

VMware Data Center Automation with vRealize Orchestrator and vSphere PowerCLI

Course Summary

Description

This five-day course teaches experienced VMware vSphere administrators how to use the powerful automation tools that all vSphere customers have access to. Using real-world use cases and examples, you learn how to automate day-to-day administration tasks with VMware vSphere Power CLI and VMware vRealize Orchestrator. During class, you use these tools to automate tasks in a realistic lab environment.

Objectives

At the end of this course, students will be able to:

- Describe the features and benefits of automation in a vSphere environment.
- Understand the role of the vSphere Web Services API in automation.
- Use the Managed Object Browser (MOB) to view the structure of VMware vSphere API and VMware vCenter Server inventory.
- Use vSphere PowerCLI to deploy and manage virtual machines and virtual infrastructure.
- Run and manage library vRealize Orchestrator workflows.
- Design, develop, and run custom reusable vRealize Orchestrator workflows.
- Incorporate JavaScript into vRealize Orchestrator workflows.
- Use the vRealize Orchestrator PowerShell plug-in in a custom workflow.
- Manage Guest Operations using vRealize Orchestrator and vSphere PowerCLI.
- Describe VMware vSphere Client code capture.

Topics

- Course Introduction
- Automation in vSphere
- vSphere Web Services API
- vSphere PowerCLI Basics
- vSphere PowerCLI Use Cases
- Advanced vSphere PowerCLI Concepts
- vRealize Orchestrator Overview
- vRealize Orchestrator Basics
- Invoking Scheme Elements
- Branching and Looping
- vRealize Orchestrator Advanced
- vRealize Orchestrator Assets
- vRealize Orchestrator PowerShell Plug-In
- Guest Operations with vRealize Orchestrator and vSphere Power CLI
- Leveraging vSphere Client Code Capture

Audience

This course is intended for experienced vSphere administrators who want to use available tools to automate day-to-day tasks.

Prerequisites

Students should have completed the following courses, or equivalent experience with vSphere deployments:

- VMware vSphere: Install, Configure, Manage

Duration

Five days

VMware Data Center Automation with vRealize Orchestrator and vSphere PowerCLI

Course Outline

- I. *Course Introduction*
 - A. Introduction and course logistics
 - B. Course objectives
- II. *Automation in vSphere*
 - A. Identify the tools available to vSphere administrators for automation
 - B. Understand the benefits of automation
 - C. Understand the function of black boxes in programming
- III. *vSphere Web Services API*
 - A. Identify the function of an API
 - B. Recognize the components of the vSphere Web Services API
 - C. Understand how the vSphere Web Services API is used by automation tools
 - D. Understand object-oriented terminology relevant to the vSphere Web Services API
 - E. Use the MOB to explore the vSphere object model and invoke methods
- IV. *vSphere PowerCLI Basics*
 - A. Describe features of vSphere PowerCLI
 - B. List common tasks to perform with vSphere PowerCLI
 - C. Connect vSphere PowerCLI to vCenter Server and VMware ESXi hosts
 - D. Define variables to use in vSphere PowerCLI
 - E. Use basic vSphere PowerCLI cmdlets
 - F. Describe features of the command pipeline
 - G. Examine vSphere PowerCLI objects
 - H. View vSphere PowerCLI object properties
 - I. Invoke vSphere PowerCLI object methods
- V. *vSphere PowerCLI Use Cases*
 - A. Perform day-to-day management tasks
 - B. Manage clusters, hosts, and virtual machines
 - C. Display performance metrics
- VI. *Advanced vSphere PowerCLI Concepts*
 - A. Examine View objects with the Get-View cmdlet
 - B. Convert View objects to VIOjects
 - C. Invoke vSphere Web Services API methods
- VII. *vRealize Orchestrator Overview*
 - A. Describe the vRealize Orchestrator architecture and interfaces
 - B. Describe the components of a workflow
- VIII. *vRealize Orchestrator Basics*
 - A. Understand inputs, outputs, and variables in workflows
 - B. Describe variable types: string, number, and more
 - C. Create variables in workflows
 - D. Implement variable binding in workflows
- IX. *Invoking Scheme Elements*
 - A. Invoke JavaScript from workflows
 - B. Invoke a workflow from workflows
 - C. Invoke an action from workflows
 - D. Manage user workflow inputs on the input form
 - E. Invoke a user interaction element from workflows
- X. *Branch and Looping*
 - A. Use decision elements in workflows
 - B. Use switch elements in workflows
 - C. Create decision loops in workflows
 - D. Use a for-each loop in workflows
- XI. *vRealize Orchestrator Advanced*
 - A. Handle exceptions in workflows
 - B. Perform logging in workflows
 - C. Debug workflows
- XII. *vRealize Orchestrator Assets*
 - A. Use configuration elements in workflows
 - B. Use resource elements in workflows
 - C. Create, import, and export vRealize Orchestrator packages.

VMware Data Center Automation with vRealize Orchestrator and vSphere PowerCLI

Course Outline (cont)

XIII. vRealize Orchestrator PowerShell Plug

- A. Add PowerShell hosts to the vCenter Server inventory
- B. Invoke scripts on PowerShell hosts
- C. Create custom workflows using the PowerShell plug-in

XIV. Guest Operations with vRealize Orchestrator and vSphere Power CLI

- A. Understand the architecture of virtual machine guest operations
- B. Identify the requirements for using guest operations
- C. Perform guest operations with vRealize Orchestrator and vSphere PowerCLI

XV. Leveraging vSphere Client Code Capture

- A. Understand how to capture code in the vSphere Client
- B. Use that code in a vRealize Orchestrator workflow or vSphere PowerCLI script