VMware Data Center Automation with VRealize Orchestrator and PowerCLI

Duration: **5 Days**

Overview:

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 will learn how to automate day-to-day administration tasks with VMware vSphere® PowerCLI™ and VMware vRealize® Orchestrator™. During class, you will use these tools to automate tasks in a realistic lab environment.
Product Alignment: vSphere PowerCLI 6.0, vRealize Orchestrator 7.0

Target Audience:

Experienced vSphere administrators who want to use available tools to automate day-to-day tasks

Pre-requisites:

Completion of the following course, or equivalent experience with vSphere deployments:

- VMware vSphere: Install, Configure, Manage [V6.0]

Course Completion:

After completing 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

Module 1: Course Introduction

- Introductions and course logistics
- Course objectives

Module 2: Automation in vSphere

- Identify the tools available to vSphere administrators for automation
- Understand the benefits of automation
- Understand the function of black boxes in programming

Module 3: vSphere API

- Identify the function of an API
- Recognise the components of the vSphere Web Services API
- Understand how the vSphere Web Services API is used by automation tools
- Understand object-oriented terminology relevant to the vSphere Web Services API
- Use the MOB to explore the vSphere object model and invoke methods

Module 4: vSphere PowerCLI Basics

- Describe features of vSphere PowerCLI
- List common tasks to perform with vSphere PowerCLI
- Connect vSphere PowerCLI to vCenter Server and VMware ESXi™ hosts
- Define variables to use in vSphere PowerCLI
- Use basic vSphere PowerCLI cmdlets
- Describe features of the command pipeline
- Examine vSphere PowerCLI objects
- View vSphere PowerCLI object properties
- Invoke vSphere PowerCLI object methods

Module 5: vSphere PowerCLI use Cases

- Perform day-to-day management tasks with vSphere PowerCLI

Module 9: vRealize Orchestrator Advanced

- Create basic decision loops in workflows
- Use a for-each loop in a workflow
- Understand how exceptions are handled in vRealize Orchestrator
- Use action elements in workflows
- Capture JavaScript with Onyx and use it in a workflow

Module 10: vRealize Orchestrator Use Case

- Create a workflow that deploys multiple virtual machines according to a customer specification

Module 11: vRealize Orchestrator PowerShell Plug-In

- Add Windows PowerShell hosts to the vCenter Server inventory
- Invoke scripts on Windows PowerShell Hosts
- Create Windows PowerShell workflows

Module 12: Guest Operations with vRealize Orchestrator and vSphere PowerCLI

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

- Design, develop, and run custom reusable vRealize Orchestrator workflows
- Incorporate JavaScript into vRealize Orchestrator workflows
- Select the appropriate tool for automating day-to-day tasks in vCenter Server

Module 6: Advanced vSphere PowerCLI concepts

- Examine view objects with the Get-View cmdlet
- Convert View Objects to VIObjects
- Invoke vSphere Web Services API methods
- Use the Onyx tool to capture vSphere PowerCLI code

Module 7: vRealize Orchestrator Basics

- Identify vRealize Orchestrator components
- Understand the function of plug-ins
- Add a vCenter Server instance to the vCenter Server plug-ins
- Add a vCenter Server instance to the vCenter Server plug-in
- List the components of a workflow
- Create a vCenter Server object with a library workflow
- Distinguish between workflow variable types
- Create a simple workflow
- Create workflow input and output parameters
- Set a workflow input parameter as an attribute
- Understand the role of binding in workflows
- Use a library workflow in a new workflow
- Use the setup wizard to perform parameter binding

Module 8: Developing vRealize Orchestrator Workflows

- Identify and use common vRealize Orchestrator workflow elements
- Implement vRealize Orchestrator workflow nesting
- List methods for calling other workflows in vRealize Orchestrator workflows
- Identify the information required to develop a workflow
- Use the vRealize Orchestrator workflow scripting debugger