Microsoft

System Center Configuration Manager: Operating System Deployment

Workshop*PLUS*

A behind-the-scenes look at deploying the Windows operating system for enterprise environments by using Microsoft System Center Configuration Manager

Business Drivers

- Windows 10 provides IT professionals with advanced protection against modern security threats and comprehensive management and control over devices and apps. It also provides flexible deployment, update, and support options.

- The Windows 10 operating system has a number of elements that can be incorporated into digital workplace strategies. Digital workplace planners can use these to promote a more cloud-connected, user-centric, and self-service environment.

- Configuration Manager provides a comprehensive solution for change and configuration management for the Windows platform. It allows you to deploy operating systems, software applications, and software updates. Additionally, it allows you to monitor and remediate computers for compliance settings.

Overview

This Workshop*PLUS* course provides participants with the skills required to customize and troubleshoot operating system deployment in Configuration Manager. It also provides hands-on experience utilizing related technologies for deploying and upgrading to Windows in enterprise environments. This Workshop*PLUS* consists of instructor-led presentations, demonstrations, discussions, and hands-on-labs. Participants will gain insight into the internal functioning of supporting technologies for the entire process of operating system deployment with Configuration Manager.

The current version of this course is based on and supports **System Center Configuration Manager branch 1602**

Key Features and Benefits

In this Workshop*PLUS*, students will:
- Understand the terminology, concepts, architecture, and options for operating system deployment
- Understand supporting technologies such as Windows PE
- Configure Pre-Boot Execution Environment (PXE)
- Review various scenarios and learn the best practices for:
    - o Deploying operating systems to new computers
    - o Capturing an image from a reference computer
    - o Upgrading to Windows 10
    - o Using Windows provisioning tools and options
- Understand task sequences and drivers, and learn the tips to use them
- Explore user state transfer from former versions of operating systems to a newer version of the operating system
- Learn to keep operating system images updated through offline image servicing capabilities
- Explore customization techniques, troubleshooting, and examine the various places to utilize the Microsoft Deployment Toolkit (MDT)
- Explore the automation capabilities and integration with Microsoft Desktop Optimization Pack

Throughout the Workshop*PLUS*, students will have the opportunity to gain real-world knowledge and insights from our experienced Premier Field Engineers during hands-on-labs and discussions.

With Configuration Manager, you can keep operating systems and other software up-to-date, set security policies, and monitor status while giving your users access to preferred applications from the devices they choose.

Target Audience:

To ensure the highest quality knowledge transfer expected by attendees of this four-day WorkshopPLUS workshop, the class size is limited to a maximum of 16 students who meet the following criteria:

- *Prior experience with Configuration Manager is required*
- *Experience with Microsoft Deployment Toolkit is useful*
- *Experience with application packaging is useful*
- *Experience with Windows PowerShell is useful*

Technical Highlights

After attending this Workshop*PLUS*, students will be able to:

- Understand technologies involved in operating system deployment

- Deploy Windows to new computers in an enterprise

- Understand how to upgrade to Windows 10 in an enterprise

- Create and capture a reference operating system

- Customize operating system deployment

- Keep Windows operating system images more secure with updates

- Troubleshoot operating system deployment

- Use the Microsoft Deployment Toolkit to enhance user experience

- Automate operating system deployment tasks

Syllabus

This Workshop*PLUS* requires a FULL **four** days. Students should anticipate consistent start and end times for each day. Late arrival or early departure on any day is not recommended.

Module 1: Operating System Deployment Introduction, Concepts, and Architecture
This module introduces students to operating system deployment concepts and architecture.

Module 2: Windows PE
This module describes:
- How to use and customize Windows PE
- Boot image distribution
- How clients use the boot images

Module 3: Basic Deployments
This module will practice:
- Installing Windows 10 to a new PC
- Remove consumer featured apps
- Review deployment results and plan next revisions

Module 4: Boot Options (PXE and Media)
This module describes:
- The benefits of unknown computer support
- How to enable PXE services on a distribution point
- The use of task sequence variables

Module 5: Basic Customization
This module describes:
- How to customize the Windows 10 Start screen
- How to add a prestart command-line with BGInfo
- How to apply a custom XML unattended installation file

Module 6: Task Sequences and Variables
This module describes:
- Task sequences
- Task sequence variables

Module 7: Reference Image Capture
This module describes:
- Reference image creation and capture
- Reference image import

Module 8: Drivers
This module describes:
- Driver library management
- Driver import options
- WMI query techniques to ensure proper driver selection

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Module 9: User State Migration

This module explains:
- How to move user state data from a prior operating system
- The options for customizing user state data migration

Module 10: Upgrading to Windows 10

This module will cover:
- Upgrading Windows 7 to Windows 10
- Upgrading Windows 8.1 to Windows 10
- Customizing upgrades with drivers
- Customize upgrades with additional included files

Module 11: Offline Servicing

This module will discuss:
- Offline image management and what can be serviced offline
- How to add drivers, apps, updates, and language packages, and enable/disable Windows features

Module 12: Microsoft Deployment Toolkit Integration

This module will review:
- User-driven installations by using the MDT wizard
- Adding a custom page to the user-driven installation (UDI) wizard

Module 13: Advanced Customization Techniques

In this module, students will:
- Use advanced task sequence variables and scenarios
- Pre-deploy applications to the primary device user
- Discuss hidden deployment scenarios
- Create a provisioning package with Windows Imaging and Configuration Designer tools
- Set default applications
- Create pre-staged media

Module 14: Automation, Additional Tools, Tips, and Tricks

In this module, students will:
- Use Windows PowerShell to automate common operating system deployment tasks
- Configure Diagnostic and Recovery Toolset integration
- Configure error handling steps

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