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Title: **VMware® vSphere™ 6.7 Datacenter Operations (DCO)**

Summary: Class formats available:

- Online Learning (OLL)
- Live In-Classroom Training (LICT)
- Mixed class with Classroom and Online Instruction (OLL ICT mixed learning)
- Private / Onsite

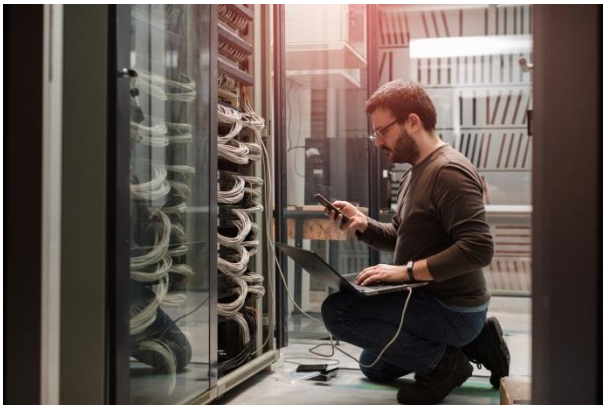
Length: 4 Days (30 hours of instruction)

Compatibility: **This class is based on VMware vSphere 6.7 and fully compatible with vSphere 6.5 and 6.0**

Why choose this class? Our instructors are working consultants whose job is managing VMware Infrastructures from 3 to 300 Hosts. You will benefit from the same skills and knowledge that the instructor has applied to mission-critical systems for the Fortune 500, Government and companies just like yours!

What makes our approach so unique is that every participant builds an **actual datacenter environment on real servers**, from beginning to end. Most importantly, we use the same procedures, in the same order, as they would be implemented ***in your own datacenter***! Your book is your manual for successful VMware vSphere administration!

Overview: **VMware vSphere™ 6.7 DCO** class is designed for IT professionals that need to improve VMware vSphere skills. During class we focus exclusively on **real-world knowledge and Best Practices that you will use in production every day.**



This class emphasizes using the latest VMware vSphere Clients and including use of the **VMware Update Manager (VUM) to upgrade your environment to vSphere 6.7 and apply security patches.**

For 2019 we have a 100% new book, current with all of the latest VMware vSphere™ components:

What's new in VMware vSphere:

- **NEW** vSphere HTML5 Web Client & vSphere Flex Client for vSphere 6.5 and 6.7
- **REDESIGNED** Virtual Appliance Management Interface (VAMI) with improved functionality for vCenter 6.7
- **NEW** vCenter VMware Photon OS Platform for vCenter 6.5 and 6.7
- **IMPROVED** vCenter performance and reduced overhead for vCenter 6.7
- **NEW** migration utility for vCenter 6.7 from Windows vCenter and Upgrade from VCSA 6.0 and 6.5

Our ***VMware® vSphere™ 6.X Datacenter Operations (DCO)*** features over 60 interactive Step-By-Step Labs (SBS LAB ™), complete with detailed instructions and full-color screenshots of all steps. This is the most comprehensive class we offer. That means that our Step-by-Step Labs (SBS LABS™) are sure to become lasting reference materials and a clear, real-world roadmap for the design, implementation and management of VMware® vSphere™ 6.Xincluding:

- Custom SBS labs available to supplement and enhance training

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- Use your classroom IaaS resources for at least one week after class for testing and practice
- Our instructors are real-world consultants that will personally tell you all of the latest news and trends

Objectives:

- Install, Configure, and Manage **VMware vSphere™**
- Enable ESXi hypervisor security with Active Directory
- Create and manage Virtual Machines and Appliances
- Connect to SAN Storage, manage storage paths, create VMFS Volumes
- Manage virtual networking including multiple NICs, Load Balancing and Fail-over
- Configure Jumbo Frames the right way for iSCSI
- Configure Roles, Privileges and Permissions
- Monitor Tasks, Events and Alarms
- Configure Clusters for HA and DRS
- Use vMotion
- Implement Distributed Resource Scheduling (DRS)
- Implement High Availability
- Manage resources with Resource Pools
- Configure and use the VMware vCenter Update Manager (VUM) to Upgrade and Patch ESXi hosts and Virtual Machines
- Backup VMs using VMware the vStorage API for Data Protection (formerly VCB)
- Utilize and integrate 3rd Party Tools into the datacenter environment
- Command line management of vSphere™
- Monitor performance using advanced tools and commands

Each objective will be reinforced with over 80 hands-on Step-by-Step Labs (SBS LABs)!

Who should attend? Administrators who are responsible for a VMware vSphere™ 6.5 environment.

Prerequisites: The VMware® vSphere™ 6.7 Datacenter Operations (DCO) is intended for IT professionals **proficient in Windows and Server administration**.

Outline:

Module 1. Introduction
- **1.1.** What you will find in this book
- **1.2.** Our equipment

Module 2. Grounds for Virtualization and Cloud Computing
- **2.1.** Public, Private and Hybrid Clouds
- **2.2.** Virtualization defined
- **2.3.** What's in it for me?
- **2.4.** What is a hypervisor?
- **2.5.** Hypervisor Classifications
- **2.6.** Comparison of production hypervisors

Module 3. VMware® vSphere™
- **3.1.** What is VMware® vSphere™?
- **3.2.** VMware® vSphere™ Components
- **3.3.** What's new in VMware® vSphere™

Module 4. Installing ESXi
- **4.1.** Where should I get the ESXi ISO
- **4.2.** Disk based or Diskless install?

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- **4.3.** Intelligent Platform Management Interface (IPMI / iLO / iDRAC)
  - **SBS LAB 1.** Accessing your server with IPMI Remote Console
  - **SBS LAB 2.** Installing ESXi
  - **SBS LAB 3.** Using ESXI Diagnostic Consoles
  - **SBS LAB 4.** Initial configuration using the DCUI (Console)
  - **SBS LAB 5.** Disabling IPv6 when it is not required
  - **SBS LAB 6.** Accessing the ESXi ***Embedded Host Client*** (Replacement for the Windows Client)
  - **SBS LAB 7.** Connecting to a standalone ESXi Host

Module 5. Time in a vSphere™ Environment
- **5.1.** NTP (Linux) Time
- **5.2.** Windows Time
  - **SBS LAB 8.** ESXi and NTP

Module 6. Active Directory and ESXi / vSphere™
  - **SBS LAB 9.** Joining ESXi to Active Directory

Module 7. Virtual Machines
- **7.1.** The Virtual Machine Remote Console
- **7.2.** Windows Desktop VMs
  - **SBS LAB 10.** Building a Windows 10 VM
  - **SBS LAB 11.** VMware Tools
- **7.3.** Mission Critical VMs
  - **SBS LAB 12.** Windows Server 2016
  - **SBS LAB 13.** VMware tools for w2k16
- **7.4.** Virtual Appliances
  - **SBS LAB 14.** Deploy Scientific Linux Virtual Appliance deployment
  - **SBS LAB 15.** Export/Create Virtual Appliance from Linux VM
- **7.5.** Virtual Machine File Types
  - **SBS LAB 16.** Virtual machine Files and Folders
  - **SBS LAB 17.** Files and Folders using Putty
- **7.6.** VM Configuration Parameters
  - **SBS LAB 18.** Typematic Resolution
- **7.7.** Timekeeping in Virtual Machines
  - **SBS LAB 19.** Disable Timekeeping for Windows Server VM
- **7.8.** Understanding Snapshots
  - **SBS LAB 20.** Creating, Deleting, and Consolidating Snapshots

Module 8. vCenter Server
- **8.1.** vCenter Server Appliance (vCSA)
  - **SBS LAB 21.** Installing the vCSA
  - **SBS LAB 22.** Downloading log file bundles
- **8.2.** vCenter Consoles, Clients and connections
  - **SBS LAB 23.** Virtual Appliance Management Interface (VAMI) Web console
  - **SBS LAB 24.** vCenter Server HTML5 Web Client – supported for production use
  - **SBS LAB 25.** vCenter Server Flex Client – required for VUM

Module 9. vSphere™ Management With vCenter Server
  - **SBS LAB 26.** Adding AD as LDAP ID Source
  - **SBS LAB 27.** Initial Global Permission assignment
  - **SBS LAB 28.** Adding ESXI server(s)

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- **SBS LAB 29.** Licensing
- **SBS LAB 30.** Disabling SSH alarm
- **SBS LAB 31.** Configuring vCenter to send and receive email

9.2. Scheduled Tasks
- **SBS LAB 32.** Scheduled Tasks

9.3. Alarms
- **SBS LAB 33.** Cresting an Alarm for one Inventory Item
- **SBS LAB 34.** Creating an Alarm for the whole environment

Module 10. Virtual Networking

10.1. 802.2 Networking Terms

10.2. Virtual Switches
- **SBS LAB 35.** Create a VMware Standard Virtual Switch (vSS)

10.3. Port Groups and VLANs
- **SBS LAB 36.** Create a Port Group using VLANs

10.4. Best Practices Network Configuration
- **SBS LAB 37.** Add physical NICs and create redundancy
- **SBS LAB 38.** Create separate network for non-management VMs (production)

10.5. Standard vSwitch Properties
- **SBS LAB 39.** Security policy
- **SBS LAB 40.** Set Load Balancing
- **SBS LAB 41.** Set Failover Policy

Module 11. The VMkernel port group

11.1. What is a VMkernel in reality?

11.2. Properties of the VMkernel
- **SBS LAB 42.** Create Redundant iSCSI Network Connections
- **SBS LAB 43.** Set vSwitch Load Balancing for compliance with vSphere™ Port Binding requirements

Module 12. vSphere™ Storage

12.1. Terms

12.2. Redundant Array of Independent Disks (RAID)

12.3. Local Storage

12.4. Virtual SAN (HP VSA, VSA)

12.5. Network Attached Storage (NAS)
- **SBS LAB 44.** Add NFS Share

12.6. SAN Storage

12.7. Presenting Block Storage to vSphere™
- **SBS LAB 45.** Add ISCSI SAN Storage Adapter
- **SBS LAB 46.** Set Port Binding for iSCSI

12.8. VMFS File System
- **SBS LAB 47.** Formatting a LUN as VMFS 6
- **SBS LAB 48.** Setting the Path Selection Policy (PSP) for one LUN (GUI)

Module 13. VMware HA and DRS Clusters

13.1. VMware vSphere Clusters overview

13.2. VMware vSphere Distributed Resource Scheduler (DRS)

13.3. VMware vSphere High Availability (HA)

13.4. vMotion
- **SBS LAB 49.** Create VMkernel interface for vMotion
- **SBS LAB 50.** Join Class data center

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- **SBS LAB 51.** Test vMotion

13.5. Cluster Management
- **SBS LAB 52.** Create HA and DRS cluster

13.6. Distributed Power Management (DPM)
- **SBS LAB 53.** Configure DPM

Module 14. Virtual Machine Deployment Techniques

14.1. Templates and Clones
- **SBS LAB 54.** Create a vCenter Clone
- **SBS LAB 55.** Use vSphere™ Customization Specification (Sysprep)
- **SBS LAB 56.** Convert to template
- **SBS LAB 57.** Deploy a new VM from Template

14.2. Preparing VMs for production use
- **SBS LAB 58.** Extending a VM disk live
- **SBS LAB 59.** Adding a disk to a mission critical Server
- **SBS LAB 60.** Static IP and domain join
- **SBS LAB 61.** Creating proper service account

Module 15. vSphere™ Fault Tolerance (FT)
- **SBS LAB 62.** Enabling FT on a VM

Module 16. VMware vSphere Update Manager (VUM)

16.1. Upgrading ESXi Servers between versions
- **SBS LAB 63.** Import ISO Image for ESXi Upgrade
- **SBS LAB 64.** Create Static Baseline for ESXi Upgrade to 6.7
- **SBS LAB 65.** Remediate ESXi Hosts to 6.7

16.2. Patching ESXi Hosts within a version (security)
- **SBS LAB 66.** Create a Dynamic Baseline
- **SBS LAB 67.** Remediate ESXi Hosts to latest build number

16.3. Updating VMware Tools
- **SBS LAB 68.** Create a Dynamic Baseline to update VMware Tools to latest version

Module 17. vSphere™ Permissions, Cloud Computing and Resource Pools

17.1. Understanding vSphere™ Roles and Privileges
- **SBS LAB 69.** Create a vSphere™ Role for users/groups

17.2. Understanding Resource Pools
- **SBS LAB 70.** Create Resource Pool(s)

17.3. Understanding vSphere™ Permissions
- **SBS LAB 71.** Apply vSphere™ user-defined Role to a Resource Pool
- **SBS LAB 72.** Apply vSphere™ user-defined Role to a vNetwork (Port Group)
- **SBS LAB 73.** Apply vSphere™ user-defined Role to a Storage Volume

Module 18. Performance Charts and Monitoring

18.1. Metrics and Thresholds

18.2. Using Performance Charts

Module 19. Backup Techniques for a Virtualized Data Center

19.1. Third Party Backup in vSphere™
- **SBS LAB 74.** Configure a Windows server as vSphere™
- **SBS LAB 75.** Installing Veeam Backup & Replication
- **SBS LAB 76.** Configure Veeam
- **SBS LAB 77.** Configuring a backup job

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SBS LAB 78. Restoring from a backup

Module 20. Appendix A – Useful Tools
Module 21. Appendix B – Terms
Module 22. Appendix C – VI Cheat Sheet
Module 23. Appendix D– List of Available Command Structures
Module 24. Appendix E– VMware High Availability Advanced Options
Module 25. Appendix F – VMware DRS Advanced Options
Module 26. Appendix G– Shortcuts to Microsoft Console Commands
Module 27. Appendix H– Valid NTP Servers