

vSphere 6 Foundations Exam

Exam Preparation Guide

Exam code: 2V0-620

Exam Preparation Guide Version 1.2

06 August 2015

Disclaimer:

This preparation guide is intended to provide information about the objectives covered by this exam, as well as related resources. The material contained within this guide 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 recommended in this guide where needed to gain that understanding.

Exam Preparation Guide Authors:

Jon C. Hall

Jeff Hall

Andrew Sturniolo

Jordan Roth

Exam Preparation Guide Contributors:

Mostafa Khalil

Garth Miller

Damian Wraa

Linus Bourque

Jonathan McDonald

Jeff Weiss

Vivian Li

Lizann Dunegan

Rob Philp

Joe Desmond

Andrew Ellwood

Arantxa Duque Barrachina

Carla Gavalakis

Contents

1. The Exam.....	3
1.1 Purpose of Exam	3
1.2 Intended Audience.....	3
2. Objectives covered in the vSphere 6 Foundations Exam (2V0-620):.....	3
2.1 Introduction	3
2.2 Objectives	3
Section 1 – Install and configure vCenter Server and ESXi	3
Section 2 – Configure vSphere Networking.....	5
Section 3 – Configure vSphere Storage	7
Section 4 – Deploy and Administer Virtual Machines and vApps.....	8
Section 5 – Establish and Maintain Availability and Resource Management.....	10
Section 6 – Perform Basic Troubleshooting.....	13
Section 7 – Monitor a vSphere Implementation	15
3. Additional Resources	17
3.1 Practice Exam.....	17
3.2 VCP Community	17
3.3 Building a vSphere Test Environment.....	17

1. The Exam

1.1 Purpose of Exam

The vSphere 6 Foundations Exam (2V0-620) tests candidates on their skills and abilities installing, configuring and administering a VMware vSphere® 6 environment. Successful candidates demonstrate mastery of these skills and abilities.

1.2 Intended Audience

A candidate for the VCP6-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).

2. Objectives covered in the vSphere 6 Foundations Exam (2V0-620):

2.1 Introduction

It is recommended that candidates have the knowledge and skills necessary to install, configure and administer a vSphere environment before taking the vSphere 6 Foundations Exam. It is also recommended that the candidate complete the recommended course requirement prior to attempting the exam.

Please visit the [VMware Certified Professional 6 – Data Center Virtualization webpage](#) for all requirements needed to obtain the vSphere Foundations certification.

2.2 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 – Install and configure vCenter Server and ESXi

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

Knowledge

- Explain available vSphere editions and features

- Explain the various data center solutions that interact with vSphere
- Explain ESXi and vCenter Server architectures
- Explain new solutions offered in the current version
- Determine appropriate vSphere edition based on customer requirements

Tools

- [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](#)

Objective 1.2 -- Install and Configure vCenter Server

Knowledge

- Deploy the vCenter Appliance (vCSA)
- Install vCenter Server onto a virtual machine
- Create an ODBC Connection to a vCenter Server
- Given a scenario, size the vCenter Database based on requirements
- Install additional vCenter Server Components
- Install and configure vSphere Client / vSphere Web Client
- Install/Remove vSphere Client plug-ins
- Enable/Disable vSphere Client plug-ins
- License vCenter Server
- Determine availability requirements for a vCenter Server in a given vSphere implementation

Tools

- [vSphere Installation and Setup Guide](#)
- [vCenter Server and Host Management Guide](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- [VMware vCenter Server™ 6.0 Deployment Guide](#)
- vSphere Client / vSphere Web Client

Objective 1.3 – Install and configure ESXi

Knowledge

- Given a scenario, validate if an ESXi configuration meets given requirements
- Perform a scripted installation of ESXi

- Perform an interactive installation of ESXi using media or PXE
- Configure NTP on an ESXi Host
- Configure DNS and routing on an ESXi Host
- Configure SSH and Shell access on an ESXi Host
- Configure logs to be sent to a syslog server
- License an ESXi Host

Tools

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

Section 2 – Configure vSphere Networking

Objective 2.1 – Configure vSphere Standard Switches (vSS)

Knowledge

- Explain 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](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- vSphere Client / vSphere Web Client

Objective 2.2 – Configure vSphere Distributed Switches (vDS)

Knowledge

- Explain 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 port groups
- Determine use case for a vSphere Distributed Switch

Tools

- [vSphere Installation and Setup Guide](#)
- [vSphere Networking Guide](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- vSphere Client / vSphere Web Client

Objective 2.3 – Configure vSS and vDS Features

Knowledge

- Explain 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
- Given a scenario, determine appropriate VLAN configuration for a vSphere implementation

Tools

- [vSphere Installation and Setup Guide](#)
- [vSphere Networking Guide](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- vSphere Client / vSphere Web Client

Section 3 – Configure vSphere Storage

Objective 3.1 – Connect Shared Storage Devices to vSphere

Knowledge

- Explain storage naming conventions
- Explain hardware/dependent hardware/software iSCSI initiator requirements
- Configure FC/iSCSI/FCoE storage devices
- Describe zoning and LUN masking practices
- Create an NFS share for use with vSphere
- Configure/Edit hardware/dependent hardware initiator
- Connect/Configure NFS 3.x and 4.1 NAS devices
- Enable/Disable software iSCSI initiator
- Configure/Edit software iSCSI initiator settings
- Configure iSCSI port binding
- Enable/Configure/Disable iSCSI CHAP

Tools

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

Objective 3.2 – Configure Software Defined Storage

Knowledge

- Explain Virtual SAN (VSAN) Architecture
- Create/Delete VSAN Cluster
- Manage VSAN disk groups
- Monitor VSAN storage
- Add/Remove VSAN Nodes
- Explain benefits of NFS 4.1
- Determine use cases for Virtual SAN configurations

Tools

- [Administering VMware Virtual SAN](#)
- [vSphere Storage guide](#)
- [What's New: VMware Virtual SAN 6.0](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)

- vSphere Client / vSphere Web Client

Objective 3.3 – Create and Configure VMFS and NFS Datastores

Knowledge

- Compare/Contrast supported NFS versions
- Configure NFS storage for VMFS formatting
- Configure storage multi-pathing
- Compare/Contrast VMFS3 and VMFS5
- Configure Storage Distributed Resource Scheduler (SDRS)
- Extend/Expand VMFS Datastores
- Place a VMFS Datastore in Maintenance Mode

Tools

- [vSphere Installation and Setup Guide](#)
- [vSphere Storage guide](#)
- [What's New in the VMware vSphere® 6.0 Platform](#)
- vSphere Client / vSphere Web Client

Section 4 – Deploy and Administer Virtual Machines and vApps

Objective 4.1 – Create and Deploy Virtual Machines

Knowledge

- Place virtual machines in selected ESXi Hosts/Clusters/Resource Pools
- Configure and deploy a Guest OS into a new virtual machine
- Configure/Modify virtual hardware:
 - CPU
 - RAM
 - Disk
 - vNIC
- Create/Convert thin/thick provisioned virtual disks
- Install/Upgrade VMware Tools and Virtual Hardware
- Configure PCI Pass-through and Direct I/O
- Configure virtual machine time synchronization

Tools

- [vSphere Virtual Machine Administration Guide](#)

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

Objective 4.2 – Create and Deploy vApps

Knowledge

- Create/Deploy/Clone a vApp
- Add objects to an existing vApp
- Edit vApp settings
- Configure IP pools
- Suspend/Resume a vApp

Tools

- [vSphere Virtual Machine Administration Guide](#)
- [vSphere Administration with the vSphere Client Guide](#)
- vSphere Client / vSphere Web Client

Objective 4.3 – Manage Virtual Machine Clones and Templates

Knowledge

- Explain Cloning and Template options
- 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 an OVF template
- Create a Local Library
- Create a Remote Library with/without external storage
- Publish/Subscribe/Share Content Library
- Deploy a virtual machine from a content library

Tools

- [vSphere Virtual Machine Administration Guide](#)
- [vSphere Administration with the vSphere Client Guide](#)
- vSphere Client / vSphere Web Client

Objective 4.4 – Administer Virtual Machines and vApps

Knowledge

- Explain files used by virtual machines
- Explain common practices for securing virtual machines
- Hot Extend a virtual disk
- Configure virtual machine options
- Configure virtual machine power settings
- Configure virtual machine boot options
- Administer virtual machine snapshots
- Assign a Storage Policy to a virtual machine
- Verify Storage Policy compliance for virtual machines
- Adjust virtual machine resources
- Differentiate between stop/shutdown/reboot/restart of a virtual machine

Tools

- [vSphere Virtual Machine Administration Guide](#)
- [vSphere Administration with the vSphere Client Guide](#)
- vSphere Client / vSphere Web Client

Section 5 – Establish and Maintain Availability and Resource Management

Objective 5.1 – Create and Configure VMware Clusters

Knowledge

- Determine how DRS and HA are applicable to an environment
- 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/Disable Host Monitoring
- Enable/Configure/Disable virtual machine and application monitoring

Tools

- [vCenter Server and Host Management Guide](#)
- [vSphere Availability Guide](#)
- [vSphere Resource Management Guide](#)
- [vSphere Administration with the vSphere Client Guide](#)
- vSphere Client / vSphere Web Client

Objective 5.2 – Plan and Implement VMware Fault Tolerance

Knowledge

- Configure VMware Fault Tolerance networking
- Given a scenario, determine an appropriate VMware Fault Tolerance configuration
- 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

Tools

- [vSphere Availability Guide](#)
- [vSphere Virtual Machine Administration Guide](#)
- [vSphere Administration with the vSphere Client Guide](#)
- vSphere Client / vSphere Web Client

Objective 5.3 – Create and Administer Resource Pools

Knowledge

- Explain vFlash architecture
- Explain use cases for Resource Pools
- 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

Tools

- [vSphere Resource Management Guide](#)
- [vSphere Storage Guide](#)

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

Objective 5.4 – Migrate Virtual Machines

Knowledge

- Explain Enhanced vMotion Compatibility (EVC)
- Explain Long Distance vMotion
- Explain process for vMotion/Storage vMotion migrations
- Configure virtual machine swap file location
- Migrate a powered-off or suspended virtual machine
- Migrate virtual machines using vMotion/Storage vMotion

Tools

- [vSphere Resource Management Guide](#)
- [vCenter Server and Host Management Guide](#)
- [vSphere Virtual Machine Administration Guide](#)
- vSphere Client / vSphere Web Client

Objective 5.5 – Backup and Restore Virtual Machines

Knowledge

- Explain VMware Data Protection sizing Guidelines
- Describe vSphere Replication architecture
- Install and Configure VMware Data Protection
- Create a backup job with VMware Data Protection
- Perform a live full/file-level restore with VMware Data Protection
- Create/Delete/Consolidate virtual machine snapshots
- Perform a failback operation using vSphere Replication
- Determine appropriate backup solution for a given vSphere implementation

Tools

- [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](#)

- VDR Data Migration Tool
- VDP Configure Utility
- vSphere Client / vSphere Web Client

Objective 5.6 – Update ESXi and Virtual Machines

Knowledge

- Create/Edit/Remove a Host Profile from an ESXi Host
- 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 machines using Update Manager

Tools

- [vSphere Host Profiles Guide](#)
- [Installing and Administering VMware vSphere Update Manager 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 of ESXi and vCenter Server

Knowledge

- Troubleshoot common installation issues
- Monitor status of ESXi management agents
- Determine ESXi Host stability issues and gather diagnostics information
- Export diagnostic information
- Monitor status of the vCenter Server service
- Perform basic maintenance of a vCenter Server database

Tools

- [vSphere Troubleshooting Guide](#)
- [vSphere Installation and Setup Guide](#)
- [vSphere Networking Guide](#)
- [vSphere Storage Guide](#)
- vSphere Client / vSphere Web Client

Objective 6.2 – Perform Basic Troubleshooting of ESXi and vCenter Operations

Knowledge

- Verify network configuration
- Troubleshoot common storage issues
- Troubleshoot common virtual machine issues
- Given a scenario, verify a virtual machine is configured with the correct network resources
- Troubleshoot virtual switch and port group configuration issues
- Troubleshoot physical network adapter configuration issues
- Recognize and detect common knowledge base article solutions

Tools

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

Objective 6.3 – Perform Basic Troubleshooting of Virtual Machine Operations

Knowledge

- Troubleshoot virtual machine resource contention issues
- Recognize and detect:
 - Fault Tolerant network latency issues
 - VMware Tools installation issues
 - Virtual machines states
 - Virtual machine constraints
 - Guest OS installation issues
- Given a scenario, determine root cause of a storage issue based on troubleshooting information
- Explain common virtual machine boot disk errors

Tools

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

Objective 6.4 – Identify and Troubleshoot Basic Misconfigurations

Knowledge

- Troubleshoot:
 - Virtual switch and distributed switches port group configuration issues
 - Physical network adapter configuration issues
 - NFS networking configuration issues
 - iSCSI software initiator configuration issues
 - HA configuration and redundancy issues
 - DRS Resource Distribution Graph
 - vMotion/Storage vMotion migration issues
- Interpret vMotion Resource Maps
- Given a scenario, verify a virtual machine is configured with the correct network resources

Tools

- [vSphere Troubleshooting Guide](#)
- [vSphere Administration with the vSphere Client Guide](#)
- vSphere Client / vSphere Web Client

Section 7 – Monitor a vSphere Implementation

Objective 7.1 – Monitor ESXi, vCenter Server and Virtual Machines

Knowledge

- Explain:
 - Common memory metrics
 - Common CPU metrics
 - Common network metrics
 - Common storage metrics
- Configure SNMP for vCenter Server
- Configure SMTP settings for vCenter Server
- 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
- Identify vCenter Server connection object status
- Create an Advanced Chart

Tools

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

Objective 7.3 – Install, Configure and Administer vRealize Operations Manager

Knowledge

- Differentiate Major/Minor vRealize Operations Manager badges
- Explain vRealize Operations Manager architecture

- Deploy and Configure vRealize Operations Manager appliance
- Upgrade vRealize Operations Manager
- Understand metrics used by Major/Minor vRealize Operations Manager 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 \(Custom UI\)](#)
- [vCenter Operations Manager Evaluation Guide](#)
- [vSphere Monitoring and Performance Guide](#)
- vCenter Operations Manager Custom User Interface
- vSphere Client / vSphere Web Client

3. Additional Resources

3.1 Practice Exam

VMware provides a Practice exam for the VCP6-vSphere Foundations 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.

The Practice exam is located at: TBD

3.2 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/vmtncertedu/certification/vcp>

3.3 Building a vSphere Test Environment

All VMware products, including vSphere 6, can be downloaded and evaluated for 60 days. If you have the equipment to install a copy of ESXi 6.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](#).

Version	Date	Change Notes
1.0	2015-03-23	Initial creation of Exam Preparation Guide
1.1	2015-04-22	Objective 4.2: Corrected URL for “vSphere Administration with the vSphere Client Guide”.
1.2	2015-08-06	Final Live Review