

# Professional VMware vSphere 7.x

## Exam Details (Last Updated: 7/22/2020)

The Professional VMware vSphere 7.x Exam (2V0-21.20), which leads to the VMware Certified Professional – Data Center Virtualization 2021 certification, is a 70-item exam with a passing score of 300 using a scaled method. Candidates are given an exam time of 130 minutes, which includes adequate time to complete the exam for non-native English speakers.

## Exam Delivery

This is a proctored exam delivered through Pearson VUE. For more information, visit the [Pearson VUE website](#).

## Certification Information

For details and a complete list of requirements and recommendations for attainment, please reference the [VMware Education Services – Certification website](#).

## Minimally Qualified Candidate

A minimally qualified candidate (MQC) has 6-12 months hands-on experience implementing, managing and troubleshooting a vSphere 7 infrastructure. They are typically administrators, capable of performing deployment and administration of a virtual infrastructure using vSphere. The candidate also has working knowledge of storage, networking, hardware, security, business continuity and disaster recovery concepts.

## Exam Sections

VMware exam blueprint sections are now standardized to the seven sections below, some of which may NOT be included in the final exam blueprint depending on the exam objectives.

Section 1 – Architecture and Technologies

Section 2 – Products and Solutions

Section 3 – Planning and Designing

Section 4 – Installing, Configuring, and Setup

Section 5 – Performance-tuning, Optimization, and Upgrades

Section 6 – Troubleshooting and Repairing

Section 7 – Administrative and Operational Tasks

If a section does not have testable objectives in this version of the exam, it will be noted below, accordingly. The objective numbering may be referenced in your score report at the end of your testing event for further preparation should a retake of the exam be necessary.

## Sections Included in this Exam

### Section 1 – Architectures and Technologies

Objective 1.1 – Identify the pre-requisites and components for a vSphere implementation

Objective 1.2 – Describe vCenter Server topology

Objective 1.3 – Identify and differentiate storage access protocols for vSphere (NFS, iSCSI, SAN, etc.)

1.3.1 – Describe storage datastore types for vSphere

1.3.2 – Explain the importance of advanced storage configuration (vSphere Storage APIs for Storage Awareness (VASA), vSphere Storage APIs Array Integration (VAAI), etc.)

1.3.3 – Describe storage policies

1.3.4 – Describe basic storage concepts in K8s, vSAN and vSphere Virtual Volumes (vVols)

Objective 1.4 – Differentiate between vSphere Network I/O Control (NIOC) and vSphere Storage I/O Control (SIOC)

Objective 1.5 – Describe instant clone architecture and use cases

Objective 1.6 – Describe ESXi cluster concepts

1.6.1 – Describe Distributed Resource Scheduler (DRS)

1.6.2 – Describe vSphere Enhanced vMotion Compatibility (EVC)

1.6.3 – Describe how Distributed Resource Scheduler (DRS) scores virtual machines

1.6.4 – Describe vSphere High Availability

1.6.5 – Describe datastore clusters

Objective 1.7 – Identify vSphere distributed switch and vSphere standard switch capabilities

1.7.1 – Describe VMkernel networking

1.7.2 – Manage networking on multiple hosts with vSphere distributed switch

1.7.3 – Describe networking policies

1.7.4 – Manage Network I/O Control (NIOC) on a vSphere distributed switch

Objective 1.8 – Describe vSphere Lifecycle Manager concepts (baselines, cluster images, etc.)

Objective 1.9 – Describe the basics of vSAN as primary storage

1.9.1 – Identify basic vSAN requirements (networking, disk count + type)

Objective 1.10 – Describe the vSphere Trust Authority architecture

Objective 1.11 – Explain Software Guard Extensions (SGX)

### Section 2 – VMware Products and Solutions

Objective 2.1 – Describe the role of vSphere in the software-defined data center (SDDC)

Objective 2.2 – Identify use cases for vCloud Foundation

Objective 2.3 – Identify migration options

Objective 2.4 – Identify DR use cases

Objective 2.5 – Describe vSphere integration with VMware Skyline

Section 3 – Planning and Designing - There are no testable objectives for this section.

## Section 4 – Installing, Configuring, and Setup

Objective 4.1 – Describe single sign-on (SSO) deployment topology

4.1.1 – Configure a single sign-on (SSO) domain

4.1.2 – Join an existing single sign-on (SSO) domain

Objective 4.2 – Configure VSS advanced virtual networking options

Objective 4.3 – Set up identity sources

4.3.1 – Configure Identity Federation

4.3.2 – Configure Lightweight Directory Access Protocol (LDAP) integration

4.3.3 – Configure Active Directory integration

Objective 4.4 – Deploy and configure vCenter Server Appliance

Objective 4.5 – Create and configure VMware High Availability and advanced options (Admission Control, Proactive High Availability, etc.)

Objective 4.6 – Deploy and configure vCenter Server High Availability

Objective 4.7 – Set up content library

Objective 4.8 – Configure vCenter Server file-based backup

Objective 4.9 – Analyze basic log output from vSphere products

Objective 4.10 – Configure vSphere Trust Authority

Objective 4.11 – Configure vSphere certificates

4.11.1 – Describe Enterprise PKIs role for SSL certificates

Objective 4.12 – Configure vSphere Lifecycle Manager/VMware Update Manager (VUM)

Objective 4.13 – Securely Boot ESXi hosts

Objective 4.14 – Configure different network stacks

Objective 4.15 – Configure Host Profiles

Objective 4.16 – Identify boot options

4.16.1 – Configure Quick Boot

## Section 5 – Performance-tuning, Optimization, Upgrades

Objective 5.1 – Identify resource pools use cases

5.1.1 – Explain shares, limits and reservations (resource management)

Objective 5.2 – Monitor resources of vCenter Server Appliance and vSphere environment

Objective 5.3 – Identify and use tools for performance monitoring

Objective 5.4 – Configure Network I/O Control (NIOC)

Objective 5.5 – Configure Storage I/O Control (SIOC)

Objective 5.6 – Explain the performance impact of maintaining virtual machine snapshots

Objective 5.7 – Plan for upgrading various vSphere components

Section 6 – Troubleshooting and Repairing - There are no testable objectives for this section.

Section 7 – Administrative and Operational Tasks

Objective 7.1 – Create and manage virtual machine snapshots

Objective 7.2 – Create virtual machines using different methods (Open Virtual Machine Format (OVF) templates, content library, etc.)

Objective 7.3 – Manage virtual machines

Objective 7.4 – Manage storage (datastores, storage policies, etc.)

7.4.1 – Configure and modify datastores (expand/upgrade existing datastore, etc.)

7.4.2 – Create virtual machine storage policies

7.4.3 – Configure storage cluster options

Objective 7.5 – Create Distributed Resource Scheduler (DRS) affinity and anti-affinity rules for common use cases

Objective 7.6 – Configure and perform different types of migrations

Objective 7.7 – Configure role-based user management

Objective 7.8 – Configure and manage the options for securing a vSphere environment (certificates, virtual machine encryption, virtual Trusted Platform Module, lock-down mode, virtualization-based security, etc.)

Objective 7.9 – Configure and manage host profiles

Objective 7.10 – Utilize baselines to perform updates and upgrades

Objective 7.11 – Utilize vSphere Lifecycle Manager

7.11.1 – Describe Firmware upgrades for ESXi

7.11.2 – Describe ESXi updates

7.11.3 – Describe component and driver updates for ESXi

7.11.4 – Describe hardware compatibility check

7.11.5 – Describe ESXi cluster image export functionality

Objective 7.12 – Configure alarms

## Recommended Courses

[VMware vSphere: Install, Configure, Manage \[v7\]](#)

[VMware vSphere: Optimize and Scale \[v7\]](#)

## References

In addition to the recommended courses, item writers used the following references for information when writing exam questions. It is recommended that you study the reference content as you prepare to take the exam, in addition to the recommended training.

Name	Version	Products
<a href="#">VMware ESXi Installation and Setup Guide</a>	30 April 2020	VMware vSphere 7.0, VMware ESXi 7.0
<a href="#">vCenter Server Installation and Setup Guide</a>	02 April 2020	VMware vSphere 7.0, vCenter Server 7.0
<a href="#">vSphere Virtual Machine Administration Guide</a>	02 April 2020	VMware vSphere 7.0, VMware ESXi 7.0, vCenter Server 7.0
<a href="#">vSphere Storage Guide</a>	01 July 2020	VMware vSphere 7.0, VMware ESXi 7.0, vCenter Server 7.0
<a href="#">vSphere Networking Guide</a>	02 April 2020	VMware vSphere 7.0, VMware ESXi 7.0, vCenter Server 7.0
<a href="#">vSphere Security Guide</a>	01 July 2020	VMware vSphere 7.0, VMware ESXi 7.0, vCenter Server 7.0
<a href="#">vSphere Authentication Guide</a>	02 June 2020	VMware vSphere 7.0, VMware ESXi 7.0, vCenter Server 7.0
<a href="#">vSphere Availability Guide</a>	14 May 2020	VMware vSphere 7.0, VMware ESXi 7.0, vCenter Server 7.0
<a href="#">vCenter Server Upgrade Guide</a>	02 April 2020	VMware vSphere 7.0, vCenter Server 7.0
<a href="#">Managing Host and Cluster Lifecycle</a>	02 April 2020	VMware vSphere 7.0, VMware ESXi 7.0
<a href="#">vSphere Availability</a>	VMware Docs	
<a href="#">vSphere Resource Management</a>	VMware Docs	
<a href="#">vSAN Planning and Deployment</a>	VMware Docs	
<a href="#">Introducing VMware Cloud Foundation</a>	VMware Docs	
<a href="#">vSphere Host Profiles</a>	VMware Docs	
<a href="#">vCenter Server Configuration</a>	VMware Docs	
<a href="#">vSphere Monitoring and Performance</a>	VMware Docs	
<a href="#">vSphere Authentication</a>	VMware Docs	
<a href="#">Quiescing snapshots in an ESXi host fails with the error: The guest OS has reported an error during quiescing. The error code was: 5 The error message was: Asynchronous operation failed: &gt;VssSyncStart (2090545)]</a>	Knowledge Base	
<a href="#">Determining why a virtual machine was powered off or restarted (1019064)]</a>	Knowledge Base	
<a href="#">"The virtual machine requires hardware features that are unsupported or disabled on the target host" when migrating a</a>	Knowledge Base	

<a href="#">virtual machine (65151)</a>		
<a href="#">A snapshot removal can stop a virtual machine for long time (1002836)</a>	Knowledge Base	
*vSphere content in this exam is based on V7.0. Review all 7.0 release notes and material for features and function.		

## Sample Questions

Sample questions presented here are examples of the types of questions candidates may encounter and should not be used as a resource for exam preparation.

### Sample Question 1

An administrator sees that a virtual machine named "VM-A" has a Distributed Resource Scheduler (DRS) score of 25%.

What does this score indicate?

- A. VM-A is requesting 25% more CPU and memory resources.
- B. VM-A is using 25% of its CPU and memory resources.
- C. VM-A is experiencing low resource contention.
- D. VM-A is experiencing high resource contention.

Answer: D

### Sample Question 2

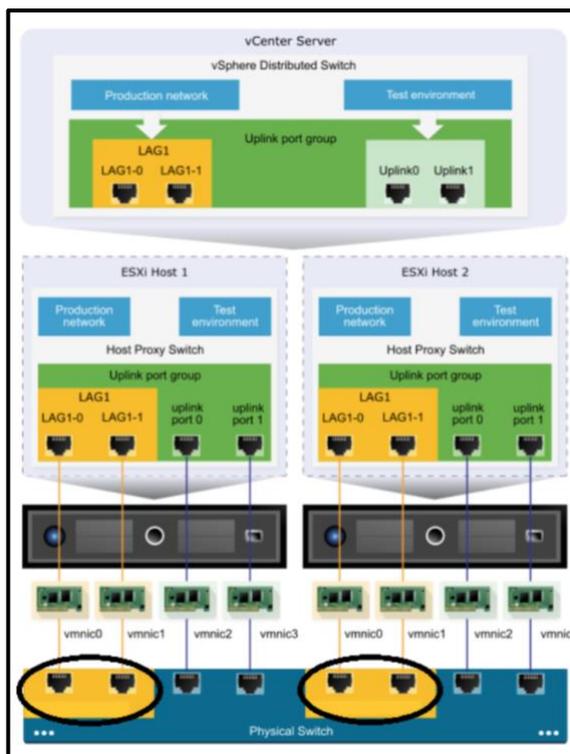
Which cluster feature ensures that the compute resource requirements of virtual machines in a cluster are satisfied?

- A. Proactive High Availability
- B. Distributed Resource Scheduler
- C. Storage I/O Control
- D. Predictive Distributed Resource Scheduler

Answer: B

Sample Question 3

Refer to the exhibit.



Which supported network protocol is depicted by the areas circled in the exhibit?

- A. Link Aggregation Control Protocol (LACP)
- B. Internet Control Message Protocol (ICMP)
- C. Simple Network Management Protocol (SNMP)
- D. Port Aggregation Protocol (PAgP)

Answer: A

Sample Question 4

A new vSphere 7.0 environment is deployed with the following:

- A single vCenter Server
- Two vSAN clusters
- Four ESXi hosts per cluster

How many vSAN datastores are available in this environment?

- A. 1
- B. 2

- C. 4
- D. 8

Answer: B

#### Sample Question 5

An administrator is tasked with assessing which virtual machines (VMs) can be migrated to new servers without any modification to a vSphere environment.

Which VM configuration would enable the use of vSphere vMotion for migrating the VMs to the new servers?

- A. Virtual machine with raw device mapping (RDM) mapped only to the host it is on
- B. Virtual machine mounted to a host CD-ROM
- C. Virtual machine with a clustered virtual machine disk (VMDK)
- D. Virtual machine with a physical USB security dongle

Answer: C

#### Sample Question 6

Which two steps would an administrator complete when configuring vCenter Server High Availability using the vSphere Client?

(Choose two.)

- A. Indicate that the Passive and Witness nodes have been manually created.
- B. Select the management network for the Passive and Witness nodes.
- C. Choose the data replication network for the Active, Passive and Witness nodes.
- D. Configure the name of the vCenter Server High Availability cluster.
- E. Select the deployment size for the Passive and Witness nodes.

Answers: A, C

#### Sample Question 7

An IT Department configures VMware Certificate Authority to assign certificates to its ESXi hosts. An administrator logs into vCenter Server and notices some ESXi hosts have expired certificates.

How could the administrator renew VMware Certificate Authority-assigned certificates to the ESXi hosts?

- A. Disconnect the ESXi hosts and reconnect them to vCenter Server.
- B. Restart each ESXi host via the vSphere Client.
- C. Connect to each ESXi host and run the services.sh restart command to restart the management agents.
- D. Connect to the vCenter Server Appliance to stop and start the services.

Answer: A

#### Sample Question 8

Which resource pool setting should be used to establish a minimum guarantee of resource usage?

- A. Shares

- B. Limits
- C. Reservations
- D. Resource usage

Answer: C

Sample Question 9

Which vSphere feature helps prevent a single virtual machine from consuming all of the available resources on a shared datastore?

- A. vSphere Network I/O Control (NIOC)
- B. vSphere Storage I/O Control (SIOC)
- C. vSphere Storage APIs for Storage Awareness (VASA)
- D. vSphere Storage APIs Array Integration (VAAI)

Answer: B

Sample Question 10

An administrator is tasked with updating a host profile to reflect a recent manual configuration change on a single host in a cluster.

Which option would the administrator select to update the host profile with the current ESXi host configuration?

- A. Extract Host Profile
- B. Export Host Customizations
- C. Copy Settings from Host
- D. Copy Settings to Host Profile

Answer: C

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