



Title: VMware® vSphere™ 6.X 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

Overview: VMware vSphere™ 6.X 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 GUI tools and VMware vSphere HTML5 Web Client 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:

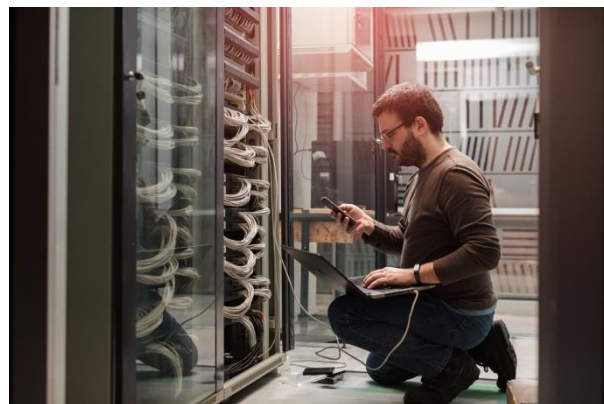
What's new in VMware vSphere:

- **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

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!**

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.X including:

- Custom SBS labs available to supplement and enhance training
- 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
- Implement and use Distributed Power Management (DPM)
- 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™ 6.0 / 6.5 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?
- 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)
- 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.** Creating 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
 - 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
 - SBS LAB 78. Restoring from a backup



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- 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