VMware vSphere 6, Part 2 of 5: Networks and Storage

Meet the expert: Jeff has held a broad spectrum of positions within the IT>field for over 30 years. Jeff has owned and operated his own IT business and has installed and supported networks and data centers at almost every level of the IT world. Jeff has recently authored both courseware and exams for Microsoft. For over 15 years, Jeff has worked as a consultant and trainer with a focus on the design of Enterprise Architecture, as well as Windows and VMware networks.

Prerequisites: This course assumes that students are familiar with the basic use of Windows and common use of the mouse and keyboard. No prior experience with Office 365 is assumed.

Runtime: 02:50:25

Course description: Welcome to VMware 6 Bootcamp. In this course we cover networking and storage as foundational topics from the host perspective.

Course outline:

Creating and Modifying Virtual Networks Part 1
- Introduction
- Networking Terms
- vSphere 6.0 Virtual Switch Types
- Network Connection in ESXi
- Add and Edit Networking
- Standard Virtual Switches
- Add Physical NICs
- VIrtual Swith & Connection Type Identification
- VMWare Assigned MAC Addresses
- Custom MAC Addresses
- Summary

Creating and Modifying Virtual Networks Part 2
- Introduction
- Physical NIC Configuration Options
- Cisco Discovery Protocols on vSS
- Modifying vSS Properties
- Ports: 5.5 and Higher
- Modifying vSwitch Properties
- VLAN Overview
- VLAN Implementations
- Set VLAN Configuration
- Standard vSwitch Protection and VLANs
- Standard Policy Settings: Security
- Standard Policy Exceptions: Traffic Shaping
- Standard Policy Exceptions: NIC Teaming
- Network Failing and NIC Teaming Options
- Load Balancing Methods
- IP Hash Load Balancing Requirements
- Port Group: Override vSwitch Failover Order
- Multiple Policies Applied to a Single Team
- Physical Switch Configuration
- Summary

vSphere Distributed Switches
- Introduction
- vSphere Distributed Switch Overview
- New Features in vSphere 5.0
- New Features in vSphere 5.1
- New Features in vSphere 5.5
- New Features in vSphere 6.0
- Creating a vSphere Distributed Switch
- Edit vDS Settings
- Edit VDS Uplink Settings
- Edit vDS Port Group Settings
- Private VLAN Tagging
- Private VLANs
- Migrating VMkernel Port to vDS
- Network I/O Control
- NIOC Best Practices
- Create NetFlow
- Using Port Mirroring
- vDS Health Check
- Traffic Filtering and Monitoring
- Configure LACP on vDS 5.5
- Per VM NIOC 3 Settings
- Summary

Third Party Distrbuted Switches
- Introduction
- Cisco Nexus 1000v Virtual Switch
- Nexus 1000v Architecture
- IBM Distributed Virtual Switch 5000V
- Networking Review
- Summary

Storage Concepts
- Introduction
- Storage Terms
- SAN vs. NAS in vSphere
- Device and Path Naming
- VAAI
- Storage APIs: Array Integration
- Multipathing
- Storage APIs: Multipathing
- Path Selection Considerations
- Viewing Multipath from VIC
- Viewing Multipathing: Web Client
- Third Party NMP using VIC
- All Paths Down
- APD Updates in 5.1 and 5.5
- Storage I/O Control
- SIOC Enhancements in 5.1
- SIOC Setup in Web Client
- SIOC Monitoring
- Summary

iSCSI Storage
- Introduction
- iSCSI Overview and Terms for ESX/ESXi
- ESX/ESXi and iSCSI SAN Environment and Addressing
- Hardware vs. Software Initiators
- Multipathing with iSCSI
- Multipathing with Software-Based iSCSI
- iSCSI Software Initiator Networking and Config
- Jumbo Frames
- CHAP Authentication
- Troubleshoot Software iSCSI Initiator
- iSCSI Vendors and Products
- Summary

Fibre Channel Storage
- Introduction
- What is Fibre Channel?
- Fibre Channel Terms for ESXi
- SAN Environment and Addressing
- Multipathing with Fibre Channel
- Fibre Channel Vendors and Products
- Network/Storage Architecture Review
- Summary

VMFS Datastores
- Introduction
- Virtual Machine File System
- VMFS Updates in 5.5
- Upgrade VMFS-3 to VMFS-5
- Viewing and Creating a VMFS-5 Datastore
- Extending a VMFS Datastore Using Extents
- Add an Extent to an Existing VMFS
- Expand an ESXi 6.0 VMFS Volume
- Defragmentation
- VMFS Operations

(Continued on page 2)

VMware vSphere 6, Part 2 of 5: Networks and Storage

page 2

• Summary

NAS Storage and NFS Datastores
• Introduction
• Network Attatched Storage
• NFS v4.1
• NFS on Linux
• NFS on Windows 2003 R2 and Higher
• Mount NFS Datastore to Host
• Summary

Raw Device Mapping
• Introduction
• Raw Device Mapping
• RDM Compatibility Modes
• Raw Device Mapping Benefits
• Raw Device Mapping
• Summary

Solid State Disks
• Introduction
• Solid State Disks
• Failure to Identify SSDs and Using SMART
• Host Cache Configuration
• Virtual Flash
• Configure a Virtual Flash Resource and Host Swap
• Virtual Flash Read Cache
• Summary

Storage and VSAN
• Introduction
• vFoglight and vOptimizer Pro
• VSAN
• Datastores and VSAN
• VSAN Architecture
• VSAN 6.0: What's New
• Summary

vSphere Virtual Volumes
• Introduction
• vSphere Virtual Volumes: Concepts
• vSphere Virtual Volumes: Architecture
• vSphere Virtual Volumes: Characteristics
• Considerations, Limitations, and Guidelines
• VVols Certified Storage Vendors
• Summary