VCP6-DCV Foundations Exam

Study Guide

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Section 1: Install and configure vCenter Server and ESXI

Objective 1.1: Identify vSphere Architecture and Solutions for a given use case

- Identify available vSphere editions and features
- Identify the various data center solutions that interact with vSphere (Horizon, SRM, etc.)
- Explain ESXi and vCenter Server architectures
- Identify new solutions offered in the current version
- Determine appropriate vSphere edition based on customer requirements

Objective 1.2: Install and configure vCenter Server

- Identify vCenter Server and vCenter Server database requirements
- Size the vCenter Server database
- Identify vCenter Server software requirements
- License vCenter Server
- Create a database connection to the vCenter Server database
- Determine availability requirements for a vCenter Server in a given vSphere implementation

Objective 1.3: Install and configure ESXi

- Identify ESXi host requirements
- Perform an interactive installation of ESXi using media or PXE
- Configure NTP on an ESXi Host
- Configure DNS and routing on an ESXi Host
- License an ESXi host

Section 2: Configure vSphere Networking

Objective 2.1: Configure vSphere Standard Switches (vSS)

- Identify vSphere Standard Switch (vSS) capabilities
- Create/Delete a vSphere Standard Switch
- Add/Configure/Remove vmnics on a vSphere Standard Switch
- Configure vmkernel ports for network services
- Add/Edit/Remove port groups on a vSphere Standard Switch
- Determine use case for a vSphere Standard Switch

Objective 2.2: Configure vSphere Distributed Switches (vDS)

- 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 adapters to/from a vSphere Standard Switch
- Migrate virtual machines to/from a vSphere Distributed Switch
- Configure LACP on Uplink portgroups

- Determine use case for a vSphere Distributed Switch

Objective 2.3: Configure vSS and vDS features based on given requirements

- Identify common vSS and vDS policies
- Describe vDS Security Polices/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 vSphere Storage

Objective 3.1: Connect shared storage devices to vSphere

- Identify storage adapters and devices
- Identify storage naming conventions
- Identify hardware/dependent hardware/software iSCSI initiator requirements
- Describe zoning and LUN masking practices
- Create an NFS share for use with vSphere
- Configure/Edit hardware/dependent hardware initiator
- Configure/Edit software iSCSI initiator settings
- Configure iSCSI port binding
- Determine use case for hardware/dependent hardware/software iSCSI initiator

Objective 3.2: Connect shared storage devices to vSphere

- Identify benefits of NFS 4.1
- Identify Virtual SAN Hardware Requirements
- Identify Virtual SAN Network Requirements
- Determine use cases for Virtual SAN Configurations
- Configure/Manage Virtual Volumes (VVOLS)

Objective 3.3: Create and configure VMFS and NFS datastores

- Identify supported NFS versions
- Configure NFS storage for VMDK formatting
- Configure storage multi-pathing
- Determine VMFS requirements
- Configure Storage Distributed Resource Scheduler (SDRS)
- Configure/Manage VMFS Extents

Section 4: Deploy and administer virtual machines and vApps

Objective 4.1: Create and deploy virtual machines

- Identify capabilities of virtual machine hardware versions
- Identify methods to access and use a virtual machine console

- Configure/Manage virtual machine templates
- Identify virtual machine requirements for DirectPath I/O passthrough
- Configure and deploy a Guest OS into a new virtual machine
- Configure/Modify virtual CPU and Memory resources according to OS and application requirements

Objective 4.2: Create and deploy vApps

- Identify vApp requirements
- Create/Clone/Export a vApp
- Add objects to an existing vApp
- Configure/Edit vApp settings

Objective 4.3: Manage virtual machine clones and templates

- Identify Cloning and Template options
- Configure virtual machine options
- Add/Remove virtual machines into inventory
- Create a template from an existing virtual machine
- Deploy a virtual machine from a template
- Update existing virtual machine templates
- Configure CPU/Memory Reservation and Shares

Objective 4.4: Administer virtual machines and vApps

- Identify files used by virtual machines
- Identify locations for virtual machine configuration files and virtual disks
- Identify common practices for securing virtual machines
- Configure IP Pools
- Configure/Manage Content Library
- Adjust virtual machine resources (shares, limits and reservations) based on virtual machine workloads

Section 5: Establish and maintain availability and resource management features

Objective 5.1: Create and configure VMware clusters

- Describe DRS virtual machine entitlement
- Create/Delete a DRS/HA Cluster
- Add/Remove ESXi Hosts from a DRS/HA Cluster
- Add/Remove virtual machines from a DRS/HA Cluster
- Configure Storage DRS
- Configure VM Component Protection (VMCP)
- Configure migration thresholds for DRS and virtual machines
- Configure automation levels for DRS and virtual machines
- Configure admission control for HA and virtual machines
- Determine appropriate failover methodology and required resources for an HA implementation

Objective 5.2: Plan and implement VMware fault tolerance

- Identify VMware Fault Tolerance requirements
- Configure VMware Fault Tolerance networking
- Enable/Disable VMware Fault Tolerance on a virtual machine
- Test a Fault Tolerant configuration
- Determine use case for enabling VMware Fault Tolerance on a virtual machine

Objective 5.3: Create and administer resource pools

- Describe the Resource Pool hierarchy
- 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

Objective 5.4: Migrate virtual machines

- Identify ESXi host and virtual machine requirements for vMotion and Storage vMotion
- Identify Enhanced vMotion Compatibility CPU requirements
- Identify Long Distance vMotion requirements
- Identify snapshot requirements for vMotion/Storage vMotion migration
- Migrate virtual machines using vMotion/Storage vMotion
- Migrate a powered-off or suspended virtual machine

Objective 5.5: Backup and restore virtual machines

- 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 Date Protection
- Install/Configure/Upgrade vSphere Replication
- Configure Replication for Single/Multiple VMs
- Recover a VM using vSphere Replication
- Determine appropriate backup solution for a given vSphere implementation

Objective 5.6: Update ESXi and virtual machines

- Identify patching requirements for ESXi hosts and virtual machine hardware/tools
- 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

- Install and Configure vCenter Update Manager
- Configure patch download options
- Create/Edit/Delete an Update Manager baseline
- Attach an Update Manager baseline to an ESXi host or cluster
- Scan and remediate ESXi hosts and virtual machine hardware/tools using Update Manager
- Stage ESXi host updates

Section 6: Perform basic troubleshooting

Objective 6.1: Perform basic troubleshooting of ESXi and vCenter Installation
- Identify general ESXi host troubleshooting Guidelines
- Identify general vCenter troubleshooting Guidelines
- Troubleshoot common installation issues
- Monitor ESXi system health
- Export diagnostic information

Objective 6.2: Perform basic troubleshooting of ESXi and vCenter operation
- Verify network configuration
- Troubleshoot common storage issues
- Troubleshoot common virtual machine 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
- Identify and detect common knowledge base article solutions

Objective 6.3: Perform basic troubleshooting of VM operation
- 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

Objective 6.4: Identify and troubleshoot basic misconfigurations through the GUI
- Set/Manage settings via vSphere Web Client
- Identify incorrectly configured properties/settings within vSphere Web Client
- Correct common warnings and alerts within vSphere Web Client

Section 7: Perform basic monitoring of a vSphere implementation

Objective 7.1: Monitor ESXi, vCenter Server, and virtual machines
- Describe how Tasks and Events are viewed in vCenter Server
- Identify critical performance metrics
- Explain common memory metrics

- Explain common CPU metrics
- Explain common network metrics
- Explain common storage metrics
- Compare and contrast Overview and Advanced Charts
- Configure SNMP for vCenter Server
- Configure Active Directory and SMTP settings for vCenter Server
- Configure vCenter Server logging options
- Create a log bundle
- Create/Edit/Delete a Scheduled Task
- Configure/View/Print/Export resource maps
- Start/Stop/Verify vCenter Server service status
- Start/Stop/Verify ESXi host agent status
- Configure vCenter Server timeout settings
- Monitor/Administer vCenter Server connections
- Create an Advanced Chart
- Determine host performance using guest Performance Monitor
- Given performance data, identify the affected vSphere resource

Objective 7.2: Create and administer vCenter Server alarms
- List vCenter Server default utilization alarms
- List vCenter Server default connectivity alarms
- List possible actions for utilization and connectivity alarms
- Create a vCenter Server utilization alarm
- Create a vCenter Server connectivity alarm
- Configure alarm triggers
- Configure alarm actions
- For a given alarm, identify the affected resource in a vSphere implementation

Objective 7.3: Install, configure, and manage vCenter Operations Manager
- Differentiate Major/Minor vCOPs badges
- Explain vCOPs architecture
- Deploy and Configure vCOPs appliance
- Upgrade vCOPs
- Understand metrics used by Major/Minor vCOPs badges
- Monitor vSphere environment
- For a given alarm, identify the affected resource in a vSphere implementation

Section 8: Knowledge References
Section 1: Install and configure vCenter Server and ESXI
- What's New in vSphere 6.0 - Platform
- vSphere Installation and Setup Guide
- vSphere Availability Guide
- vSphere Storage Guide

- vSphere Server and Host Management Guide
- VMware vCenter Server™ 6.0 Deployment Guide
- vSphere Client / vSphere Web Client

Section 2: Configure vSphere Networking
- vSphere Installation and Setup Guide
- vSphere Networking Guide
- What's New in the VMware vSphere® 6.0 Platform

Section 3: Configure vSphere Storage
- vSphere Installation and Setup Guide
- vSphere Storage Guide
- What's New in the VMware vSphere® 6.0 Platform
- Administering VMware Virtual SAN
- vSphere Storage Guide
- What's New: VMware Virtual SAN 6.0

Section 4: Deploy and administer virtual machines and vApps
- vSphere Virtual Machine Administration Guide
- vSphere Administration with the vSphere Client Guide

Section 5: Establish and maintain availability and resource management features
- vCenter Server and Host Management Guide
- vSphere Availability Guide
- vSphere Resource Management Guide
- vSphere Administration with the vSphere Client Guide
- vSphere Virtual Machine Administration Guide
- vSphere Storage Guide
- What's New in VMware vSphere® Flash Read Cache®
- vCenter Server and Host Management Guide
- 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
- vSphere Host Profiles Guide
- Installing and Administering VMware vSphere Update Manager Guide

Section 6: Perform basic troubleshooting
- vSphere Troubleshooting Guide
- vSphere Installation and Setup Guide
- vSphere Networking Guide
- vSphere Storage Guide
- vSphere Administration with the vSphere Client Guide
- vSphere Virtual Machine Administration Guide

Section 7: Perform basic monitoring of a vSphere implementation

- [VMware vCenter Operations Manager Getting Started Guide – vSphere UI](#)
- [VMware vCenter Operations Manager Getting Started Guide – Custom UI](#)
- [VMware vCenter Operations Manager Administration Guide (Custom UI)](#)
- [vCenter Operations Manager Evaluation Guide](#)
- [vSphere Monitoring and Performance Guide](#)
- [vCenter Server and Host Management Guide](#)
- [vSphere Resource Management Guide](#)
- [vSphere Troubleshooting Guide](#)