

Windows PowerShell for Administrators

Course GWE50025A0: Three days; Instructor-Led
On This Page



↓ [Introduction](#)

↓ [Audience](#)

↓ [At Course Completion](#)

↓ [Prerequisites](#)

↓ [Course Outline](#)

Introduction

This three-day hands-on class will introduce administrators to the new Windows command-line shell, Windows PowerShell. Windows PowerShell offers both a command-line interface as well as a scripting environment. With connectivity to Microsoft products such as Microsoft Exchange Server 2007, Microsoft System Center Operations Manager (MOM 2007), and many more, Windows PowerShell provides a consistent interface to more easily control system administration and accelerate automation. It runs on Windows XP Service Pack 2 (SP2), Windows Server 2003, Windows Vista, and Windows Server 2008.

↑ [Top of page](#)

Audience

This course is intended for IT pros.

↑ [Top of page](#)

At Course Completion

After completing this course, students will be able to:

- Use Windows PowerShell commands and navigate the Command Line Interface (CLI).
- Use pipelines and scripts.
- Manipulate data using variables and arrays.
- Create, execute, and sign scripts for security.
- Use script flow control statements.

↑ [Top of page](#)

Prerequisites

Before attending this course, students must have:

- Experience administering servers.
- This module explains how to name, declare, assign values to, and use variables. It also describes how to store data in an array.

↑ [Top of page](#)

Course Outline

Module 1: Introduction to Windows PowerShell - the Basics

This module explains the basics of Windows PowerShell, the different commands available, and how to navigate using the Command Line Interface (CLI).

Lessons

Lesson 1: What Is Windows PowerShell?

- What Is Windows PowerShell?
- Installation
- Starting Windows PowerShell
- PowerShell Commands
- Shell Function Commands
- Script Commands
- Native Commands
- Command Line Interface (CLI) Navigation

Lesson 2: Windows PowerShell Cmdlets

Lesson 3: Windows PowerShell Snap-Ins

Lesson 4: Windows PowerShell Navigation

- Drives
- Aliases
- Parameters
- Help
- Variables

Lesson 5: Windows PowerShell Profiles

- Creating a Profile

Module 2: The Windows PowerShell Pipeline, Scripts, and Syntax

This module covers pipelines, scripts, and the syntax needed to run commands on Windows PowerShell.

Lessons

Lesson 1: Pipelines

Lesson 2: Scripts

- Properties and Methods
- Object Sorting

Lesson 3: Syntax, Special Characters, and Operators

- Quotes
- Output Redirection
- Command Continuation
- Special Characters
- Operator Precedence
- Operators Galore

Module 3: Variables and Data Types, Variable Scopes, and Arrays

This module covers variables and data types, how to scope variables, and how to approach arrays.

Lessons

Lesson 1: Variables and Data Types

- More Data Types
- Variables with Variables!
- Environment Variables
- Get-Variable
- Set-Variable
- New-Variable
- Clear-Variable
- Remove-Variable

Lesson 2: Variable Scopes

Lesson 3: Arrays

- Associative Arrays

Module 4: Security

This module covers script execution, Group Policy, script signing, and certificate creation for security.

Lessons

Lesson 1: Script Execution

- Running a Script
- Execution Policy
- Group Policy for Execution

Lesson 2: Script Signing

- Local Certificate Authority Creation
- Signing Certificate Creation
- Signing Scripts Using Certificates
- Secure String Creation
- Whatif

Lesson 3: Requesting Credentials and Using Secure Strings

Module 5: Script Flow Control Statements

This module covers the Foreach and For statements, the While/Do and While/Do Until statements, branching, and other script flow control statements.

Lessons

Lesson 1: Foreach and For

- Foreach
- For

Lesson 2: While/Do While/Do Until

- While
- Do While
- Do Until

Lesson 3: Branching with IF and SWITCH

- IF
- Switch

Lesson 4: Break/Continue

- Break
- Continue

Module 6: Formatting

In this module, students will learn formatting in Windows PowerShell, including cmdlets, and how to export results.

Lessons

Lesson 1: Using Format-cmdlets

- Format-List (FL)
- Format-Table
- Format-Wide
- Format-Custom
- Groupby
- Group-Object
- Session Colors

Lesson 2: Using Sort-Object, Where-Object

- Sort-Object
- Where-Object

Lesson 3: Exporting Results to Files

- CSV
- XML
- HTML

Module 7: Regular Expressions

This module explains how to use Regular Expression characters.

Lessons

Lesson 1: Understanding Regular Expression Characters

Lesson 2: Using Regular Expressions

- Select-String

Module 8: Functions

This module covers functions, how to use filters, and arguments. Students will learn how to pass arguments into a script.

Lessons

Lesson 1: Functions, Filters, and Arguments

- Functions
- Filters
- Function Management

Lesson 2: Scripting with Functions and Parameters

- Passing Arguments into a Script

Module 9: Error Handling

This module covers error handling and script debugging.

Lessons

Lesson 1: Error Handling

Lesson 2: Script Debugging

Module 10: Advanced Scripting for Administrators

In this module, students will learn how to manipulate files and folders, modify registry data, retrieve event log information, and understand timer jobs.

Lessons

Lesson 1: Manipulating Files and Folders

Lesson 2: Modifying Registry Data

Lesson 3: Retrieving Event Log Information

Lesson 4: Understanding ADSI and Windows PowerShell

Lesson 5: Using the New-Object cmdlet

Lesson 6: Understanding Timer Jobs