CTREC HILTON IT ACADEMY

BUILDING TRAINING SOLUTIONS FOR THE IT WORLD

Microsoft Windows PowerShell v2 For Administrators

Days:	**4**
Format:	**Instructor-Led**
Class Code	**50414**
Certification Exams:	
Certification Track:	

Recommended Course Sequence

Knowledge of prerequisites noted below.

Course content is subject to change without notice.

Course Description:
This four-day instructor-led course provides students with the knowledge and skills to leverage Microsoft Windows PowerShell v2 to administer their Windows environment. Both the command line environment and the scripting capabilities inherent in Microsoft's automation engine are addressed during this hands-on course.

Target Student:
This course is intended for systems administrators responsible for managing Windows platforms who are interested in automating administrative tasks.

Prerequisites:
Before attending this course, students must have:

- Experience managing Windows operating systems.
- Familiarity with Windows Server 2008, Windows Server 2008 R2, or Windows 7.
- Scripting experience is recommended but not required.

Delivery Method:
Instructor led, group-paced, classroom-delivery learning model with structured hands-on activities.

At Course Completion:
After completing this course, students will be able to:

- Install and configure PowerShell v2 on various Windows operating systems.
- Navigate the command line interface as well as the integrated scripting environment.
- Leverage cmdlets to accomplish daily management tasks.
- Format information returned by PowerShell v2 in a variety of styles.
- Create PowerShell v2 scripts to automate routine tasks.
- Manage multiple systems concurrently though PowerShell v2 remoting.
- Understand the security capabilities within PowerShell v2 and how to manage them.
- Enhance the management of other Microsoft products by using the skills and general knowledge covered in this course.

Microsoft Windows PowerShell v2 For Administrators

Course Outline

Module 1: Introduction to PowerShell – the Basics
This module explains how to install and configure PowerShell. In addition, students will be introduced to many of the concepts of PowerShell, including cmdlets and PowerShell drives.

Lessons
Lesson 1: What is PowerShell? Lesson 2: PowerShell Cmdlets Lesson 3: PowerShell Snapins Lesson 4: PowerShell Modules Lesson 5: PowerShell Remoting Lesson 6: Navigating in PowerShell Lesson 7: PowerShell Profiles
Lab : Introduction to PowerShell
Installing PowerShellv2 Exploring Help Working with cmdlets Creating a custom profile Optional: Reading Registry Data

Module 2: The PowerShell Pipeline, Scripts and Syntax
This module explains how to use the PowerShell pipeline at the command line and in script files. It provides information on retrieving information on the properties and methods of objects. The module closes with information on command line syntax, managing output from cmdlets, and defining script blocks.

Lessons
Lesson 1: Pipelines Lesson 2: Scripts Lesson 3: Syntax, Output and Script Blocks
Lab : The PowerShell Pipeline, Scripts and Syntax
Working with the PowerShell Pipeline Using continuation characters for command line scripts Create a command line script Working with Operators

Microsoft Windows PowerShell v2 For Administrators

Module 3: Variables and Data Types, Variable Scopes, and Collections
This module explains how to use cmdlets associated with variables. addresses how PowerShell interprets variables based on their content. It reviews the common data types and how to control variable data types. It looks into the scope of the variable itself and finishes with using arrays.

Lessons
Lesson 1: Variables and Data Types Lesson 2: Variable Scopes Lesson 3: Collections
Lab : Variables and Data Types, Variable Scopes, and Collections
Working with variables and data types Working with arrays Working with hash tables

Module 4: Security
This module explains how identify and configure script execution policies. It includes information on securing script files through the use of certificates as well as how to capture and use alternate credentials when executing commands. The module ends with a discussion on securing remote sessions.

Lessons
Lesson 1: Script Execution Lesson 2: Signing Scripts Lesson 3: Requesting Credentials and Using Secure Strings Lesson 4: Securing Remote Sessions
Lab : Security
Script Execution Signing Scripts Requesting Credentials

Module 5: Remote Management
This module explains how use the different methods of executing commands remotely. It covers the requirements for using PowerShell remoting, managing remote sessions, and running background jobs.

Lessons
Lesson 1: Configuring Remote Management Lesson 2: Using PowerShell Remoting Lesson 3: Using Jobs
Lab : Remote Management
Using Built-in Remoting Configuring PowerShell Remoting Using Persistent Sessions Working with Background Jobs

Microsoft Windows PowerShell v2 For Administrators

Module 6: Script Flow Control Statements
This module explains how use the language elements of PowerShell. It covers the statements for looping, branching, and managing the behavior of those statements through the use of break and continue keywords.

Lessons
Lesson 1: Foreach and For Lesson 2: While / Do While / Do Until Lesson 3: If / Switch Lesson 4: Break /Continue
Lab : Script Flow Control Statements
Working with Foreach, If, and Switch Using While / Do While / Do Until

Module 7: Functions, Filters and Modules
This module explains how use the features of PowerShell which allow you to extend its functionality through reusable code. It includes creating robust functions by leveraging parameters and introduces modules which enhance the portability of reusable code.

Lessons
Lesson 1: Functions and Filters Lesson 2: Scripting with Functions and Parameters Lesson 3: Modules
Lab : Functions, Filters and Modules
Creating Functions Making Functions with Parameters Creating a Simple Module

Module 8: Error Handling
This module explains how use the error handling environment within PowerShell. It addresses the language components which enhance managing errors. The debugging options within both the console host and the ISE are presented as tools for debugging scripts.

Lessons
Lesson 1: Error Handling Lesson 2: Try / Catch / Finally Lesson 3: Script Debugging
Lab : Error Handling
Managing the Error Environment Using Try / Catch / Finally for Error Handling Using the ISE for Script Debugging

Microsoft Windows PowerShell v2 For Administrators

Module 9: Designing Security for Data
This module explains how use the topics covered in previous modules in every day administrative tasks. It combines the command line, script files, modules and functions to automate a variety of tasks. It introduces the concepts of advanced scripting which make PowerShell an enterprise-ready scripting environment.

Lessons
Lesson 1: Manipulating files and folders Lesson 2: Modifying Registry Data Lesson 3: Working with Events Lesson 4: Working with Active Directory Objects Lesson 5: Advanced Scripting
Lab : Administrative Uses
Scripting for the File System Scripting Registry Changes Scripting for Event Logs Scripting for Active Directory