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

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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

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- 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

- Per VM NIOC 3 Settings
- Summary
- Switches Introduction

 Cisco Nexus 1000v Virtual Switch

· Hardware vs. Software Initiators

· Multipathing with iSCSI

iSCSI Software Initiator

Networking and Config

Troubleshoot Software iSCSI

iSCSI Vendors and Products

Fibre Channel Terms for ESXi

Multipathing with Fibre Channel

· Fibre Channel Vendors and

Network/Storage Architecture

Virtual Machine File System

Upgrade VMFS-3 to VMFS-5

· Extending a VMFS Datastore

· Add an Extent to an Existing

• Expand an ESXi 6.0 VMFS

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• Viewing and Creating a VMFS-5

CHAP Authentication

**Fibre Channel Storage** 

What is Fibre Channel?

SAN Environment and

Based iSCSI

Jumbo Frames

Initiator

Summary

Introduction

Addressing

Products

Review

Summary

Introduction

Datastore

VMFS

Volume

Using Extents

Defragmentation

VMFS Operations

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VMFS Datastores

VMFS Updates in 5.5

· Multipathing with Software-

- 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

· iSCSI Overview and Terms for

Environment and Addressing

· ESX/ESXi and iSCSI SAN

 SIOC Monitoring Summary

**iSCSI Storage** 

Introduction

ESX/ESXi

- vDS Health Check
- Traffic Filtering and Monitoring
- Configure LACP on vDS 5.5

- Third Party Distrbuted

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

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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

