



# Supporting and Troubleshooting Windows 10

Course 10982B      5 Days      Instructor-led, Hands-on

## Course Description

This course provides students with the knowledge and skills that they need to support and troubleshoot Windows 10 PCs and devices in a Windows Server domain environment. Students who take this course must have a good understanding of how to configure Windows 10 and its features, and how they can use these features in enterprise environments. This course focuses on troubleshooting issues with Windows 10 devices.

This course is intended for IT professionals who administer and support Windows 10 desktops, devices, users, and associated network and security resources. Students who seek certification in the 70-697 Windows 10 Configuring exam will also benefit from this course. This course is also intended to provide skills for Enterprise Desktop/Device Support Technicians (EDSTs) who provide Tier 2 support to users who run Windows 10 desktops and devices within a Windows domain environment in medium to large enterprise organizations.

## Course Objectives

At the end of the course, attendees will be able to:

- Describe the processes involved in planning and using a troubleshooting methodology for Windows 10.
- Troubleshoot startup issues and operating system services on a Windows 10 PC.
- Resolve issues related to hardware devices and device drivers.
- Troubleshoot Windows 10 PCs remotely.
- Troubleshoot issues related to network connectivity.
- Troubleshoot client configuration failures and GPO application issues.
- Troubleshoot issues related to user settings.
- Troubleshoot remote connectivity issues.
- Resolve issues related to accessing resources from computers that are domain-joined.
- Resolve issues related to accessing resources from computers that are not domain-joined.
- Troubleshoot issues related to application installation and operation.
- Recover a PC running Windows 10.

## Prerequisites

Before attending this course, students must have:

- At least two years of experience in the IT field.

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- Knowledge of networking fundamentals, including Transmission Control Protocol /Internet Protocol (TCP/IP), User Datagram Protocol (UDP), and Domain Name System (DNS).
- Knowledge of Microsoft Active Directory Domain Services (AD DS) principles and fundamentals of AD DS management.
- Understanding of Windows Server 2008 R2 or Windows Server 2012 fundamentals.
- Understanding of Microsoft Windows Client essentials; for example, working knowledge of Windows 7, Windows 8 and/or Windows 10.
- Basic understanding of Windows PowerShell syntax.

## Course Outline

### Module 1: Implementing a Troubleshooting Methodology

This module explains how to describe the processes involved in establishing and using a troubleshooting methodology. Module also covers various Windows 10 fundamentals, high level architecture and often used troubleshooting tools.

#### Lessons

- Overview of Windows 10
- Introduction to the EDST Job Role
- Overview of the Troubleshooting Steps
- Troubleshooting Tools

#### Lab : Implementing a Troubleshooting Methodology

- Implementing a Troubleshooting Methodology

#### Lab : Using Troubleshooting Tools

- Using Troubleshooting Tools

After completing this module, students will be able to:

- Describe Windows 10.
- Understand the EDST job role.
- Describe troubleshooting steps.
- Describe troubleshooting tools.

### Module 2: Troubleshooting Startup Issues

This module describes how to identify and troubleshoot issues that affect the Windows 10 operating system's ability to start, and how to identify problematic services that run on the operating system. It also describes how to use the Windows 10 advanced troubleshooting tools, collectively known as the Windows Recovery Environment (Windows RE).

#### Lessons

- Overview of the Windows 10 Startup Recovery Environment
- Troubleshooting Startup Settings
- Troubleshooting Operating System Services Issues
- Recovering BitLocker-Protected Drives

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### **Lab : Troubleshooting Startup Issues**

- Resolving a Startup Issue (1)
- Resolving a Startup Issue (2)

### **Lab : Recovering BitLocker-Encrypted Drives**

- Recovering a BitLocker-Encrypted Drive
- Creating a New BitLocker Password

After completing this module, students will be able to:

- Describe the Windows 10 startup architecture.
- Optimize and troubleshoot startup settings.
- Troubleshoot Windows 10 operating system services.
- Recover drives encrypted with Windows BitLocker Drive Encryption.

## **Module 3: Troubleshooting Hardware and Device Drivers**

This module explains how to support users that utilize a multitude of devices that run Windows 10. It will also describe how an operating system uses device drivers, and how you can troubleshoot hardware devices and device drivers. The module also covers how to monitor the reliability of a Windows 10 device and troubleshoot any issue that might occur.

### **Lessons**

- Troubleshooting Device Driver Failures
- Overview of Hardware Troubleshooting
- Troubleshooting Physical Failures
- Monitoring Reliability
- Configuring the Registry

### **Lab : Troubleshooting Device Driver Issues**

- Troubleshooting a Missing Device Driver
- Resolving Hardware Problems
- Resolving Device Driver Problem
- Configuring Group Policy Settings to Control Device Installation

### **Lab : Troubleshooting Hardware Issues**

- Diagnosing Memory and Troubleshooting Failed Disk Redundancy
- Accessing a Volume from a Failed Computer

After completing this module, students will be able to:

- Troubleshoot hardware device drivers.
- Describe the process of troubleshooting hardware.
- Troubleshoot physical hardware failures.
- Monitor the reliability of Windows 10 devices.
- Configure the Windows 10 registry.

## **Module 4: Troubleshooting Remote Computers**

This module explores three ways in which you can remotely connect to and manage remote computers: Remote Desktop, Windows Remote Assistance, and Windows PowerShell remoting.

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### **Lessons**

- Using Remote Desktop
- Using Remote Assistance
- Remoting with Windows PowerShell

### **Lab : Troubleshooting Remote Computer by using Remote Desktop and Remote Assistance**

- Using Remote Desktop
- Using Remote Assistance

### **Lab : Troubleshooting Remote Computer by Using Windows PowerShell**

Using Windows PowerShell Remoting

After completing this module, students will be able to:

- Use Remote Desktop to manage remote computers.
- Use Windows Remote Assistance to manage remote computers.
- Use Windows PowerShell remoting to manage remote computers.

### **Module 5: Resolving Issues with Network Connectivity Issues**

This module explains the tools that you can use to set up and troubleshoot both wired and wireless network connections more efficiently. This module also explains how to support your organization's network infrastructure, and how to use these tools to configure and troubleshoot network connections.

### **Lessons**

- Determining Network Settings
- Troubleshooting Network Connectivity
- Troubleshooting Name Resolution
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### **Lab : Resolving Network Connectivity Issues**

- Resolving a Network Problem (1)
- Resolving a Network Problem (2)
- Troubleshooting a Wireless Network

After completing this module, students will be able to:

- Determine network settings in Windows 10.
- Troubleshoot issues with network connectivity.
- Troubleshoot issues with name resolution.

### **Module 6: Troubleshooting Group Policy**

This module provides an overview of the Group Policy application and describes how to resolve issues in client configuration GPO application.

### **Lessons**

- Overview of Group Policy Application
- Resolving Client-Configuration Failures and GPO Application Issues
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### **Lab : Troubleshooting Issues with Group Policy Application**

- Resolving Group Policy Application (1)
- Resolving Group Policy Application (2)
- Resolving Group Policy Application (3)

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### **Lab : Resolving Issues with Group Policy**

Resolving Group Policy Application (1)

After completing this module, students will be able to:

- Understand Group Policy application.
- Troubleshoot Group Policy application.
- Resolve client configuration failures and GPO application.

### **Module 7: Troubleshooting User Settings**

In this module, you will examine issues that can occur when users sign in, and you will also learn about how to troubleshoot the application of user settings.

#### **Lessons**

- Troubleshooting Sign In Issues
- Troubleshooting the Application of User Settings

#### **Lab : Troubleshooting Sign in Problems**

- Resolving Sign-In Issue 1
- Resolving Sign-In Issue 2

#### **Lab : Troubleshooting the Application of User Settings**

- Resolving Folder Redirection Issue

After completing this module, students will be able to:

- Troubleshoot user sign-in issues.
- Troubleshoot the correct application of user settings.

### **Module 8: Troubleshooting Remote Connectivity**

This module explains these technologies, describes common problems with their implementation and usage, and provides several possible mitigations for those problems.

#### **Lessons**

- Troubleshooting VPN Connectivity Issues
- Troubleshooting DirectAccess

#### **Lab : Troubleshooting VPN Connectivity**

- Troubleshoot VPN Connectivity Issue 1
- Troubleshoot VPN Connectivity Issue 2

#### **Lab : Configuring and Troubleshooting DirectAccess**

- Prepare the DirectAccess Implementation
- Configuring and Verifying Client-Side Settings for DirectAccess
- Troubleshooting DirectAccess

After completing this module, students will be able to:

- Troubleshoot virtual private network (VPN) connectivity issues.
- Configure and troubleshoot DirectAccess.

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## **Module 9: Troubleshooting Resource Access Within a Domain**

This module explains how to resolve problems of resource access from computers that are domain members. It explains how to troubleshoot file permission issues, encrypting file system (EFS) and printer access issues.

### **Lessons**

- Troubleshooting File Permissions Issues
- Recovering Files Encrypted by EFS
- Troubleshooting Printer Access Issues

### **Lab : Troubleshooting File Access Issues**

- Resolving a File Access Issue (1)
- Resolving a File Access Issue (2)
- Resolving a File-Access Issue (3)

### **Lab : Troubleshooting Access to Encrypted Files**

- Encrypting and Recovering Access to Encrypted Files

### **Lab : Troubleshooting Printer Issues**

- Resolving a Printer Access Issue (1)
- Resolving a Printer Access Issue (2)

After completing this module, students will be able to:

- Troubleshoot issues with file permissions.
- Troubleshoot issues with file access.
- Recover files encrypted by Encrypting File System (EFS).
- Troubleshoot access to encrypted files.
- Troubleshoot issues with accessing printers.

## **Module 10: Troubleshooting Resource Access for Clients That Are Not Domain Members**

This module explains how to enable students to resolve problems of resource access from computers that are not domain-joined.

### **Lessons**

- Configuring and Troubleshooting Device Registration
- Configuring and Troubleshooting Work Folders
- Configuring and Troubleshooting OneDrive Access

### **Lab : Troubleshooting Resource Access for Clients That Are Not Domain Members**

- Troubleshooting Device Registration
- Troubleshooting Work Folders 1
- Troubleshooting Work Folders 2
- Troubleshooting OneDrive for Business

After completing this module, students will be able to:

- Configure the Device Registration feature.
- Configure and troubleshoot the Work Folders feature.
- Configure and troubleshoot access to Microsoft OneDrive.

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## **Module 11: Troubleshooting Applications**

This module examines the issues, including application compatibility issues that affect a user's ability to install and run these two types of applications. This module also covers how users can resolve web browser related issues, specifically issues associated with both Internet Explorer and Microsoft Edge.

### **Lessons**

- Troubleshooting Desktop App Installation Issues
- Troubleshooting Desktop Apps
- Managing Windows Store Apps
- Troubleshooting Access to Company Web Applications

### **Lab : Troubleshooting Desktop Apps**

- Troubleshooting AppLocker Policy Application
- Troubleshooting Application Compatibility Issues

### **Lab : Troubleshooting Access to Company Web Applications**

- Troubleshooting Internet Explorer Issues
- Troubleshooting Microsoft Edge Issues

After completing this module, students will be able to:

- Troubleshoot desktop app installation issues.
- Troubleshoot desktop apps.
- Manage Universal Windows apps.
- Troubleshoot web browsers.

## **Module 12: Maintaining Windows 10**

This module discusses how to provide for the ongoing maintenance of Windows 10 operating systems.

### **Lessons**

- Managing and Troubleshooting Windows Activation
- Monitoring and Troubleshooting Computer Performance
- Applying Applications and Windows Updates

### **Lab : Monitoring and Troubleshooting Performance**

- Resolve a Performance-Related Issue
- Resolve a CPU-Related Performance Issue
- Resolve a Disk-Related Performance Issue

After completing this module, students will be able to:

- Manage and troubleshoot volume activation in Windows operating systems.
- Monitor and troubleshoot Windows 10 performance.
- Update applications and Windows 10.

## **Module 13: Recovering Data and Operating System**

This module explains how to use file recovery and troubleshoot deleted files. It also covers how to recover a Windows 10 computer.

### **Lessons**

- File Recovery in Windows 10

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- Recovering an Operating System

**Lab : Recovering Data**

- Resolving Issues with Previous Versions

**Lab : Provisioning Computer to Comply with Company Standards**

- Provision Computer to Comply with Company Standards

After completing this module, students will be able to:

- Recover files in Windows 10 by configuring and using file-recovery features.
- Recover a computer that is running Windows 10.