

# VMware Certified Professional 5 – Data Center Virtualization

## Exam Blueprint

VCP5-DCV Exam testing center exam code: VCP550  
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Disclaimer:

This blueprint is intended to provide information about the objectives covered by this exam, related resources, and recommended courses. The material contained within this blueprint is not intended to guarantee that a passing score will be achieved on the exam. VMware recommends that a candidate thoroughly understands the objectives indicated in this guide and utilizes the resources and courses recommended in this guide where needed to gain that understanding.

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## **1. The Exam**

### 1.1 Purpose of Exam

The VMware Certified Professional 5 – Data Center Virtualization (VCP5-DCV) Exam tests candidates on their skills and abilities installing, configuring and administering a VMware vSphere® 5 environment. Successful candidates demonstrate mastery of these skills and abilities.

Note: This exam contains new content on vSphere version 5.5, so please prepare accordingly.

### 1.2 Number of Questions

The VCP5-DCV Exam consists of 135 questions and a short pre-exam survey consisting of 8 questions.

### 1.3 Passing Score

The passing score for this exam is 300, using a scaled scoring method. The scale is from 100-500. Scaled scores are calculated using a mathematical formula that considers a variety of factors, including the number and type of exam questions included in a specific version of the exam. Because this combination may vary in different versions of the same examination, scaled scores provide a fair score for each individual based on the version of the exam taken.

### 1.4 How Objectives Relate to Questions on the Exam

Objectives summarize what the test is designed to measure. Objectives are developed by Exam Developers and Subject Matter Experts based on identified tasks that relate to the job of implementing and administering a vSphere environment. Once the initial development process is complete, these objectives are verified using an external group of individuals in the actual job role. The external survey determines the number of questions for each objective, which relates directly to the criticality of the task in the job role.

### 1.5 Languages

The exam is available in English.

### 1.6 Time Limit

The time limit for the exam is 120 minutes, with an additional 15 minutes to complete the survey questions and agreements. Candidates who take the VCP550 Exam and have a home address in a country where English is not a primary language will have an additional 30 minutes added to the exam time. This time extension is automatic, no additional action is required from the candidate. For the purposes of this exam, countries where English is considered one of the primary languages are Australia, Belize, Bermuda, Canada, Guernsey, Isle of Man, Ireland, Jersey, New Zealand, South Africa, the United Kingdom, and the United States.

## 1.7 Scheduling and Taking the Exam

This exam is administered through Pearson VUE. Details on the rules and procedures associated with requesting authorization, registering, and sitting for the exam are available [here](#). For the latest certification news and more, please [sign up for updates](#).

## 1.8 Certification Tracks

The VCP5-DCV Exam is a core component of the VCP-DCV certification. The certification requires a passing score on the exam and successful completion of a required VMware authorized course. Courses that meet this requirement are listed in [section 4](#).

The VCP5-DCV certification is a requirement for several certification tracks, including the VMware Certified Advanced Professional 5 – Data Center Administration, the VMware Certified Advanced Professional 5 – Data Center Design and the VMware Certified Design Expert 5 – Data Center Virtualization.

## 1.9 Recertification

The recertification policy helps ensure that all VCP holders are current in their VMware training, and encourages certified professionals to expand the depth and breadth of their knowledge by recertifying in a different track or at a higher level.

Certification holders must recertify within two years of earning their most recent VCP certification. Prerequisite course requirements are waived, but the exam and exam cost are the same as those required for initial certification.

There are three ways to recertify:

- Take the current exam for the VCP certification currently held. For example, a VCP3 could take the current VCP5-Data Center Virtualization (VCP550) exam.
- Earn a new VCP certification in a different solution track. For example, a VCP-Cloud could recertify by earning a VCP-Desktop (VCP5D510) certification.
- Advance to the next level by earning a VMware Certified Advanced Professional (VCAP) certification.

Certification holders who do not maintain training currency will have their certifications revoked. Re-earning a revoked certification requires satisfying the same prerequisites as any candidate attempting to earn that certification for the first time. Revoking certification entails:

- Loss of access to the VCP portal
- Loss of the right to use VMware certification logos
- Notification of the lost certification status on MyLearn transcripts

For more information on the certification program or to register for our recommended courses, please visit [vmware.com/go/recertification](https://vmware.com/go/recertification) or contact [certification@vmware.com](mailto:certification@vmware.com).

## 1.10 Retake Policy

If a candidate fails an exam on the first attempt, he or she must wait seven calendar days from their original appointment time before he or she can register to retake the exam. There is no limit to the number of retakes a candidate can attempt, but the same waiting period applies after each failed attempt. Once the exam is passed, a candidate may not make any further attempts. Please note that the exam is only available for a limited time, after which the retake policy would apply to the live exam.

## 1.11 Exam Security

VMware reserves the right to refuse certifying a candidate who violates exam security policies. This includes copying and redistribution of exam material, using any type of study material during the exam itself, attempting to photograph exam items and taking an exam using a false identity. Pearson VUE testing centers will take your photo and capture your digital signature upon arrival to take the exam.

## **2. Intended Audience**

### 2.1 Intended Audience

A candidate for the VCP-DCV certification has approximately six months experience working with a vSphere implementation. They are typically infrastructure personnel who are capable of installing and configuring ESXi hosts and can use VMware vCenter™ Server to monitor, manage, troubleshoot and administer virtual machines. The successful candidate will most likely have additional industry-recognized general IT certifications or the equivalent experience (typically 2-5 years).

## **3. Objectives covered in the VCP5-DCV Exam**

### 3.1 Introduction

It is recommended that candidates have the knowledge and skills necessary to install, configure and administer a vSphere environment before taking the VCP5-DCV Exam. It is also recommended that the candidate complete the course requirement prior to attempting the exam. It is not required that the course is completed prior to the exam, but the course requirement must be completed in order to obtain the VCP5-DCV certification.

### 3.2 Objectives

Prior to taking this exam, candidates should understand each of the following objectives. Each objective is listed below; along with related tools the candidate should have experience with, and related documentation that contains information relevant to the objective. All objectives may also be referenced in other product documentation not specifically highlighted below. The candidate should be familiar with all relevant product documentation or have an equivalent skillset.

## Section 1 – Plan, Install, Configure and Upgrade vCenter Server and VMware ESXi

### Objective 1.1 – Identify and Explain vSphere Architecture and Solutions

#### Knowledge

- 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
- Determine appropriate vSphere edition based on customer requirements

#### Tools

- [VMware vSphere Basics guide](#)
- [What's New in vSphere 5.5 - Platform](#)
- [Introduction to VMware vSphere 5](#)
- [VMware Virtualization Toolkit](#)
- [vSphere 5.x Licensing, Pricing and Packaging Whitepaper](#)

### Objective 1.2 -- Install and Configure vCenter Server

#### Knowledge

- Identify available vCenter Server editions
- Identify vCenter Server and vCenter Server database requirements
- Identify Single Sign-On requirements
- Deploy the vCenter Appliance
- Install vCenter Server into a virtual machine
- Size the vCenter Server database
- Install and Configure the vSphere Client / vSphere Web Client
- Install additional vCenter Server components
- Install/Remove vSphere Client plug-ins
- Enable/Disable vSphere Client plug-ins
- License vCenter Server
- Create a database connection to the vCenter Server database
- Determine availability requirements for a vCenter Server in a given vSphere implementation

#### Tools

- [VMware vSphere Basics guide](#)
- [vSphere Installation and Setup guide](#)
- [vCenter Server and Host Management guide](#)
- vSphere Client / vSphere Web Client

### Objective 1.3 – Install and Configure VMware ESXi

#### Knowledge

- 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
- Enable/Configure/Disable hyperthreading
- Select a CPU power management policy
- Enable/Size/Disable memory compression cache
- License an ESXi host

#### Tools

- [VMware vSphere Basics guide](#)
- [vSphere Installation and Setup guide](#)
- [vCenter Server and Host Management guide](#)
- Direct Console User Interface (DCUI)
- vSphere Client / vSphere Web Client

### Objective 1.4 – Plan and Perform Upgrades of vCenter Server and VMware ESXi

#### Knowledge

- Identify upgrade requirements for ESXi hosts
- Identify steps required to upgrade a vSphere implementation
- Upgrade a vSphere Distributed Switch
- Upgrade from VMFS3 to VMFS5
- 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

#### Tools

- [VMware vSphere Basics guide](#)
- [vSphere Installation and Setup guide](#)
- [vSphere Upgrade guide](#)
- [VMware vSphere Examples and Scenarios guide](#)
- [Installing and Administering VMware vSphere Update Manager](#)
- vSphere Client / vSphere Web Client

## Objective 1.5 –Secure vCenter Server and ESXi

### Knowledge

- Identify common vCenter Server privileges and roles
- Describe how permissions are applied and inherited in vCenter Server
- Describe Single Sign-On architecture
- Configure and administer the ESXi firewall
- Enable/Configure/Disable services in the ESXi firewall
- Enable Lockdown Mode
- Configure network security policies
- 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
- Add an ESXi Host to a directory service
- Apply permissions to ESXi Hosts using Host Profiles
- Differentiate Single-Sign-On Deployment Scenarios
- Configure and administer Single Sign-On
- Manage Single Sign-On users and groups
- Determine the appropriate set of privileges for common tasks in vCenter Server

### Tools

- [vSphere Installation and Setup guide](#)
- [vCenter Server and Host Management guide](#)
- [VMware vSphere Examples and Scenarios guide](#)
- [vSphere Security guide](#)
- [VMware® vCenter™ Single Sign-On Server](#)
- [Replacing Default vCenter 5.1 and ESXi Certificates](#)
- vSphere Client / vSphere Web Client
- Direct Console User Interface (DCUI)

## Section 2 – Plan and Configure vSphere Networking

### Objective 2.1 – Configure vSphere Standard Switches

#### Knowledge

- 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



## Tools

- [vSphere Installation and Setup guide](#)
- [vSphere Networking guide](#)
- vSphere Client / vSphere Web Client

## **Objective 2.2 – Configure vSphere Distributed Switches**

### Knowledge

- 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
- Monitor dvPort state
- Backup/Restore vDS configuration
- Configure LACP on Uplink portgroups
- Determine use case for a vSphere Distributed Switch

## Tools

- [vSphere Installation and Setup guide](#)
- [vSphere Networking guide](#)
- vSphere Client / vSphere Web Client

## **Objective 2.3 – Configure vSS and vDS Policies**

### Knowledge

- 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

## Tools

- [vSphere Installation and Setup guide](#)
- [vSphere Networking guide](#)
- vSphere Client / vSphere Web Client

## **Section 3 – Plan and Configure vSphere Storage**

### **Objective 3.1 – Configure Shared Storage for vSphere**

#### Knowledge

- 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

#### Tools

- [vSphere Installation and Setup guide](#)
- [vSphere Storage guide](#)
- [VMware vSphere Examples and Scenarios guide](#)
- vSphere Client / vSphere Web Client

### **Objective 3.2 – Create and Configure VMFS and NFS Datastores**

#### Knowledge

- 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

- Upgrade a VMFS3 Datastore to VMFS5
- Place a VMFS Datastore in Maintenance Mode
- Select the Preferred Path for a VMFS Datastore
- Disable a path to a VMFS Datastore
- Determine use case for multiple VMFS/NFS Datastores
- Determine appropriate Path Selection Policy for a given VMFS Datastore

#### Tools

- [vSphere Installation and Setup guide](#)
- [vSphere Storage guide](#)
- vSphere Client / vSphere Web Client

## **Section 4 – Deploy and Administer Virtual Machines and vApps**

### **Objective 4.1 – Create and Deploy Virtual Machines**

#### Knowledge

- Identify capabilities of virtual machine hardware versions
- Identify VMware Tools device drivers
- Identify methods to access and use a virtual machine console
- Identify virtual machine storage resources
- Place virtual machines in selected ESXi hosts/Clusters/Resource Pools
- Configure and deploy a Guest OS into a new virtual machine
- Configure/Modify disk controller for virtual disks
- Configure appropriate virtual disk type for a virtual machine
- Create/Convert thin/thick provisioned virtual disks
- Configure disk shares
- Install/Upgrade/Update VMware Tools
- Configure virtual machine time synchronization
- Convert a physical machine using VMware Converter
- Import a supported virtual machine source using VMware Converter
- Modify virtual hardware settings using VMware Converter
- Configure/Modify virtual CPU and Memory resources according to OS and application requirements
- Configure/Modify virtual NIC adapter and connect virtual machines to appropriate network resources
- Determine appropriate datastore locations for virtual machines based on application workloads

#### Tools

- [vSphere Virtual Machine Administration guide](#)
- [Installing and Configuring VMware Tools Guide](#)
- vSphere Client / vSphere Web Client

## Objective 4.2 – Create and Deploy vApps

### Knowledge

- Identify vApp settings
- Create/Clone/Export a vApp
- Add objects to an existing vApp
- Edit vApp settings
- Configure IP pools
- Suspend/Resume a vApp
- Determine when a tiered application should be deployed as a vApp

### Tools

- [vSphere Virtual Machine Administration guide](#)
- vSphere Client / vSphere Web Client

## Objective 4.3 – Manage Virtual Machine Clones and Templates

### Knowledge

- Identify Cloning and Template options
- Identify content types
- Clone an existing virtual machine
- Create a template from an existing virtual machine
- Deploy a virtual machine from a template
- Update existing virtual machine templates
- Deploy virtual appliances and/or vApps from an OVF template
- Import and/or Export an OVF template
- Create a Local/Remote Content Library with/without external storage (VMs, ISOs, Scripts, vApps)
- Publish/Subscribe/Share a Content Library
- Determine the appropriate deployment methodology for a given virtual machine application

### Tools

- [vSphere Virtual Machine Administration guide](#)
- [VMware vSphere Examples and Scenarios guide](#)
- VMware Open Virtualization Format Tool
- [OVF Tool User Guide](#)
- vSphere Client / vSphere Web Client

## Objective 4.4 – Administer Virtual Machines and vApps

### Knowledge

- Identify files used by virtual machines
- Identify locations for virtual machine configuration files and virtual disks
- Identify common practices for securing virtual machines
- Hot Extend a virtual disk
- Configure USB passthrough from an ESXi Host
- Configure Serial port redirection
- Configure virtual machine options
- Configure virtual machine power settings
- Configure virtual machine boot options
- Configure virtual machine troubleshooting options
- Assign a Storage Policy to a virtual machine
- Verify Storage Policy compliance for virtual machines
- Determine when an advanced virtual machine parameter is required
- Adjust virtual machine resources (shares, limits and reservations) based on virtual machine workloads

### Tools

- [vSphere Virtual Machine Administration guide](#)
- vSphere Client / vSphere Web Client

## Section 5 – Establish and Maintain Service Levels

### Objective 5.x – Create and Configure VMware Clusters

### Knowledge

- 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 Enhanced vMotion Compatibility
- Monitor a DRS/HA Cluster
- Configure migration thresholds for DRS and virtual machines
- Configure automation levels for DRS and virtual machines
- Enable/Configure/Disable Host Power Management/Distributed Power Management
- Enable BIOS P/C states
- Create VM-Host and VM-VM affinity rules
- Enable/Disable Host Monitoring
- Enable/Configure/Disable virtual machine and application monitoring

- Configure admission control for HA and virtual machines
- Determine appropriate failover methodology and required resources for an HA implementation
- Determine appropriate power threshold for a given implementation

#### Tools

- [vCenter Server and Host Management guide](#)
- [vSphere Availability guide](#)
- [vSphere Resource Management guide](#)
- vSphere Client

### **Objective 5.2 – Plan and Implement VMware Fault Tolerance**

#### Knowledge

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

#### Tools

- [vSphere Availability guide](#)
- vSphere Client / vSphere Web Client

### **Objective 5.3 – Create and Administer Resource Pools**

#### Knowledge

- 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

#### Tools

- [vSphere Resource Management guide](#)

- [vSphere Virtual Machine Administration guide](#)
- vSphere Client / vSphere Web Client

## Objective 5.4 – Migrate Virtual Machines

### Knowledge

- Identify ESXi host and virtual machine requirements for vMotion and Storage vMotion
- Identify Enhanced vMotion Compatibility CPU requirements
- Identify snapshot requirements for vMotion/Storage vMotion migration
- Migrate virtual machines using vMotion/Storage vMotion
- Configure virtual machine swap file location
- Migrate a powered-off or suspended virtual machine
- Utilize Storage vMotion techniques (changing virtual disk type, renaming virtual machines, etc.)

### Tools

- [vSphere Resource Management guide](#)
- [vSphere Virtual Machine Administration guide](#)
- [VMware vSphere Examples and Scenarios guide](#)
- vSphere Client / vSphere Web Client

## Objective 5.5 – Backup and Restore Virtual Machines

### Knowledge

- Identify snapshot requirements
- Identify VMware Data Protection requirements
- Explain VMware Data Protection sizing guidelines
- Differentiate between VDP and VDPA
- Describe vSphere Replication architecture
- Create/Delete/Consolidate virtual machine snapshots
- Install and Configure VMware Data Protection
- Create a backup job with VMware Data Protection
- Manage and monitor VDP capacity
- Perform a test/live full/file-level restore with VMware Data Protection
- Perform a VDR data migration
- Install/Configure/Upgrade vSphere Replication
- Configure Replication for Single/Multiple VMs
- Recover a VM using vSphere Replication
- Perform a failback operation using vSphere Replication
- Determine appropriate backup solution for a given vSphere implementation

## Tools

- [Introduction to VMware vSphere® Data Protection](#)
- [vSphere Data Protection Administration Guide](#)
- [Introduction to VMware vSphere® Replication](#)
- [VMware vSphere Replication Administration](#)
- VDR Data Migration Tool
- VDP Configure Utility
- vSphere Client / vSphere Web Client

## **Objective 5.6 – Patch and Update ESXi and Virtual Machines**

### Knowledge

- 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

### Tools

- [vSphere Host Profiles guide](#)
- [Installing and Administering VMware vSphere Update Manager guide](#)
- [Reconfiguring VMware vSphere Update Manager](#)
- [VMware vSphere Examples and Scenarios guide](#)
- vSphere Update Manager Utility
- vSphere Client / vSphere Web Client
- Update Manager Web Client

## **Section 6 – Perform Basic Troubleshooting**

### **Objective 6.1 – Perform Basic Troubleshooting for ESXi Hosts**

#### Knowledge

- Identify general ESXi host troubleshooting guidelines
- Troubleshoot common installation issues



- Monitor ESXi system health
- Export diagnostic information

#### Tools

- [vCenter Server and Host Management guide](#)
- [vSphere Monitoring and Performance guide](#)
- [vSphere Troubleshooting guide](#)
- vSphere Client / vSphere Web Client

### **Objective 6.2 – Perform Basic vSphere Network Troubleshooting**

#### Knowledge

- Verify network configuration
- 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 the root cause of a network issue based on troubleshooting information

#### Tools

- [vSphere Networking guide](#)
- [vSphere Troubleshooting guide](#)
- vSphere Client / vSphere Web Client

### **Objective 6.3 – Perform Basic vSphere Storage Troubleshooting**

#### Knowledge

- Verify storage configuration
- Troubleshoot storage contention issues
- Troubleshoot storage over-commitment issues
- Troubleshoot iSCSI software initiator configuration issues
- Troubleshoot Storage Reports and Storage Maps
- Identify the root cause of a storage issue based on troubleshooting information

#### Tools

- [vSphere Storage guide](#)
- [vSphere Troubleshooting guide](#)
- vSphere Client / vSphere Web Client

## Objective 6.4 – Perform Basic Troubleshooting for HA/DRS Clusters and vMotion/Storage vMotion

### Knowledge

- Identify HA/DRS and vMotion requirements
- Verify vMotion/Storage vMotion configuration
- Verify HA network configuration
- Verify HA/DRS cluster configuration
- Troubleshoot HA capacity issues
- Troubleshoot HA redundancy issues
- Interpret the DRS Resource Distribution Graph and Target/Current Host Load Deviation
- Troubleshoot DRS load imbalance issues
- Troubleshoot vMotion/Storage vMotion migration issues
- Interpret vMotion Resource Maps
- Identify the root cause of a DRS/HA cluster or migration issue based on troubleshooting information

### Tools

- [vSphere Availability guide](#)
- [vSphere Resource Management guide](#)
- [vSphere Monitoring and Performance guide](#)
- [vSphere Troubleshooting guide](#)
- vSphere Client / vSphere Web Client

## Section 7 – Monitor a vSphere Implementation

### Objective 7.1 – Monitor ESXi, vCenter Server and Virtual Machines

#### Knowledge

- 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

#### Tools

- [vCenter Server and Host Management guide](#)
- [vSphere Resource Management guide](#)
- [vSphere Monitoring and Performance guide](#)
- vSphere Client / vSphere Web Client

### **Objective 7.2 – Create and Administer vCenter Server Alarms**

#### Knowledge

- 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

#### Tools

- [vCenter Server and Host Management guide](#)
- [vSphere Resource Management guide](#)
- [vSphere Monitoring and Performance guide](#)
- [VMware vSphere Examples and Scenarios guide](#)
- vSphere Client / vSphere Web Client

### **Objective 7.3 – Install, Configure and Administer vCenter Operations Manager**

#### Knowledge

- 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

### Tools

- [VMware vCenter Operations Manager Getting Started Guide – vSphere UI](#)
- [VMware vCenter Operations Manager Getting Started Guide – Custom UI](#)
- [VMware vCenter Operations Manager Administration Guide](#)
- [vSphere Monitoring and Performance guide](#)
- vCenter Operations Manager Custom User Interface
- vSphere Client / vSphere Web Client

## 4. VCP5-DCV Paths and Course Requirement Options

### 4.1 VCP5-DCV Path Options

IF YOU ARE...	TRAINING COURSES	EXAM	CERTIFICATION
▶ Just starting with VMware data center virtualization technologies	▶ <i>REQUIRED</i> VMware vSphere: Install, Configure, Manage [V5.x] OR VMware vSphere: Fast Track [V5.x] OR VMware vSphere: Optimize and Scale [V5.x] OR VMware vSphere: Troubleshooting Workshop [V5.x] OR VMware vSphere with Operations Management: Fast Track [V5.1]	▶ Pass the VCP5-DCV Exam	▶ VCP5-DCV
▶ Any valid VCP level certification	▶ <i>RECOMMENDED</i> VMware vSphere: What's New [V5.x]	▶ Pass the VCP5-DCV Exam	▶ VCP5-DCV
▶ Not VCP4-DCV Certified but have completed a VCP4-DCV qualifying course: • VMware vSphere: Fast Track [V4.x] • VMware vSphere: Advanced Fast Track [V4.x] • VMware vSphere: Automation Fast Track [V4.1] • VMware vSphere: Install, Configure, Manage [V4.1] • VMware vSphere: Troubleshooting [V4.x]	▶ <i>REQUIRED</i> VMware vSphere: What's New [V5.x]	▶ Pass the VCP5-DCV Exam	▶ VCP5-DCV

VCP4 and VCP5 have been renamed VCP4-DCV (VMware Certified Professional 4 – Data Center Virtualization) and VCP5-DCV (VMware Certified Professional 5 – Data Center Virtualization) respectively. Certification requirements are subject to change and may not be retroactive to previous versions. Please check [vmware.com/certification](http://vmware.com/certification) for updates.

## 4.2 Course Requirement

In order to obtain the VCP5-DCV certification, an authorized VMware course is required. Several options are available, depending on your current status. To determine if you can take one of the listed courses, refer to the diagram in section 4.1.

### [VMware vSphere: Install, Configure, Manage \[V5.x\]](#)

A five-day, hands-on training course that explores installation, configuration and management of VMware® vSphere™, which consists of VMware ESXi™ and VMware vCenter™ Server. The course covers the following objectives:

- Deploy an ESXi host
- Deploy a vCenter Server instance
- Deploy a vCenter Server appliance
- Manage an ESXi host using vCenter Server
- Manage ESXi storage using vCenter Server
- Manage ESXi networking using vCenter Server
- Manage virtual machines using vCenter Server
- Deploy and manage thin-provisioned virtual machines
- Migrate virtual machines with VMware vSphere® vMotion®
- Manage vSphere infrastructure with VMware vSphere® Web Client and VMware vSphere® Client™
- Migrate virtual machines using VMware vSphere® Storage vMotion®
- Manage access control using vCenter Server
- Monitor resource usage using vCenter Server
- Manage VMware vSphere® High Availability, VMware vSphere® Fault Tolerance, and VMware vSphere® Data Protection™ using vCenter Server
- Apply patches using VMware vSphere® Update Manager™

This course covers a majority of the objectives (approximately 80%) covered on the VCP5-DCV Exam and is recommended for individuals who want to gain a good understanding of the objectives represented in the VCP5-DCV Exam. Please note that additional exposure to vSphere 5 is recommended before attempting the exam.

### [VMware vSphere: Fast Track \[V5.x\]](#)

A five-day, intensive, extended-hours training course focused on installing, configuring, and managing VMware vSphere® 5. The course combines the content of the VMware vSphere: Install, Configure, Manage course with advanced tasks and skills for configuring a highly available and scalable virtual infrastructure. The course is based on VMware ESXi™ 5.x and VMware vCenter Server™ 5.x. The course covers the following objectives:

- Configure and manage ESXi networking and storage
- Create, configure, migrate, manage, and monitor virtual machines and virtual appliances
- Manage user access to the VMware® virtual infrastructure
- Use vCenter Server to monitor resource usage
- Implement VMware vSphere® High Availability and VMware vSphere® Fault Tolerance
- Use host profiles to manage ESXi configuration compliance

- Use vSphere distributed switches to scale networking
- Use policy-driven storage and VMware vSphere® Storage DRS™ to scale storage
- Use VMware vSphere® Update Manager™ to apply ESXi patches
- Use VMware vSphere® Management Assistant to manage vSphere
- Deploy ESXi, vCenter Server, and VMware® vCenter Server™ Appliance™
- Use VMware vSphere® ESXi™ Image Builder CLI to create an ESXi image
- Use VMware vSphere® Auto Deploy™ to provision ESXi hosts

The extended nature of this course allows for a deeper and wider coverage of the objectives covered on the VCP5-DCV exam and is strongly recommended for individuals who want to gain a better understanding of the objectives represented in the VCP5-DCV exam. Please note that additional exposure to vSphere 5.x is recommended before attempting the exam.

### [VMware vSphere: Optimize and Scale \[V5.x\]](#)

A five-day, hands-on training course for experienced VMware vSphere® personnel that teaches advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure. The course is based on VMware vSphere® ESXi™ 5.x and VMware® vCenter™ Server 5.x. The course covers the following objectives:

- Configure and manage ESXi networking and storage for a large and sophisticated enterprise
- Manage changes to the vSphere environment
- Optimize the performance of all vSphere components
- Troubleshoot operational faults and identify their root causes
- Use VMware vSphere® ESXi™ Shell and VMware vSphere® Management Assistant to manage vSphere
- Use VMware vSphere® Auto Deploy™ to provision ESXi hosts

This course covers some objectives (approximately 20%) covered on the VCP5-DCV Exam. It is recommended for experienced individuals who already have a strong understanding of the objectives in the VCP5-DCV Exam and want additional training that will still satisfy the VCP5-DCV certification course requirement. Please note that a candidate should thoroughly review all objectives before attempting the exam.

### [VMware vSphere: Troubleshooting Workshop \[V5.x\]](#)

A five-day, hands-on training course that provides the advanced knowledge, skills, and abilities to achieve competence in troubleshooting a VMware® vSphere® environment and increase skill in using the command line to analyze problems. The course covers the following objectives:

- Use the VMware vSphere® Web Client, the command-line interface, and log files to diagnose and correct problems in vSphere
- Configure SSL certificates
- Troubleshoot networking issues
- Troubleshoot storage issues
- Troubleshoot vCenter Server issues

- Troubleshoot ESXi host issues
- Troubleshoot vSphere cluster issues
- Troubleshoot VMware vSphere® vMotion® issues
- Troubleshoot virtual machine issues

This course covers some objectives (approximately 15%) covered on the VCP5-DCV Exam. It is recommended for experienced individuals who already have a strong understanding of the objectives in the VCP5-DCV Exam and want additional training that will still satisfy the VCP5-DCV certification course requirement. Please note that a candidate should thoroughly review all objectives before attempting the exam.

### [VMware vSphere: What's New \[V5.x\]](#)

A two-day, hands-on training course that explores new features in VMware vCenter™ Server 5.x and VMware® ESXi™ 5.x. Topics include VMware vSphere® 5 installation and how to upgrade from vSphere 4.x to vSphere 5.x. vSphere 5.x is the first version of vSphere to include only the ESXi hypervisor. The course covers the following objectives:

- List and describe key enhancements in vSphere 5
- Describe the upgrade process from vSphere 4.x to vSphere 5.5
- Use VMware® vCenter™ Server Appliance™ and the VMware vSphere® Web Client to manage the vSphere platform
- Understand how VMware® vCenter™ Single Sign-On™ works
- Upgrade and manage a VMware vSphere® VMFS-5 datastore
- Create a port mirroring session
- Configure virtual machine storage policies
- Create a datastore cluster and configure VMware vSphere® Storage DRS™
- Monitor VMware vSphere® High Availability cluster activity
- Use VMware vSphere® Auto Deploy™ to provision an ESXi host

This course is designed for candidates that already have obtained their VCP4 certification and are looking for the information relevant to new vSphere 5.x features. To determine if this course satisfies the course requirement, refer to the diagram in section 4.1.

## **5. Additional Resources**

### 5.1 Practice Exam

VMware provides a Practice exam for the VCP5-DCV Exam. The Practice exam contains sample questions, along with explanation for incorrect responses. The Practice exam presents 25 questions, drawn from a larger pool. The Practice exam pass score is set to 100%, and a candidate can retake the Practice exam as many



times as desired until the 100% score is achieved. Please be advised that the pass score for the Practice exam is unrelated to the pass score for the actual exam. Refer to section 1.3 for the scoring information for the VCP5-DCV Exam.

The Practice exam is located at: [http://mylearn.vmware.com/quiz.cfm?item=24908&ui=www\\_cert](http://mylearn.vmware.com/quiz.cfm?item=24908&ui=www_cert)

## 5.2 VCP Community

VMware provides an online community for VCP candidates. This community contains valuable information from other candidates and senior VCPs, and is moderated by VMware certification staff. The community is located at: <http://communities.vmware.com/community/vmtn/certedu/certification/vcp>

## 5.3 Building a vSphere Test Environment

All VMware products, including vSphere 5, can be downloaded and evaluated for 60 days. If you have the equipment to install a copy of ESXi 5.x, you can install ESXi in a VM. This would allow you to install multiple copies of ESXi and a copy of vCenter Server. For shared storage, obtain a virtual appliance that contains an iSCSI target. Several of these are available on the [appliance marketplace](#).