

# VCP6-DCV Delta Exam

## Study Guide

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## Section 1: Configure and Administer vSphere Security

### Objective 1.1: Configure and Administer Role-based Access Control

- Identify common vCenter Server privileges and roles
- Describe how permissions are applied and inherited in vCenter Server
- View/Sort/Export user and group lists
- Add/Modify/Remove permissions for users and groups on vCenter Server inventory objects
- Create/Clone/Edit vCenter Server Roles
- Determine the correct roles/privileges needed to integrate vCenter Server with other VMware products
- Determine the appropriate set of privileges for common tasks in vCenter Server

### Objective 1.2: Secure ESXi, vCenter Server, and vSphere Virtual Machines

- Enable/Configure/Disable services in the ESXi firewall
- Enable Lockdown Mode
- Configure network security policies
- Add an ESXi Host to a directory service
- Apply permissions to ESXi Hosts using Host Profiles
- Configure virtual machine security policies
- Create/Manage vCenter Server Security Certificates

### Objective 1.3: Enable SSO and Active Directory Integration

- Configure/Manage Active Directory Authentication
- Configure/Manage Platform Services Controller (PSC)
- Configure/Manage VMware Certificate Authority (VMCA)
- Enable/Disable Single Sign-On (SSO)
- Identify available authentication methods with VMware vCenter

## Section 2: Configure and Administer Advanced vSphere Networking

### Objective 2.1: Configure Advanced Policies/Features and Verify Network Virtualization Implementation

- Identify vSphere Distributed Switch (vDS) capabilities
- Create/Delete a vSphere Distributed Switch
- Add/Remove ESXi hosts from a vSphere Distributed Switch
- Add/Configure/Remove dvPort groups
- Add/Remove uplink adapters to dvUplink groups
- Configure vSphere Distributed Switch general and dvPort group settings
- Create/Configure/Remove virtual adapters
- Migrate virtual machines to/from a vSphere Distributed Switch
- Configure LACP on Uplink portgroups
- Describe vDS Security Policies/Settings
- Configure dvPort group blocking policies
- Configure load balancing and failover policies

- Configure VLAN/PVLAN settings
- Configure traffic shaping policies
- Enable TCP Segmentation Offload support for a virtual machine
- Enable Jumbo Frames support on appropriate components
- Determine appropriate VLAN configuration for a vSphere implementation

#### Objective 2.2: Configure Network I/O Control (NIOC)

- Identify Network I/O Control requirements
- Identify Network I/O Control capabilities
- Enable/Disable Network I/O Control
- Monitor Network I/O Control

#### Objective 2.3: Configure vSS and vDS Policies

- Identify common vSS and vDS policies
- Describe vDS Security Policies/Settings
- Configure dvPort group blocking policies
- Configure load balancing and failover policies
- Configure VLAN/PVLAN settings
- Configure traffic shaping policies
- Enable TCP Segmentation Offload support for a virtual machine
- Enable Jumbo Frames support on appropriate components
- Determine appropriate VLAN configuration for a vSphere implementation

## Section 3: Configure and Administer Advanced vSphere Storage

### Objective 3.1: Manage vSphere Storage Virtualization

- Identify storage adapters and devices
- Identify storage naming conventions
- Identify hardware/dependent hardware/software iSCSI initiator requirements
- Compare and contrast array thin provisioning and virtual disk thin provisioning
- Describe zoning and LUN masking practices
- Scan/Rescan storage
- Configure FC/iSCSI LUNs as ESXi boot devices
- Create an NFS share for use with vSphere
- Enable/Configure/Disable vCenter Server storage filters
- Configure/Edit hardware/dependent hardware initiators
- Enable/Disable software iSCSI initiator
- Configure/Edit software iSCSI initiator settings
- Configure iSCSI port binding
- Enable/Configure/Disable iSCSI CHAP
- Determine use case for hardware/dependent hardware/software iSCSI initiator
- Determine use case for and configure array thin provisioning

### Objective 3.2: Configure Software-defined Storage

- Configure/Manage VMware Virtual SAN

- Create/Modify VMware Virtual Volumes (VVOLs)
- Configure Storage Policies
- Enable/Disable Virtual SAN Fault Domains

#### Objective 3.3: Configure vSphere Storage Multi-pathing and Failover

- Configure/Manage Storage Load Balancing
- Identify available Storage Load Balancing options
- Identify available Storage Multi-pathing Policies
- Identify features of Pluggable Storage Architecture (PSA)
- Configure Storage Policies
- Enable/Disable Virtual SAN Fault Domains

#### Objective 3.4: Perform Advanced VMFS and NFS Configurations and Upgrades

- Identify VMFS and NFS Datastore properties
- Identify VMFS5 capabilities
- Create/Rename/Delete/Unmount a VMFS Datastore
- Mount/Unmount an NFS Datastore
- Extend/Expand VMFS Datastores
- Place a VMFS Datastore in Maintenance Mode
- Identify available Raw Device Mapping (RDM) solutions
- Select the Preferred Path for a VMFS Datastore
- Enable/Disable vStorage API for Array Integration (VAAI)
- Disable a path to a VMFS Datastore
- Determine use case for multiple VMFS/NFS Datastores

#### Objective 3.5: Setup and Configure Storage I/O Control

- Enable/Disable Storage I/O Control
- Configure/Manage Storage I/O Control
- Monitor Storage I/O Control

## Section 4: Upgrade a vSphere Deployment

#### Objective 4.1: Perform ESXi Host and Virtual Machine Upgrades

- Identify upgrade requirements for ESXi hosts
- Upgrade a vSphere Distributed Switch
- Upgrade VMware Tools
- Upgrade Virtual Machine hardware
- Upgrade an ESXi Host using vCenter Update Manager
- Stage multiple ESXi Host upgrades
- Determine whether an in-place upgrade is appropriate in a given upgrade scenario

#### Objective 4.2: Perform vCenter Server Upgrades

- Identify steps required to upgrade a vSphere implementation
- Identify upgrade requirements for vCenter
- Upgrade vCenter Server Appliance (VCA)
- Identify the methods of upgrading vCenter

- Identify/troubleshoot vCenter upgrade errors

## Section 5: Administer and Manage vSphere Resources

### Objective 5.1: Configure Advanced/Multilevel Resource Pools

- Describe the Resource Pool hierarchy
- Define the Expandable Reservation parameter
- Describe vFlash architecture
- Create/Remove a Resource Pool
- Configure Resource Pool attributes
- Add/Remove virtual machines from a Resource Pool
- Create/Delete vFlash Resource Pool
- Assign vFlash resources to VMDKs
- Determine Resource Pool requirements for a given vSphere implementation
- Evaluate appropriate shares, reservations and limits for a Resource Pool based on virtual machine workloads

## Section 6: Backup and Recover a vSphere Deployment

### Objective 6.1: Configure and Administer a vSphere Backups/Restore/Replication Solution

- Identify snapshot requirements
- Identify VMware Data Protection requirements
- Explain VMware Data Protection sizing Guidelines
- Identify VMware Data Protection version offerings
- Describe vSphere Replication architecture
- Create/Delete/Consolidate virtual machine snapshots
- Install and Configure VMware Data Protection
- Create a backup job with VMware Data Protection
- Install/Configure/Upgrade vSphere Replication
- Configure VMware Certificate Authority (VMCA) integration with vSphere Replication
- Configure Replication for Single/Multiple VMs
- Identify vSphere Replication compression methods
- Recover a VM using vSphere Replication
- Perform a failback operation using vSphere Replication
- Determine appropriate backup solution for a given vSphere implementation

## Section 7: Troubleshoot a vSphere Deployment

### Objective 7.1: Troubleshoot vCenter Server, ESXi Hosts, and Virtual Machines

- Identify general ESXi host troubleshooting Guidelines
- Identify general vCenter troubleshooting Guidelines
- Troubleshoot Platform Services Controller (PSC) issues
- Troubleshoot common installation issues
- Monitor ESXi system health

- Locate and analyze vCenter and ESXi logs
- Export diagnostic information
- Identify common Command Line Interface (CLI) commands
- Troubleshoot common virtual machine issues
- Troubleshoot virtual machine resource contention issues
- Identify Fault Tolerant network latency issues
- Troubleshoot VMware Tools installation issues
- Identify/Troubleshoot virtual machines various states (e.g. orphaned, unknown, etc.)
- Identify virtual machine constraints
- Identify the root cause of a storage issue based on troubleshooting information
- Identify common virtual machine boot disk errors
- Identify and detect common knowledge base article solutions

#### Objective 7.2: Troubleshoot vSphere Storage and Network Issues

- Verify network configuration
- Verify storage configuration
- Troubleshoot common storage issues
- Troubleshoot common network issues
- Verify a given virtual machine is configured with the correct network resources
- Troubleshoot virtual switch and port group configuration issues
- Troubleshoot physical network adapter configuration issues
- Troubleshoot VMFS metadata consistency
- Identify Storage I/O constraints
- Monitor/Troubleshoot Storage Distributed Resource Scheduler (SDRS) issues

#### Objective 7.3: Troubleshoot vSphere Upgrades

- Identify vCenter Server and vCenter Server Appliance upgrade issues
- Create a log bundle
- Locate/Analyze VMware log bundles
- Identify alternative methods to upgrade ESXi hosts in event of failure
- Configure vCenter Logging options

## Section 8: Deploy and Consolidate vSphere Data Center

### Objective 8.1: Deploy ESXi Hosts Using Autodeploy

- Identify ESXi Autodeploy requirements
- Configure Autodeploy
- Explain PowerCLI cmdlets for Autodeploy
- Deploy/Manage multiple ESXi hosts using Autodeploy

### Objective 8.2: Customize Host Profile Settings

- Create/Edit/Remove a Host Profile from an ESXi host
- Import/Export a Host Profile
- Attach/Apply a Host Profile to an ESXi host or cluster
- Perform compliance scanning and remediation of an ESXi host using Host Profiles



## Section 9: Configure and Administer vSphere Availability Solutions

### Objective 9.1: Configure Advanced vSphere HA Features

- Explain Advanced vSphere HA settings
- Enable/Disable Advanced vSphere HA settings
- Explain how vSphere HA interprets heartbeats
- Interpret and correct errors during conversion
- Identify virtual machine override priorities
- Identify Virtual Machine Component Protection (VMCP) settings

### Objective 9.2: Configure Advanced vSphere DRS Features

- Identify Distributed Resource Scheduler (DRS) affinity rules
- Enable/Disable Distributed Resource Scheduler (DRS) affinity rules
- Identify Distributed Resource Scheduler (DRS) Automation levels
- Configure Distributed Resource Scheduler (DRS) Automation levels

### Objective 9.3: Setup and Configure AppHA

- Identify vSphere App HA requirements
- Identify available services protected by vSphere App HA
- Add applications to vSphere App HA
- Configure vSphere App HA policies

## Section 10: Administer and Manage vSphere Virtual Machines

### Objective 10.1: Configure Advanced vSphere Virtual Machine Settings

- Identify available virtual machine configuration settings
- Interpret virtual machine configuration files (.vmx) settings
- Identify virtual machine DirectPath I/O feature
- Enable/Disable Advanced virtual machine settings

### Objective 10.2: Create and Manage a Multi-site Content Library

- Configure Content Library to work across sites
- Configure Content Library authentication
- Set/Configure Content Library roles
- Add/Remove Content Libraries

## Section 11: Knowledge References

### Section 1: Configure and Administer vSphere Security

- [vSphere Installation and Setup Guide](#)
- [vSphere Security Guide](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- [vSphere Administration with the vSphere Client Guide](#)
- [Security of the VMware vSphere® Hypervisor](#)
- [vSphere Administration with the vSphere Client Guide](#)
- [VMware Hardened Virtual Appliance Operations Guide added to Tech Resource Directory](#)

- [VMware vCenter Server™ 6.0 Deployment Guide](#)

## Section 2: Configure and Administer Advanced vSphere Networking

- [vSphere Installation and Setup Guide](#)
- [vSphere Networking Guide](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- [Leveraging NIC Technology to Improve Network Performance in VMware vSphere](#)
- [Performance Evaluation of Network I/O Control in VMware vSphere 6](#)

## Section 3: Configure and Administer Advanced vSphere Storage

- [vSphere Installation and Setup Guide](#)
- [vSphere Storage Guide](#)
- [Leveraging NIC Technology to Improve Network Performance in VMware vSphere](#)
- [Best Practices for Running VMware vSphere® on iSCSI](#)
- [Administering VMware Virtual SAN](#)
- [What's New: VMware Virtual SAN 6.0](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- [Virtual SAN 6.0 Performance: Scalability and Best Practices](#)
- [Multipathing Configuration for Software iSCSI Using Port Binding](#)
- [VMware vSphere® Storage APIs – Array Integration \(VAAI\)](#)
- [vSphere Resource Management Guide](#)

## Section 4: Upgrade a vSphere Deployment

- [vSphere Upgrade Guide](#)
- [vSphere Virtual Machine Administration Guide](#)
- [vSphere Installation and Setup Guide](#)
- [VMware vCenter Server™ 6.0 Deployment Guide](#)
- [Command-Line Installation and Upgrade of VMware vCenter Server 6.0 for Windows](#)
- [Command-Line Installation and Upgrade of VMware vCenter Server Appliance 6.0](#)

## Section 5: Administer and Manage vSphere Resources

- [vSphere Resource Management](#)
- [vSphere Virtual Machine Administration Guide](#)
- [What's New in VMware vSphere® Flash Read Cache®](#)

## Section 6: Backup and Recover a vSphere Deployment

- [VMware vSphere® Data Protection™ 6.0](#)
- [vSphere Data Protection Administration Guide](#)
- [VMware vSphere® Data Protection™ Evaluation Guide](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- [VMware vSphere Replication Administration](#)

## Section 7: Troubleshoot a vSphere Deployment

- [vSphere Installation and Setup Guide](#)
- [vSphere Troubleshooting Guide](#)
- [vSphere Virtual Machine Administration Guide](#)
- [vSphere Security Guide](#)

- [vSphere Server and Host Management Guide](#)
- [vSphere Monitoring and Performance Guide](#)
- [vSphere Networking Guide](#)
- [vSphere Upgrade Guide](#)

#### Section 8: Deploy and Consolidate vSphere Data Center

- [vSphere Installation and Setup Guide](#)
- [vSphere Host Profiles Guide](#)

#### Section 9: Configure and Administer vSphere Availability Solutions

- [vSphere Installation and Setup Guide](#)
- [vSphere Availability Guide](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- [vSphere Resource Management Guide](#)
- [vSphere App HA Installation and Configuration Guide](#)
- [vSphere App HA User's Guide](#)

#### Section 10: Administer and Manage vSphere Virtual Machines

- [vSphere Installation and Setup Guide](#)
- [vSphere Administration with the vSphere Client Guide](#)
- [vSphere Virtual Machine Administration Guide](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)