

50331D – Windows Client, Enterprise Desktop Support Technician

(Syllabus)

This five-day instructor-led course provides students with the knowledge and skills needed to isolate, document and resolve problems on Windows client computers. The focus of the course is troubleshooting and security issues. It includes PowerShell and Azure tutorials.

Course exercises can be completed on a student computer capable of virtualization or in Microsoft Azure. Students may use a free Azure subscription for the labs which allows them to continue practicing class exercises after the class.

Audience

This course is intended for Windows desktop support technicians who resolve Tier 1 & 2 problems on desktop or cloud-based systems. A minimum of two years of experience configuring and supporting Windows computers is recommended.

At Course Completion

After completing this course, students will be able to:

- Identify and resolve Windows application issues
- Identify the cause of and resolve networking issues
- Manage and maintain systems that run Windows client operating systems
- Support mobile users
- Identify the cause of and resolve security issues

Prerequisites

Before attending this course, students must have:

- Experience working in a domain environment
- Experience installing and using desktop & command-line tools

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Module 1: Identify and Resolve New Software Installation Issues

This module explains how to fix problems that occur during the installation of new software.

Lessons
<ul style="list-style-type: none">• Overview• Planning New Software Deployment• Multilingual Deployment• Using Group Policy to install software• Using Software Restriction Policies• Digitally Signing Software• Using WMI• Using Applocker• Using Virtualization for Testing• Resolve Software Installation Issues• Review
Lab 1: Identify and Resolve New Software Installation Issues
<ul style="list-style-type: none">• Create a Repair Disk and Installation Partitions• Install and Configure Windows Clients• Install Programs and test Applocker• Configure Compatibility Settings

After completing this module, students will be able to:

- Understand the different installation options for Windows
- Understand the different installation options for Windows applications
- Resolve Windows installation problems
- Prevent users from running unapproved applications

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Module 2: Resolve Software Configuration Issues

This module explains how to fix application install problems caused by older programs or new features and options.

Lessons
<ul style="list-style-type: none">• Overview• Change Default Settings on the Image• Enable and Disable Features• Pointing to a Network Resource• Configuring Updates• Resolve Configuration Issues with Group Policy• Driver Updates• Problem Steps Recorder• Resolve Software Configuration Issues• Review
Lab 2: Resolve Software Configuration Issues
<ul style="list-style-type: none">• Install the Windows Automated Installation Kit• Create a Windows PE bootable image• Create a VHD disk• Install Windows on a VHD• Boot Windows from a VHD• Use the Problem Steps Recorder

After completing this module, students will be able to:

- Create a Windows VHD disk
- Configure operating system features
- Understand the impact of Driver Updates
- Fix software configuration problems
- Use the Problem Steps Recorder tool

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Module 3: Resolve Software Failure

This module explains how to fix problems with applications that have problems after being installed.

Lessons
<ul style="list-style-type: none">• Overview• Event Viewer• Event Forwarding• Application Compatibility Toolkit• Windows Troubleshooting Platform• Windows Experience Index• Testing Compatibility with Safe Mode• System Restore• Resolve Software Failure• Review
Lab 3: Resolve Software Failure
<ul style="list-style-type: none">• Install applications written for older versions of Windows• Use the Program Compatibility Tool• Use PowerShell scripts to configure Network Adapters• Use the Troubleshooter to enable the network adapter• Install Windows SDK• Create a Troubleshooting Pack with the SDK• Configure Event Forwarding• Use System Restore

After completing this module, students will be able to:

- Configure Event Forwarding
- Use System Restore to fix desktop problems.
- Create a Windows Troubleshooter

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Module 4: Identify and Resolve Logon Issues

This module explains how to fix logon problems and configure local and roaming logon profiles.

Lessons
<ul style="list-style-type: none">• Overview• Authentication Process• Machine Accounts• Trust Relationships• Network Services• User Account Properties• User Profiles• Resolve Logon Issues• Review
Lab 4: Identify and Resolve Logon Issues
<ul style="list-style-type: none">• Join a computer to the domain• Install Remote Server Administration Tools (RSAT)• Test and Verify Domain User Account Properties• Create Logoff script using PowerShell• Test the use of Roaming Profiles• Test the use of Mandatory Profiles

After completing this module, students will be able to:

- Create Roaming and Mandatory User Profiles
- Configure Machine Accounts in Active Directory
- Configure User Account Properties in Active Directory

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Module 5: Identify and Resolve Network Connectivity Issues

This module explains how to troubleshoot connectivity and network problems for client computers.

Lessons
<ul style="list-style-type: none">• Overview• Scope of the Problem• Hardware Issues• TCP/IP Configuration• Network Routing• IPSec Configuration• Network Connectivity Tools• Branch Cache• Resolve Network Connectivity Issues• Review
Lab 5: Identify and Resolve Network Connectivity Issues
<ul style="list-style-type: none">• Use command-line tools to identify and fix network connectivity problems• Fix connectivity problems caused by problem scripts

After completing this module, students will be able to:

- Use command-line tools to troubleshoot connectivity problems.
- Use the Windows Troubleshooters to fix configuration issues.
- Configure Advanced TCP/IP options on a client computer

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Module 6: Identify and Resolve Name Resolution Issues

This module explains how to use network services and local computer files to resolve computer names.

Lessons
<ul style="list-style-type: none">• Overview• DNS Name Resolution• Using a Hosts files• WINS Configuration• Using LMHOSTS files• Name Resolution Order• Manual vs DHCP Configuration• Resolve Name Resolution Issues• Review
Lab 6: Identify and Resolve Name Resolution Issues
<ul style="list-style-type: none">• Configure and Test DNS Resolution• Configure and Test Hosts File Resolution• Configure and Test NetBIOS Resolution

After completing this module, students will be able to:

- Configure records on a DNS Server
- Configure HOSTS records
- Using command-line and scripting tools to configure TCP/IP settings

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Module 7: Identify and Resolve Network Printer Issues

This module explains how to configure printer settings and security.

Lessons
<ul style="list-style-type: none">• Overview• Connecting to a Network Printer• Managing the Print Spooler• Setting Printer Priorities• Creating Printer Pools• Configuring Drivers• Printer Schedules• Printer Permissions• Manage Printers with Group Policy Settings• Resolve Network Printer Issues• Review
Lab 7: Identify and Resolve Network Printer Issues
<ul style="list-style-type: none">• Install local and network printers• Create and use a separator page• Configure Printer Redirection and Printer Pooling• Move the Print Spooler Directory

After completing this module, students will be able to:

- Optimize the performance of the Print Spooler
- Redirect Print Jobs from non-functioning Printers
- Manage Active Directory registration of Printers
- Manage Printer Permissions

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Module 8: Identify and Resolve Performance Issues

This module explains how to improve the performance of a system by monitoring and controlling the use of resources by applications.

Lessons
<ul style="list-style-type: none">• Overview• Analyzing Event Logs• Setting Power Management• Optimize Processor Usage• Optimizing Memory Usage• Optimize Hard Drive Usage• Optimize Network Usage• Performance Tools• Resolve Performance Issues• Review
Lab 8: Identify and Resolve Performance Issues
<ul style="list-style-type: none">• Schedule and Perform a Disk Defragmentation• Using Task Manager• Using Resource Monitor• Display a message when a Service stops

After completing this module, students will be able to:

- Configure automatic responses to Service failure
- Manage the use of Processing resources by applications
- View and control active connections to a computer
- Optimize Hard-Disk performance.

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Module 9: Identify and Resolve Hardware Failure Issues

This module explains how to diagnose hardware problems on a computer.

Lessons
<ul style="list-style-type: none">• Overview• Diagnosing Memory Failure Issues• Hard Drive Issues• Network Card Issues• Power Supply Issues• Windows Hardware Diagnostic Tools• Resolve Hardware Failure Issues• Review
Lab 9: Identify and Resolve Hardware Failure Issues
<ul style="list-style-type: none">• Use the Windows Memory Diagnostics Tool• Fix Hard Disk Errors• Use the Reliability Monitor• Use Event Viewer to Find Hardware Information

After completing this module, students will be able to:

- Understand how to be proactive in dealing with hardware problems
- Use Windows hardware diagnostic tools

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Module 10: Identify and Resolve Wireless Connectivity Issues

This module explains how to configure reliable and secure wireless connectivity for client computers.

Lessons
<ul style="list-style-type: none">• Overview• Signal Strength• Wireless Security• Wireless Profiles• Management Options for Wireless Devices• Resolve Wireless Connectivity Issues• Review
Lab 10: Identify and Resolve Wireless Connectivity Issues
<ul style="list-style-type: none">• No Lab Exercises

After completing this module, students will be able to:

- Understand the encryption options available for wireless networks
- Use Windows Wireless security options
- Fix client connectivity problems

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Module 11: Identify and Resolve Remote Access Issues

This module explains how to configure remote network connections for client computers.

Lessons
<ul style="list-style-type: none">• Overview• Remote Access Methods• Dial-up Configuration• VPN Configuration• DirectAccess Configuration• Authentication Protocols• Resolve Remote Access Issues• Review
Lab 11: Identify and Resolve Remote Access Issues
<ul style="list-style-type: none">• Configure Remote Access settings for a domain user account• Create and Test a VPN Connection

After completing this module, students will be able to:

- Understand the security options available when creating remote access connections
- Understand the new capabilities of VPN connections that use DirectAccess
- Resolve connectivity problems for VPN and Dial-Up connections

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Module 12: Manage File Synchronization

This module explains how to allow end-users to work with network files that are being synchronized on their local desktops or laptops.

Lessons
<ul style="list-style-type: none">• Overview• Configuring Offline File Access• Synchronization Settings• Transparent Caching• Roaming Profiles• Restoring Network Files• Resolve File Synchronization Problems• Review
Lab 12: Manage File Synchronization
<ul style="list-style-type: none">• Configure and Test Offline Files• Restore the Previous Version of a File

After completing this module, students will be able to:

- Configure Transparent Caching
- Restore deleted network files

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Module 13: Identify and Resolve Microsoft Edge Security Issues

This module explains how to configure the security features in Microsoft Edge to protect user information and privacy.

Lessons
<ul style="list-style-type: none">• Overview• Configure Security Zone• Configure Security Levels• Configure Privacy Settings• Managing Add-ons• Configure Smart Screen Filter• Other Security Issues• Resolve Microsoft Edge Security Issues• Review
Lab 13: Identify and Resolve Microsoft Edge Security Issues
<ul style="list-style-type: none">• Configure Trusted Security Zone• Configure the Security and Privacy Features in Microsoft Edge• Configure Group Policy Settings for Microsoft Edge

After completing this module, students will be able to:

- How to use new security features like Smart Screen Filtering
- Manage Microsoft Edge Add-ons
- Use Microsoft Edge features to warn users about potential security problems
- Understand new features in Microsoft Edge

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Module 14: Identify and Resolve Firewall Issues

This module explains how to configure Windows Firewall to secure network traffic and applications on a computer.

Lessons
<ul style="list-style-type: none">• Overview• Securing Network Applications and Features• Program & Port Exceptions• Configuring Notifications and Logging• Network Security Tools• Resolve Firewall Issues• Review
Lab 14: Identify and Resolve Firewall Issues
<ul style="list-style-type: none">• Configure and Test Firewall Rules for an application• Fix Application Problems Caused by Firewall Rules

After completing this module, students will be able to:

- Block applications from communicating over the network
- Record and setup notifications of unapproved network communication
- Fix problems caused by improper configuration of Windows Firewall

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Module 15: Identify and Resolve Issues Due To Malicious Software

This module explains how to restore a computer system after an attack by viruses or other malicious software.

Lessons
<ul style="list-style-type: none">• Overview• Proactive Malware Protection• Protecting Microsoft Edge• Windows and Anti-Virus Updates• Recovering From Malware Infection• Resolve Issues Due to Malicious Software• Review
Lab 15: Identify and Resolve Issues Due To Malicious Software
<ul style="list-style-type: none">• Use the Action Center to manage UAC settings• Use System File Checker• Use the Malicious Software Removal Tool

After completing this module, students will be able to:

- Identify problems caused by viruses and other malware.
- How to protect Microsoft Edge and E-mail applications from malware attack
- How to prevent data loss and fix a computer after a malware attack

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Module 16: Identify and Resolve Encryption Issues

This module explains how to fix problems caused by using encryption on a Windows computer.

Lessons
<ul style="list-style-type: none">• Overview• Configuring a Recovery Agent• Using EFS• Using BitLocker• Encryption Tools• Resolve Encryption Issues• Review
Lab 16: Identify and Resolve Encryption Issues
<ul style="list-style-type: none">• Encrypt Files using EFS• Configure EFS Sharing• Configure a Recovery Agent

After completing this module, students will be able to:

- Recover from lost encryption keys
- How to encrypt individual files using EFS
- Use BitLocker to protect laptops and insecure computers

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Module 17: Identify and Resolve Software Update Issues

This module explains how to enable and use the software update features available on Windows clients.

Lessons
<ul style="list-style-type: none">• Overview• Types of Windows Updates• Using Windows Update• Using Microsoft Update• Resolve Software Update Issues• Review
Lab 17: Identify and Resolve Software Update Issues
<ul style="list-style-type: none">• Configure Windows Updates using desktop settings• Configure Windows Updates using Group Policy settings

After completing this module, students will be able to:

- Configure client computers to get updates from the local network instead of the Internet
- Understand the different options available when updating the operating system
- Understand how to configure automatic updates for Microsoft applications