

## SSM50292

### Administering and Maintaining Windows 7

#### Overview

##### About this Course

This five-day instructor-led course provides students with the knowledge and skills to successfully install, maintain, and troubleshoot Windows 7 computers. Through practical labs, you'll get invaluable experience with installation and upgrades, remote access, and the new desktop environment. You will learn how Windows 7 allows for vast improvements to security, overall system performance, and deployment—a robust combination unparalleled in the market.

In this Windows 7 training course, you'll focus on successful configuration of the IT Pro tools and applications that ship with Windows 7. You will learn to identify technical problems that can occur on your organization's client computers, and you'll discover the Windows 7 tools used to monitor and maintain those computers. By the end of this course, you will have installed and configured a Windows 7 desktop that is secure and on the network, while focusing on five main troubleshooting areas: operating system, hardware, networking, security, and applications.

##### Audience Profile

This course is intended for Experienced enterprise-level IT professionals who focus on a broad range of desktop operating system, desktop application, mobile device, networking, and hardware support issues, who have experience with Windows server operating systems, and whose jobs require them to stay knowledgeable and skilled on new versions and technology updates as defined by the business environment.

##### At Course Completion

After completing this course, students will be able to:

- How to use the various installation types and upgrade paths available.
- Configure and manage the Windows 7 desktop.
- Add a Windows 7 desktop to an active IPV4/IPV6 network.
- Configure Windows 7 for an Active Directory environment and the new Group Policy settings.
- Configure the Windows 7 IT Pro tools and applications.
- Windows 7 remote capabilities and utilities.
- How to use Windows firewall with advanced features and network profiles.
- Configure Windows 7 remote access and remote capabilities.
- How to use the Windows 7 Mobility Center to manage mobile Windows 7 machines.
- Secure the Windows 7 desktop.
- Configure and use the User account control in various network profiles.
- Configure Windows 7 third-party applications with Standard User Analyzer and the Application Compatibility toolkit.
- Monitor and troubleshoot Windows 7 computers for problems with the operating system, hardware, network security, and applications.

## Course Outline

### Module 1: Introduction to Windows 7

This module will provide a high level overview of the Windows desktop operating product line. It describes the Windows 7 product line and their features. It also describes the features of the Windows 7 boot process and how to perform a clean installation as well as an upgrade. Finally, this section describes the Windows Server 2008 R2 deployment technologies that you can use with Windows 7.

#### Lessons

- Evolution of the Windows Desktop Operating System
- Windows 7 Products and Features
- Windows 7 Hardware Requirements and Software Compatibility Tools
- Windows 7 Boot Process
- Windows 7 New Installations and Upgrades
- Windows Server Deployment Technologies for Windows 7

### Lab : Installing Windows 7 into Virtual Machine Technologies

- Perform a Clean of Windows 7
- Navigate, Identify, and Interpret the BCD
- Using Easy Transfer

After completing this module, students will be able to:

- Explain at a high level the evolution of the Windows desktop operating system
- Describe the features of Windows 7 products
- Explain the hardware requirements for Windows 7
- Describe the tools you can use for application compatibility testing
- Explain the Windows 7 boot process
- Install a Windows 7 desktop
- Upgrade to a Windows 7 desktop
- Describe the Windows Server 2008 R2 deployment technologies that are used with Windows 7

### Module 2: Configuring and Managing the Windows 7 Desktop

This module explains how to analyze the new features of the Windows 7 desktop. It also explores the new methodology for performing old tasks in an efficient manner. Understanding fully the Windows 7 desktop will allow you, as a support professional, to better serve your clients because the bulk of client issues stem from basic navigation and basic configuration troubleshooting.

#### Lessons

- Display Driver Technologies: Windows Vista vs. Windows 7
- Desktop Views: Windows Vista vs. Windows 7
- Personalizing the Desktop to Your Requirements
- Using the Control Panel Utilities to Personalize the Desktop

### Lab : Configuring the Windows 7 Desktop

- Computer Personalization
- Control Panel Navigation
- Changing Themes

After completing this module, students will be able to:

- Configure and manage the Windows 7 desktop
- Explain the differences between Windows Vista and Windows 7 display driver technologies
- Explain the differences between Windows Vista and Windows 7 desktop views
- Explain how to personalize the Windows 7 desktop to your requirements
- Use Windows 7 Control Panel utilities to personalize your desktop

### **Module 3: Customizing the Windows 7 User Interface**

This module explains how to create and manage Windows 7 user profile. This module introduces the features of Windows 7 user interface and discusses in depth the Windows 7 Aero graphics package . This module will take you through the steps of using Windows 7 Search and Indexing Service, including how to conduct and save searches.

#### **Lessons**

- Windows 7 Aero Graphics Package Overview
- Windows 7 User Profiles
- Windows 7 Ease of Access Center
- Windows 7 Search and Indexing Service

### **Lab : Working with Windows 7 Ease of Access Center and User Profile settings**

- Creating Users and Manipulating their Profiles (.MAN)
- Configure and Use Windows 7 Aero Features
- Working with File and Folder Options
- Using the Ease of Access Center
- Configuring and Managing Windows Search
- Configuring Custom Searches

After completing this module, students will be able to:

- Describe the Windows Aero graphics package and list its hardware and software requirements
- Describe the features of the Windows Aero graphics package
- Explain Windows 7 user profiles
- Describe the features of the Windows 7 Ease of Access Center utility
- Explain the Windows Search and Indexing services

### **Module 4: Windows 7 in the Workgroup Environment**

This module explains how to leverage the Windows 7 workgroup features so that you will be able to support the largest segment of computer networks in the market place. In this module you will be introduced to two different network types, the Workgroup and the Domain.

#### **Lessons**

- Windows Workgroups and Active Directory Domains
- Joining a Windows 7 Workgroup
- Windows 7 HomeGroups
- Windows 7 Sharing Methods
- Windows 7 Collaboration Infrastructure
- Encrypting File System

### **Lab : Configuring Windows 7 for the Workgroup**

- Configuring the Homegroup
- Create a New Library and Share it with the Homegroup
- Use the Homegroup Troubleshooter
- Using NTFS Encryption
- Backing Up and Restoring Your Encryption Key

After completing this module, students will be able to:

- Define the terms *workgroup* and *domain*
- Join a Windows 7 workgroup
- Configure a HomeGroup
- Explain how to use the Windows 7 HomeGroups to set up data sharing
- Create a new Windows 7 library
- Describe the Windows 7 collaboration infrastructure
- Describe Windows 7 data sharing
- Configure Windows 7 data sharing
- Describe the Encrypting File System

### **Module 5: Windows 7 Networking and LAN Connectivity**

This module explains how to successfully manage and monitor your networks so they can operate smoothly and efficiently. This module introduces you to the Windows 7 networking technologies as well as networking in general.

Lessons

- Data Networking Defined
- Windows 7 Control Panel: Network and Internet Utility
- Fundamentals of TCP/IP with Windows 7
- Windows Enhancements to IP Version 6
- Role of Network Location Policies with Windows 7

### **Lab : The Windows 7 LAN**

- Configure Windows 7 Branch Cache
- Using the NETSH Command Line Utility to Configure Branch Cache

After completing this module, students will be able to:

- Define data networking
- Describe the features of the Windows 7 Networking Control Panel
- Configure the Windows 7 Networking Control Panel
- Describe the features of the Networking and Sharing Center
- Use the Networking and Sharing Center to configure a Windows 7 network

- Add a Windows 7 desktop to an active network
- Configure IP protocol addressing with Windows 7
- Explain the fundamentals of TCP/IP with Windows 7
- Explain the Windows enhancements to IP version 6
- Configure IP version 6 with the Network and Sharing Center
- Explain the role of Windows 7 within a Branch Cache network
- Explain the role of network location policies with Windows 7

## **Module 6: Implementing Windows 7 in a Server 2008 R2 Active Directory Environment**

This module explains how to utilize the server side technologies that are available with Windows Server 2008 R2 and the enterprise abilities of Windows 7. This information will help you understand the things that you can do in your own network to make your job easier and make your data that much more available and secure.

### **Lessons**

- DNS for Windows Server
- Windows Server 2008 R2 Active Directory
- Windows 7 ADMX Templates
- Windows 7 Group Policy Objects and Types

### **Lab : Windows 7 in the Domain**

- Join the Windows Server 2008 R2 Domain
- Configure a Software Restriction Policy Path Rule
- Configure a Software Restriction Policy HASH Rule
- Configure Server 2008 R2 and Windows 7 Advanced Auditing
- Configure the RSAT Tools
- Using the RSAT Tools
- Configure Default AppLocker Rules

After completing this module, students will be able to:

- Describe at a high level the Domain Name Service for Windows Server
- Define Windows Server 2008 R2 Active Directory
- Join an Active Directory domain
- Configure the Windows 7 local security policy
- Configure Active Directory using the Windows 7 Active Directory tools
- Explain how to use the Windows 7 ADMX templates to pass security configurations
- Describe the Windows 7 group policy object types
- Configure the Windows 7 group policy objects

## **Module 7: Implementing Windows 7 Remote Capabilities and Utilities**

This module explains how to connect remote workers to your branch office as well as connect to other Windows 7 machines for helpdesk type duties. You will discuss RSAT (Remote Server Administration Tools), which allows administrators to use their Windows 7 workstations to manage their remote servers with all of the necessary tools.

### **Lessons**

- Windows 7 Virtual Private Networking Technologies

- Configuring the VPN Client and Connecting to the Server
- Windows 7 DirectAccess
- RDP Version 7 Client Features

### **Lab : Configure and Manage Remote Access**

- Configure Windows 7 and Server 2008 R2 VPN Access
- Configure Routing and Remote Access
- Configure a Windows 7 VPN Connection
- Connect to a Server 2008 R2 RRAS Server with VPN
- Create a VPN Shortcut
- Create an RDP Connection and Connect to a Server 2008 R2 Server
- Configure the Windows Firewall to Support Remote Technologies

After completing this module, students will be able to:

- Describe the Windows 7 VPN technologies
- Configure the Windows VPN connections
- Define Windows 7 DirectAccess networks
- Describe the Windows 7 DirectAccess utility
- Configure the Windows 7 DirectAccess utility
- Describe the features of the RDP version 7 client
- Use the RDP client to connect to a remote computer
- Configure the Windows 7 Firewall to support the RDP client connections

### **Module 8: Windows 7 for Mobile Computers**

This module explains how to understand and manage your mobile work force and challenges they face on a daily basis with Windows 7.

Lessons

- Windows 7 Power Management Options
- Windows 7 Backup and Restore Center
- Windows 7 System Image Backup
- Windows 7 Offline Files and Folders Utility
- BitLocker for the Mobile Platform
- Windows 7 Sync Center

### **Lab : Configure Notebook and Mobility Features**

- Create a Custom Windows 7 Power Plan
- Configure all Power Plan Options
- Use Group Policy to Pass Power Plans to Organizational Units
- Using the Windows 7 Backup and Restore Center
- Configure and Execute Data Backups
- Configure and Execute Data Restorations
- Configure Offline Files and Folders and the Sync Center
- Configure and Use "Previous Versions"

After completing this module, students will be able to:

- Describe the Windows 7 power management options

- Configure the Windows 7 power management options
- Use the Windows 7 Mobility center to manage mobile computers
- Describe the purpose of the Windows 7 Backup and Restore center
- Configure data backups and data restrictions
- Describe the system image backup process
- Configure a Windows 7 computer for a complete system backup and restore process
- Describe the purpose of offline files and folders
- Configure offline files and folders
- Describe how BitLocker is used for the mobile platform
- Configure and manage BitLocker
- Describe the purpose of the Windows 7 Sync Center
- Configure the Windows 7 system repair disk

## **Module 9: Implementing Windows 7 Local, Network and Internet Security**

This module explains how to use the various technologies that you can employ to secure your Windows 7 installations, like User Access Control, NAP (Network Access Protection), the Windows firewall and a host of other tools.

### Lessons

- Advanced User Account Control Settings
- Server 2008 R2 Network Access Policy Engine
- Configuring the Windows 7 Firewall
- File and Registry Virtualization
- Windows 7 Service Hardening
- Windows Defender
- Windows 7 Dynamic Updates from Microsoft
- Using WSUS to Deploy Windows Updates to Windows 7 Clients

### **Lab : Configuring and Protecting Data Locally and over the Network**

- Configure and Use the User Account Control Mechanism
- Promote a Windows Server 2008 R2 Server to a Domain Controller
- Configure Network Access Protection on the Server 2008 R2 Server
- Configure Software Update Services Location

After completing this module, students will be able to:

- Describe the advanced User Account Control settings
- Configure the advanced User Account Control settings
- Describe the Server 2008 R2 Network Access Policy engine
- Configure the Windows 7 Network Access Policy settings
- Configure the Windows Firewall features to protect internal access to data
- Describe file and registry virtualization
- Configure the file and registry virtualization feature within the local security policy
- Describe Windows 7 service hardening
- Describe how applications and services interact within Windows 7
- Describe the Windows Defender utility
- Describe the Windows 7 Dynamic Updates from Microsoft
- Describe the Windows Server SUS for Updates feature
- Configure Windows Server SUS for updates
- Configure Windows 7 to use Windows SUS

## **Module 10: Working with the Windows 7 NTFS File System and Its Features**

This module explains how to use NTFS and its corresponding features. You will explore the world of the SID (Security Identifier), including the NTFS permissions, Share permissions versus NTFS permissions.

### **Lessons**

- NTFS Version 6.x Features
- NTFS Security Principals and Identifiers
- Assigning NTFS Permissions
- Secondary Logon Service
- Windows 7 Encryption

### **Lab : Using Windows 7 NTFS to Technologies Secure your Data**

- Configure NTFS Security
- Use the Effective Permissions Utility

After completing this module, students will be able to:

- Define NTFS
- Describe the features of NTFS
- Describe the purpose of the NTFS security principals and security identifiers
- Describe the purpose of the NTFS permissions
- Configure the NTFS permissions
- Compare and contrast the NTFS and share permissions
- Describe the purpose of the Secondary Logon service
- Describe the Windows 7 encryption process

## **Module 11: Troubleshooting and Monitoring Windows 7**

This module explains how to use the Windows 7 Reliability Monitor, the Performance Monitor, and the other utilities to maintain and monitor your Windows 7 network.

### **Lessons**

- Windows 7 Reliability Monitor
- Windows 7 Performance Monitor
- Windows 7 Troubleshooting Tools
- Windows 7 Task Manager
- Windows 7 Problem and Reporting Solutions Utility
- Windows 7 Performance Features
- Other Features of the System Properties Dialog Box
- Windows 7 Administrative Tools

### **Lab : Configure, Troubleshoot, and Monitor Windows 7**

- Use Reliability Monitor
- Use and Navigate the Performance Monitor Utility
- Adding Performance Monitor Counters and Manipulating the Performance Monitor Graphs
- Create and Use Data Collector Sets (User-Defined and System-Defined)
- Using PowerShell Version 2.0

After completing this module, students will be able to:

- Describe the purpose of the Reliability Monitor
- Configure the Reliability Monitor
- Describe the purpose of the Performance Monitor
- Configure the Performance Monitor
- Describe the purpose of the Windows Memory Diagnostic tool
- Use the Windows Memory Diagnostic tool to troubleshoot memory problems on a Windows 7 computer
- Configure the network troubleshooting tools
- Describe the purpose of the MSCONFIG utility
- Use the MSCONFIG utility to troubleshoot a Windows 7 computer
- Use the Windows Task Manager to manage and troubleshoot a Windows 7 computer
- Configure the Windows Problem Reports and Solutions utility
- Configure the Windows 7 performance options
- Configure the Windows startup and recovery options
- Use the System Restore features to restore a malfunctioning computer to an earlier point in time
- Describe the purpose of each of the Windows 7 Administrative Tools

## **Module 12: Running and Troubleshooting Applications on Windows 7**

This module explains how to use Windows 7 and other stand alone utilities for application compatibility, remediation, and mitigation.

### **Lessons**

- Mitigating Application Compatibility Issues
- Windows 7 File and Registry Virtualization Process
- Windows 7 Performance Variables
- Microsoft Virtual PC and XP Mode
- Windows 7 Virtual Hard Drive Mounting Technology

### **Lab : Working with Windows 7 Applications**

- Run and Configure the Program Compatibility Wizard
- Install the Application Compatibility Toolkit
- Run the Standard User Analyzer
- Create, Mount, and Boot a .VHD file
- Use Windows VPC XP Mode
- Install and Use XP Mode Applications

After completing this module, students will be able to:

- Configure the Program Compatibility Wizard
- Use the Program Compatibility Wizard
- Describe the UAC settings for applications
- Describe the purpose of the Standard User Analyzer
- Install and configure the Standard User Analyzer
- Describe the features of the Application Compatibility Toolkit 5.5
- Install the Application Compatibility Toolkit 5.5
- Configure the performance variables that affect applications
- Manipulate the Windows 7 environment variables for legacy applications

- Describe the purpose of the Microsoft Virtual PC with XP mode
- Use the Microsoft Virtual PC with XP mode
- Describe the Windows 7 VHD mounting process
- Use the Windows 7 VHD mounting process

### **Module 13: Configuring Internet Explorer 8**

This module explains how to set up and configure Internet Explorer 8. This module will give you an understanding of the philosophy behind Internet Explorer 8 and be familiar with some of the new and exciting features of IE8.

Lessons

- Setting Up and Configuring IE8
- IE8 Menus and Commands

### **Lab : Configure and Use Internet Explorer 8**

- Configure IE8 During Its First Run
- Configure and Use Internet Explorer 8 Search Features
- Configure Internet Explorer Accelerators
- Configure and Use Internet Explorer Privacy Filters
- Configure Internet Explorer 8 Web Slices

After completing this module, students will be able to:

- Describe the new features of Internet Explorer 8
- Configure the Internet Explorer 8 startup options
- Describe the purpose of the search features
- Use the search features
- Explain the purpose of the Internet Explorer 8 Accelerators
- Configure the Internet Explorer 8 Accelerators
- Describe the features of the Internet Explorer Privacy utilities
- Configure the Internet Explorer Privacy features
- Explain the purpose of the Internet Options configurations and tabs
- Use the Internet Options dialog box to configure Internet Explorer 8

### **Before attending this course, students must have:**

- Familiarity with computer hardware and devices, such as the ability to look into Device Manager and look for unsupported devices.
- Experience supporting previous versions of the Windows operating system.
- Basic TCP/IP knowledge, such as knowing why you need to have a valid IP address.
- Basic Windows and Active Directory knowledge, such as knowledge about domain user accounts, domain vs. local user accounts, user profiles, and group membership