

# VMware vSphere: Bootcamp

## Delivery Methods

- Classroom
- [Onsite](#)

## Course Duration

- Five (5) days of instructor-led classroom training
- 60% lecture, 40% hands-on lab

## Target Audience

- Experienced system administrators
- Systems engineers
- System integrators

## Course Suitability

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Administrator | <input type="checkbox"/> Expert                  |
| <input checked="" type="checkbox"/> Engineer      | <input checked="" type="checkbox"/> Advanced     |
| <input type="checkbox"/> Architect                | <input checked="" type="checkbox"/> Professional |
|   | <input type="checkbox"/> Fundamentals            |

## Prerequisites

- System administration experience on Microsoft Windows or Linux operating systems
- Understanding of concepts presented in the [VMware Data Center Virtualization Fundamentals](#) course for [VCA-DCV certification](#)

## Certifications

This course qualifies you for both the VCP6 Foundations and VCP6-DCV certifications. For more information, go to [VMware Certification](#).

## Pricing

Contact your VMware representative or a VMware Authorized Training Center for pricing information.

## More Information

Courses are conveniently scheduled around the world. Go to [VMware Education](#) to find the class that is right for you.



## Course Overview

*VMware vSphere®: Bootcamp* is an intensive combination of our best-selling vSphere courses. This course is a hands-on training course delivered in two parts across five days of extended hours. Part one focuses on installing, configuring, and managing vSphere 6, which includes VMware ESXi™ 6.0 and VMware vCenter Server™ 6.0. Part two builds advanced skills for configuring and maintaining a highly available and scalable virtual infrastructure.

## Course Objectives

By the end of the course, you should be able to meet the following objectives:

### Part 1

- Describe the software-defined data center
- Deploy an ESXi host and create virtual machines
- Describe the vCenter Server architecture
- Deploy a vCenter Server instance or VMware vCenter Server™ Appliance™
- Use vCenter Server to manage an ESXi host
- Configure and manage vSphere infrastructure with VMware vSphere® Client™ and VMware vSphere® Web Client
- Configure virtual networks with vSphere standard switches
- Use vCenter Server to manage various types of host storage
- Manage virtual machines, templates, clones, and snapshots
- Create a vApp
- Describe and use the content library
- Migrate virtual machines with VMware vSphere® vMotion®
- Use VMware vSphere® Storage vMotion® to migrate virtual machine storage
- Monitor resource usage and manage resource pools
- Manage VMware vSphere® High Availability and VMware vSphere® Fault Tolerance
- Use VMware vSphere® Distributed Resource Scheduler™ clusters to improve host scalability
- Use vSphere distributed switches to improve network scalability
- Use VMware vSphere™ Update Manager™ to apply patches
- Perform basic troubleshooting of ESXi hosts, virtual machines, and vCenter Server operations

## Part 2

- 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
- Harden the vSphere environment against security threats
- 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



VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 [www.vmware.com](http://www.vmware.com)

© 2015 VMware, Inc. All rights reserved. The product or workshop materials is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at <http://www.vmware.com/download/patents.html>. VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

VMware warrants that it will perform these workshop services in a reasonable manner using generally accepted industry standards and practices. THE EXPRESS WARRANTY SET FORTH IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SERVICES AND DELIVERABLES PROVIDED BY VMWARE, OR AS TO THE RESULTS WHICH MAY BE OBTAINED THEREFROM. VMWARE WILL NOT BE LIABLE FOR ANY THIRD-PARTY SERVICES OR PRODUCTS IDENTIFIED OR REFERRED TO CUSTOMER. All materials provided in this workshop are copyrighted by VMware ("Workshop Materials"). VMware grants the customer of this workshop a license to use and make reasonable copies of any Workshop Materials strictly for the purpose of facilitating such company's internal understanding, utilization and operation of its licensed VMware product(s). Except as set forth expressly in the sentence above, there is no transfer of any intellectual property rights or any other license granted under the terms of this workshop. If you are located in the United States, the VMware contracting entity for the service will be VMware, Inc., and if outside of the United States, the VMware contracting entity will be VMware International Limited.

## Course Modules

### Part 1: Install, Configure, and Manage

<p><b>1 Course Introduction</b></p> <ul style="list-style-type: none"> <li>• Introductions and course logistics</li> <li>• Course objectives</li> </ul>	<p><b>7 Virtual Machine Management</b></p> <ul style="list-style-type: none"> <li>• Use templates and cloning to deploy virtual machines</li> <li>• Modify and manage virtual machines</li> <li>• Perform vSphere vMotion and vSphere Storage vMotion migrations</li> <li>• Create and manage virtual machine snapshots</li> <li>• Create a vApp</li> <li>• Introduce the various types of content libraries and how to deploy and use them</li> </ul>
<p><b>2 Software-Defined Data Center</b></p> <ul style="list-style-type: none"> <li>• Introduce components of the software-defined data center</li> <li>• Describe where vSphere fits into the cloud architecture</li> <li>• Install and use vSphere Client</li> <li>• Overview of ESXi</li> </ul>	<p><b>8 Resource Management and Monitoring</b></p> <ul style="list-style-type: none"> <li>• Introduce virtual CPU and memory concepts</li> <li>• Configure and manage resource pools</li> <li>• Describe methods for optimizing CPU and memory usage</li> <li>• Use vCenter Server performance graphs and alarms to monitor resource usage</li> <li>• Create and use alarms to report certain conditions or events</li> </ul>
<p><b>3 Creating Virtual Machines</b></p> <ul style="list-style-type: none"> <li>• Introduce virtual machines, virtual machine hardware, and virtual machine files</li> <li>• Create and work with virtual machines</li> </ul>	<p><b>9 vSphere HA and vSphere Fault Tolerance</b></p> <ul style="list-style-type: none"> <li>• Explain the vSphere HA architecture</li> <li>• Configure and manage a vSphere HA cluster</li> <li>• Use vSphere HA advanced parameters</li> <li>• Introduce vSphere Fault Tolerance</li> <li>• Enable vSphere Fault Tolerance on virtual machines</li> </ul>
<p><b>4 vCenter Server</b></p> <ul style="list-style-type: none"> <li>• Introduce the vCenter Server architecture</li> <li>• Deploy and configure vCenter Server Appliance</li> <li>• Install and use vSphere Web Client</li> <li>• Manage vCenter Server inventory objects and licenses</li> </ul>	<p><b>10 Host Scalability</b></p> <ul style="list-style-type: none"> <li>• Describe the functions of a vSphere DRS cluster</li> <li>• Configure and manage a vSphere DRS cluster</li> <li>• Work with affinity and anti-affinity rules</li> <li>• Use vSphere HA and vSphere DRS together</li> </ul>
<p><b>5 Configuring and Managing Virtual Networks</b></p> <ul style="list-style-type: none"> <li>• Describe, create, and manage standard switches</li> <li>• Describe and modify standard switch properties</li> <li>• Configure virtual switch load-balancing algorithms</li> <li>• Create, configure, and manage vSphere distributed switches, network connections, and port groups</li> </ul>	<p><b>11 vSphere Update Manager and Host Maintenance</b></p> <ul style="list-style-type: none"> <li>• Use vSphere Update Manager to manage ESXi patching</li> <li>• Install vSphere Update Manager and the vSphere Update Manager plug-in</li> <li>• Create patch baselines</li> <li>• Use host profiles to manage ESXi configuration compliance</li> <li>• Scan and remediate hosts</li> </ul>
<p><b>6 Configuring and Managing Virtual Storage</b></p> <ul style="list-style-type: none"> <li>• Introduce storage protocols and storage device names</li> <li>• Discuss ESXi with iSCSI, NFS, and Fibre Channel storage</li> <li>• Create and manage VMware vSphere® VMFS datastores</li> <li>• Introduce VMware Virtual SAN™</li> </ul>	



VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 [www.vmware.com](http://www.vmware.com)

© 2015 VMware, Inc. All rights reserved. The product or workshop materials is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at <http://www.vmware.com/download/patents.html>. VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

VMware warrants that it will perform these workshop services in a reasonable manner using generally accepted industry standards and practices. THE EXPRESS WARRANTY SET FORTH IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SERVICES AND DELIVERABLES PROVIDED BY VMWARE, OR AS TO THE RESULTS WHICH MAY BE OBTAINED THEREFROM. VMWARE WILL NOT BE LIABLE FOR ANY THIRD-PARTY SERVICES OR PRODUCTS IDENTIFIED OR REFERRED TO CUSTOMER. All materials provided in this workshop are copyrighted by VMware ("Workshop Materials"). VMware grants the customer of this workshop a license to use and make reasonable copies of any Workshop Materials strictly for the purpose of facilitating such company's internal understanding, utilization and operation of its licensed VMware product(s). Except as set forth expressly in the sentence above, there is no transfer of any intellectual property rights or any other license granted under the terms of this workshop. If you are located in the United States, the VMware contracting entity for the service will be VMware, Inc., and if outside of the United States, the VMware contracting entity will be VMware International Limited.

## Part 2: Optimize and Scale

<b>1 VMware Management Resources</b> <ul style="list-style-type: none"> <li>• Understand the purpose of VMware vSphere® Command-Line Interface commands</li> <li>• Discuss options for running vSphere CLI commands</li> <li>• Deploy and configure vSphere Management Assistant</li> <li>• Use vmware-cmd for virtual machine operations</li> </ul>	<b>7 Storage Optimization</b> <ul style="list-style-type: none"> <li>• Diagnose storage access problems</li> <li>• Configure VMware vSphere® Flash Read Cache™</li> <li>• Monitor key storage performance metrics</li> <li>• Troubleshoot common storage performance problems</li> </ul>
<b>2 vSphere Security</b> <ul style="list-style-type: none"> <li>• Configure ESXi host access and authentication</li> <li>• Secure ESXi, vCenter Server, and virtual machines</li> </ul>	<b>8 CPU Performance</b> <ul style="list-style-type: none"> <li>• Explain the CPU scheduler operation, NUMA support, and other features that affect CPU performance</li> <li>• Monitor key CPU performance metrics</li> <li>• Troubleshoot common CPU performance problems</li> </ul>
<b>3 Performance in a Virtualized Environment</b> <ul style="list-style-type: none"> <li>• Review the vSphere performance troubleshooting methodology</li> <li>• Explain software and hardware virtualization techniques and their effects on performance</li> <li>• Use vSphere performance monitoring tools</li> </ul>	<b>9 Memory Performance</b> <ul style="list-style-type: none"> <li>• Monitor key memory performance metrics</li> <li>• Troubleshoot common memory performance problems</li> </ul>
<b>4 Network Scalability</b> <ul style="list-style-type: none"> <li>• Explain distributed switch features such as port mirroring, LACP, QoS tagging, and NetFlow</li> </ul>	<b>10 Virtual Machine and Cluster Optimization</b> <ul style="list-style-type: none"> <li>• Describe guidelines for optimizing virtual machine configuration</li> <li>• Discuss how vGPU usage affects virtual machine performance</li> <li>• Troubleshoot common vSphere cluster problems</li> </ul>
<b>5 Network Performance Troubleshooting</b> <ul style="list-style-type: none"> <li>• Explain the performance features of network adapters</li> <li>• Explain the performance features of vSphere networking</li> <li>• Monitor key network performance metrics</li> <li>• Use vSphere Management Assistant to manage virtual network configurations</li> <li>• Troubleshoot common network performance problems</li> </ul>	<b>11 Host and Management Scalability</b> <ul style="list-style-type: none"> <li>• Describe and use host profiles</li> <li>• Use VMware vSphere® PowerCLI™</li> <li>• Use Virtual Machine Converter</li> <li>• Use VMware vSphere® ESXi™ Image Builder CLI and vSphere Auto Deploy</li> </ul>
<b>6 Storage Scalability</b> <ul style="list-style-type: none"> <li>• Explain VMware vSphere® Storage APIs - Array Integration and VMware vSphere® API for Storage Awareness™</li> <li>• Configure and assign virtual machine storage policies</li> <li>• Configure VMware vSphere® Storage DRS™ and VMware vSphere® Storage I/O Control</li> </ul>	



VMware, Inc. 3401 Hillview Avenue Palo Alto CA 94304 USA Tel 877-486-9273 Fax 650-427-5001 [www.vmware.com](http://www.vmware.com)  
 © 2015 VMware, Inc. All rights reserved. The product or workshop materials is protected by U.S. and international copyright and intellectual property laws. VMware products are covered by one or more patents listed at <http://www.vmware.com/download/patents.html>. VMware is a registered trademark or trademark of VMware, Inc. in the United States and/or other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies.

VMware warrants that it will perform these workshop services in a reasonable manner using generally accepted industry standards and practices. THE EXPRESS WARRANTY SET FORTH IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SERVICES AND DELIVERABLES PROVIDED BY VMWARE, OR AS TO THE RESULTS WHICH MAY BE OBTAINED THEREFROM. VMWARE WILL NOT BE LIABLE FOR ANY THIRD-PARTY SERVICES OR PRODUCTS IDENTIFIED OR REFERRED TO CUSTOMER. All materials provided in this workshop are copyrighted by VMware ("Workshop Materials"). VMware grants the customer of this workshop a license to use and make reasonable copies of any Workshop Materials strictly for the purpose of facilitating such company's internal understanding, utilization and operation of its licensed VMware product(s). Except as set forth expressly in the sentence above, there is no transfer of any intellectual property rights or any other license granted under the terms of this workshop. If you are located in the United States, the VMware contracting entity for the service will be VMware, Inc., and if outside of the United States, the VMware contracting entity will be VMware International Limited.