td>
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<tr>
<td>&lt;Handle's background timer&gt;</td>
<td>AaaRefresh</td>
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<tr>
<td>Copy-UcsServiceProfile</td>
<td>LsClone</td>
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<tr>
<td>Copy-UcsServiceProfile – Type *-template</td>
<td>LsTemplatise</td>
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<tr>
<td>Get-UcsChild</td>
<td>ConfigResolveChildren</td>
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<tr>
<td>Acknowledge-UcsFault</td>
<td>FaultAckFaults</td>
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<tr>
<td>Connect-UcsKvm</td>
<td>ConfigScope, ConfigResolveDn, AaaGetNComputeAuthTokenByDn</td>
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<tr>
<td>Watch-Ucs</td>
<td>EventSubscribe (First Watcher)</td>
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</table>
Automate Cisco UCS Management with UCS PowerTool Demo
Automate Cisco UCS Management with Orchestrator 2012

Consistent Management of Cisco UCS
Automate and Standardize UCS Management with Orchestrator

- Automate UCS management
  - Improve predictability and reduce manual errors with UCS integration pack
  - Reduce time to delivery and reduce TCO
  - Packaged UCS activities for consistent delivery of UCS operations

- Deliver Scalable and Reliable UCS management through Orchestrated Workflows
  - Deliver consistent service across multiple systems and departments
  - Packaged workflows to automate UCS operations
  - UCS XML API provides a powerful, supported interface for Orchestrator workflow operations

- Optimize and extend UCS capabilities
  - Integrate with 3rd party tools using Cisco UCS integration pack
Automate and Standardize UCS Management with Orchestrator

Sample of included activities in UCS integration pack

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<th>Activity</th>
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<tr>
<td>Add-UcsBiosPolicy</td>
<td>Add-UcsWwnPool</td>
<td>Get-UcsFault</td>
<td>Get-UcsVhbaTemplate</td>
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<tr>
<td>Add-UcsBootDefinition</td>
<td>Backup-Ucs</td>
<td>Get-UcsIpPool</td>
<td>Get-UcsVlan</td>
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<td>Add-UcsBootPolicy</td>
<td>Complete-UcsTransaction</td>
<td>Get-UcsIpPoolBlock</td>
<td>Get-UcsVnic</td>
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<tr>
<td>Add-UcsEthernetPinGroup</td>
<td>Confirm-UcsFault</td>
<td>Get-UcsLanCloud</td>
<td>Get-UcsVnicTemplate</td>
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<td>Add-UcsFcPinGroup</td>
<td>Connect</td>
<td>Get-UcsLicense</td>
<td>Get-UcsVsan</td>
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<td>Add-UcsIpPoolBlock</td>
<td>Connect-UcsServiceProfile</td>
<td>Get-UcsLocalUser</td>
<td>Get-UcsVsanTemplate</td>
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<tr>
<td>Add-UcsLocalUser</td>
<td>Copy-UcsServiceProfile</td>
<td>Disconnect</td>
<td>Remove-UcsBiosPolicy</td>
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<tr>
<td>Add-UcsMacMemberBlock</td>
<td>Disconnect-UcsServiceProfile</td>
<td>Get-UcsLocatorLed</td>
<td>Remove-UcsBootPolicy</td>
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<tr>
<td>Add-UcsMacPool</td>
<td>Get-UcsApplianceCloud</td>
<td>Get-UcsMacMemberBlock</td>
<td>Remove-UcsEthernetPinGroup</td>
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<td>Add-UcsMaintenancePolicy</td>
<td>Get-UcsAudit</td>
<td>Get-UcsMacPool</td>
<td>Remove-UcsLocalUser</td>
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<tr>
<td>Add-UcsServerPool</td>
<td>Get-UcsBootDefinition</td>
<td>Get-UcsOrg</td>
<td>Remove-UcsServerPool</td>
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<tr>
<td>Add-UcsServerPoolAssignment</td>
<td>Get-UcsBootPolicy</td>
<td>Get-UcsPlacementPolicy</td>
<td>Set-UcsBlade</td>
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<tr>
<td>Add-UcsServerPoolPolicy</td>
<td>Get-UcsCapability</td>
<td>Get-UcsQosPolicy</td>
<td>Set-UcsEthernetPinGroup</td>
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<tr>
<td>Add-UcsServiceProfile</td>
<td>Get-UcsCcoImageList</td>
<td>Get-UcsRackUnit</td>
<td>Set-UcsLocatorLed</td>
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<tr>
<td>Add-UcsUuidSUFFIXBlock</td>
<td>Get-UcsChassis</td>
<td>Get-UcsSanCloud</td>
<td>Set-UcsMacPool</td>
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<tr>
<td>Add-UcsUuidSUFFIXPool</td>
<td>Get-UcsComputeBoard</td>
<td>Get-UcsServerPool</td>
<td>Set-UcsOrg</td>
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<tr>
<td>Add-UcsVhba</td>
<td>Get-UcsComputeMbTempStats</td>
<td>Get-UcsServerPower</td>
<td>Set-UcsServerPower</td>
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<tr>
<td>Add-UcsVhbaTemplate</td>
<td>Get-UcsEvent</td>
<td>Get-UcsServiceProfile</td>
<td>Set-UcsServiceProfile</td>
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<tr>
<td>Add-UcsVlan</td>
<td>Get-UcsFabricLanCloud</td>
<td>Get-UcsStatus</td>
<td>Set-UcsVnic</td>
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<tr>
<td>Add-UcsVnic</td>
<td>Get-UcsFabricSanCloud</td>
<td>Get-UcsUplinkPort</td>
<td>Start-UcsTransaction</td>
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<tr>
<td>Add-UcsVnicTemplate</td>
<td>Get-UcsVhba</td>
<td>Get-UcsUuidSUFFIXBlock</td>
<td>Undo-UcsTransaction</td>
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Automate and Standardize UCS Management with Orchestrator

Sample of included Runbooks

- Add service profile from service profile template
- Backup UCS configuration
- Decommission Blade
- Clone a Service Profile
Solutions & Information
Get UCS free from CDN

Tested Solutions
Eliminate Unnecessary Complexity

Cisco Validated Designs

Lower Risk
- Making a move to Microsoft Applications on Cisco UCS is easier and less risky.
- Provides confidence via a tested and validated reference architecture for all Microsoft application scenarios
SQL Server 2008 R2 OLTP Reference Architecture

A Cisco Validated Architecture and Reference Configuration

*Improve Performance, Lower Data Center Complexity and Deliver Unified Management*

- Small OLTP Configuration
  - 5 Million Transactions Per Hour
- Medium OLTP Configuration
  - 7.5 Million Transactions Per Hour
- Large OLTP Configuration
  - 12.5 Million Transactions Per Hour
SQL Server 2008 R2 Fast Track Data Warehouse 3.0

A Cisco Validated Architecture and Reference Configuration

Improve Performance, Lower Data Center Complexity and Deliver Unified Management

- Fastest time to market for your data warehouse solution
- Out-of-the-box performance
- Mitigate risk
- Two configuration to choose from.
  - Scale from 8 up to 40 terabytes
- Based on Cisco UCS C-Series rack-mount servers
  - Designed to operate in both standalone environments and as part of Cisco Unified Computing System
- Powered by EMC VNX Series, achieve new levels of performance, protection, compliance, and ease of management
Application Architecture – Validated Designs
Cisco Microsoft Fast Track Solutions

FlexPod with Microsoft Private Cloud
First Validated Data Center Infrastructure for Microsoft Private Cloud with System Center 2012. Tight integration between UCS Manager and Microsoft System Center provides “single pane of glass” management from network switch to application.

Citrix XenDesktop on FlexPod with Microsoft Private Cloud
Support for 2000 desktop users. Takes advantage of UCS’s high-density platform. First workload validated to run on top of FlexPod with Microsoft Private Cloud with System Center 2012.

EMC FT 2.0 configuration
Components, from CPUs to physical drives, are used optimally—each server is configured with the memory and network adapters optimized for Hyper-V virtualization. All Microsoft products are deployed on UCS servers that utilize EMC VNX storage to simplify deployment for virtualization.
Cisco and NetApp Introduce FlexPod
A Turnkey Solution That Flexes to Your Needs

Microsoft Private Cloud Solutions:
Built on Windows Server 2008 R2 with Hyper-V technology and Microsoft System Center solutions

Cisco Nexus 5548UP Switch
Delivers innovative architectural flexibility, infrastructure simplicity, and business agility, with support for networking standards across traditional, virtualized, unified, and high-performance computing environments

Cisco Unified Computing System
ICS 6248 FABRIC INTERCONNECTS & 5108 BLADE CHASSIS

Flexible Pod
Delivers innovative architectural flexibility, infrastructure simplicity, and business agility, with support for networking standards across traditional, virtualized, unified, and high-performance computing environments

NetApp Family of FAS Controllers
Provide an agile and scalable storage platform that unifies storage, data management software and processes to reduce the complexity of data ownership, boost agility, and reduce the overall total-cost-of-ownership

Cisco UCS B-Series Blade Servers & UCS Manager
The first converged data center platform that combines industry-standard, x86-architecture servers with networking and storage access into a single system. Entirely programmable to simplify and speed deployment of applications and services running in bare-metal, virtualized, and cloud-computing environments

FlexPod Architectural Integration

Cisco Access Layer NEXUS 554UP

NetApp Storage FAS3240s

10GbE ONLY

LEGACY FC

CONVERGED TRAFFIC FCoE & 10GbE

vPC

vPC PEER LINKS

vPC

IFGRP

IFGRP

PORT CHANNELS

SAN PORT CHANNEL

SAN PORT CHANNEL

vPC PEER LINKS

vPC PEER LINKS

CONVERGED NETWORK TRAFFIC

NON-CONVERGED NETWORK TRAFFIC

CONVERGED TRAFFIC FCoE & 10GbE

CONVERGED TRAFFIC FCoE & 10GbE

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SAN PORT CHANNEL

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**VSPEX for WS2012**

**Server Hardware:**
- 4 x Cisco UCS C220 M3 Server Medium config, 1 x Cisco UCS P81E VIC

**Network & Storage Hardware:**
- 2 x Cisco Nexus 5548 UP Switch
- 1 x EMC VNXe3300 Storage

**Software Configuration:**
- Microsoft Windows 2012 with HyperV
Nexus 1000V for Hyper-V
### Cloud technology stacks

**Multi-Service, Multi-Hypervisor and Multi-Cloud Strategy**

#### Cloud Portal and Orchestration
- **vCloud Director**
- **DynamicOps**

#### Virtual Network Infrastructure
- **vSphere**
- **Hyper-V**
- **ASA 1KV**
- **vWAAS, VSG**
- **CSR 1KV**
- **vPath**
- **Nexus 1KV**

#### Hypervisor
- **vCloud Director**
- **DynamicOps**

#### Computing Platform
- **UCS**

#### Physical Network
- **Nexus 2K-7K + ASR 9K (Edge)**

#### Storage Platform

### Solutions:
- **Vblock**
- **FlexPOD**
- **VMDC**
- **VDI**
- **HCS**
- **Cross-DC Mobility**
Consistent architecture, feature-set & network services ensures operational transparency across multiple hypervisors.
Cisco Nexus 1000V for Hyper-V Operational Model with SCVMM

SCVMM manages the placement and live-migration of the VMs based on the constraints between VM networks and the network sites.

SCVMM adds hosts to N1KV and connects VMs (VNICs) to VM Networks.

SCVMM creates networks and policies (logical networks, network sites, VM networks).

Server Admin

Nexus 1000V VSM

Network Admin

Server

Win 8 Hyper-V

VM

CISCO

Nexus 1000V VEM

CISCO

Configuration data and policies sent to N1KV VEM

Create networks and policies (logical networks, network sites, VM networks)
Cisco Nexus 1000V Architecture Utilizes Hyper-V Extensible Switch Platform

- Extensions process all network traffic, including VM-to-VM on the same host
- Forwarding Extensions can Capture and Filter Traffic as well
- Nexus 1000V will work with other 3rd party Capture and Filtering Extensions as well
- Live Migration and NIC Offloads continue to work even when the extensions are present
Logical Network represents a network with a certain type of connectivity characteristics (for eg. DMZ network, intranet, isolation)

An instantiation of a Logical network on a set of host-groups (for eg. hosts in a POD) is called a Network Site

Network sites can be defined based on physical network connectivity or based on isolating traffic to specific host-groups
Microsoft SCVMM Networking Concepts

Associating VNICS to VM Networks & Port-classifications

• Choose network
  VM Network
  VM Subnet is tied to the Network (1:1)

• Choose IP address type (DHCP or statically assigned)
  Choose IP pool for static IPs

• Choose Port Profile Classification
  Policy (QoS, Security, Monitoring)
  A Classification refers to a Port Profile
Cisco Nexus 1000V for Hyper-V
Splitting “Network Connectivity” and “Policy”

Current N1KV/ESX Version

```
# port-profile db-client
switchport mode access
switchport access vlan 10
ip port access-group dbclient in
no shut
state enabled

# port-profile db-server
switchport mode access
switchport access vlan 10
ip port access-group dbserver in
no shut
state enabled
```

N1KV/Hyper-V Version

```
# network-segment db-network
switchport mode access
switchport access vlan 10

# port-profile db-client
ip port access-group dbclient in
no shut
state enabled

# port-profile db-server
ip port access-group dbserver in
no shut
state enabled
```
Cisco Nexus 1000V for Hyper-V
Defining the DMZ network hierarchy

# network-definition DMZ_POD1

# network-segment DMZ_POD1_SUBNET1
switchport mode access
switchport access vlan 20
ip-pool DMZ_POD1_Pool1
network-definition DMZ_POD1

# network-segment DMZ_POD1_SUBNET2
switchport mode access
switchport access vlan 21
ip-pool DMZ_POD1_Pool2
network-definition DMZ_POD1

# network-segment DMZ_POD1_SUBNET3
switchport mode access
switchport access vlan 22
ip-pool DMZ_POD1_Pool2
network-definition DMZ_POD1

• A Network Site is a grouping of VM Networks that are always available together on the same host simultaneously
• A host uplink can be configured to carry one or more Network Sites
vPath and Cloud Network Services
Consistent Architecture across Hypervisors

VMware vCenter ➔ Virtual Machine Attributes ➔ Cisco® VNMC ➔ vPath ➔ Cisco Nexus® 1000V

Port Profiles ➔ Service Profiles

SCVMM ➔ Virtual Machine Attributes ➔ Cisco® VNMC ➔ vPath ➔ Cisco Nexus® 1000V

Port Profiles ➔ Service Profiles
Cisco Nexus 1000V Premium Pricing
Will be consistent across hypervisors

**Essential Edition ($0)**
- VLAN, ACL, QoS
- **VXLAN, vPath**
- LACP
- Multicast
- Netflow, ERSPAN
- Management
- vTracker
- vCenter Plug-in

**Advanced Edition ($695 LIST)**
- Cisco TrustSec SXP support
- CISF: DHCP snooping, IP Source Guard, ARP Inspection
- **VSG (previously $495 List)**

**Essential Edition**
- VLAN, ACL, QoS
- VXLAN, vPath
- LACP
- Multicast
- Netflow, ERSPAN
- Management
- vTracker
- vCenter Plug-in
Thank you.
Thank you.