About This Course

This section provides a brief description of your course, including audience, suggested prerequisites, and course objectives.

Course description

This course is designed to provide students with the knowledge and skills to support and troubleshoot Windows 10 PCs and devices in a Windows Server domain environment. Students will get a deeper understanding of Windows 10 features, including how they can use them in an Active Directory environment, and how to troubleshoot issues that might occur.

Audience

The primary audience for this course is the Enterprise Desktop Support Technician (EDST), who provides Tier 2 support to users running Windows 10 personal computers (PCs) and devices in medium-to-large enterprise organizations, within a Windows domain environment. EDSTs focus on a broad range of technical issues for Windows operating systems, devices, cloud services, applications, networking, and hardware support.

The key responsibilities of EDSTs include resolving technical issues pertaining to Windows 10 installation and migration, activation, performance, profiles, and settings. Other key responsibilities include device synchronization; local and remote network access; access to applications, data, and printers; authentication, endpoint security and policy; and recovery of operating system and data.

Student prerequisites

Before attending this course, students must have:

- A basic understanding of networking fundamentals, including Transmission Control Protocol /Internet Protocol (TCP/IP), User Datagram Protocol (UDP), and Domain Name System (DNS).
- An understanding of basic Active Directory Domain Services (AD DS) principles.
- An understanding of the Public Key Infrastructure (PKI) components.
- An understanding of Windows Server 2012 or Windows Server 2016 fundamentals.
- Knowledge of Windows client essentials, for example, experience with Windows 10, or knowledge from the courses 20697-1 and 20697-2.

Course objectives

After completing this course, students will be able to:

- Describe the processes for planning and using a Windows 10 troubleshooting methodology.
- Troubleshoot startup issues and operating system services on a Windows 10 device.

- Resolve issues that pertain to hardware devices and device drivers.
- Troubleshoot Windows 10 devices remotely.
- Troubleshoot issues that pertain to network connectivity.
- Troubleshoot client-configuration failures and issues with application of Group Policy Objects.
- Troubleshoot issues related to user settings.
- Troubleshoot remote-connectivity issues.
- Resolve issues that pertain to accessing resources from devices that are domain-joined.
- Resolve issues that pertain to accessing resources from devices that are not domain-joined.
- Troubleshoot issues that pertain to application installation and operation.
- Maintain a device that is running Windows 10.
- Recover a device that is running Windows 10.

Course outline

The course outline is as follows:

- Module 1: “Implementing a Troubleshooting Methodology” introduces the new Windows 10 operating system features and devices, and describes the process of developing and applying a Windows 10 troubleshooting methodology.
- Module 2: “Troubleshooting Startup Issues” describes how to identify and troubleshoot startup issues that affect, and problematic services that run on, a Windows 10 operating system. It also describes how to use the Windows 10 advanced troubleshooting tools, collectively known as the Windows Recovery Environment (Windows RE).
- Module 3: “Troubleshooting Hardware and Device Drivers” describes how to resolve issues that pertain to hardware devices and device drivers.
- Module 4: “Troubleshooting Remote Computers” explores how to connect to, and manage, remote computers, including how to troubleshoot Windows 10 PCs remotely.
- Module 5: “Resolving Issues with Network Connectivity” describes how to troubleshoot issues that pertain to network connectivity.
- Module 6: “Troubleshooting Group Policy” provides an overview of the Group Policy application and describes how to resolve issues in GPO applications of client configurations.
- Module 7: “Troubleshooting User Settings” examines issues that can occur when users sign in, and how to troubleshoot issues that pertain to user settings.

- Module 8: “Troubleshooting Remote Connectivity” describes how to troubleshoot remote connectivity issues when users are utilizing a virtual private network (VPN) or DirectAccess.
- Module 9: “Troubleshooting Resource Access within a Domain” discusses how to resolve resource-access issues with computers that are domain members, and how to troubleshoot file-permission issues, encrypting file system (EFS) issues, and printer-access issues.
- Module 10: “Troubleshooting Resource Access for Clients That Are Not Domain Members” explains how to resolve issues that pertain to accessing resources from computers that are not domain-joined.
- Module 11: “Troubleshooting Applications” explains how to troubleshoot application installation-issues and problems in desktop and Windows Store apps. This module also describes how to resolve issues with Internet Explorer and Microsoft Edge browsers.
- Module 12: “Maintaining Windows 10” describes how to troubleshoot activation and performance issues in Windows 10. It also explains how to apply and troubleshoot Windows updates.
- Module 13: “Recovering Data and Operating Systems” explains how to use file recovery and troubleshoot deleted files. It also details how to recover a Windows 10 computer.

Course Materials

The following materials are included with your kit:

- ***Course Handbook:*** a succinct classroom learning guide that provides the critical technical information in a crisp, tightly-focused format, which is essential for an effective in-class learning experience.
  - **Lessons**: guide you through the learning objectives and provide the key points that are critical to the success of the in-class learning experience.
  - **Labs**: provide a real-world, hands-on platform for you to apply the knowledge and skills learned in the module.
  - **Module Reviews and Takeaways**: provide on-the-job reference material to boost knowledge and skills retention.
  - **Lab Answer Keys**: provide step-by-step lab solution guidance.

Course Companion Content on the
http://www.microsoft.com/learning/en/us/companion-moc.aspx Site *:* searchable, easy-to-browse digital content with integrated premium online resources that supplement the Course Handbook.

- **Modules**: include companion content, such as questions and answers, detailed demo steps and additional reading links, for each lesson. Additionally, they include Lab Review questions and answers and Module Reviews and Takeaways sections, which contain the review questions and answers, best practices, common issues and troubleshooting tips with answers, and real-world issues and scenarios with answers.
- **Resources**: include well-categorized additional resources that give you immediate access to the most current premium content on TechNet, MSDN, or Microsoft Press.

> **Additional Reading: Course Companion Content *:*** searchable, easy-to-browse digital content with integrated premium online resources that supplement the Course Handbook.

- ***Course evaluation:*** at the end of the course, you will have the opportunity to complete an online evaluation to provide feedback on the course, training facility, and instructor.
  - To provide additional comments or feedback on the course, send an email to mcspprt@microsoft.com. To inquire about the Microsoft Certification Program, send an email to mcphelp@microsoft.com.

Virtual machine environment

This section provides the information for setting up the classroom environment to support the business scenario of the course.

Virtual machine configuration

In this course, you will use Microsoft Hyper-V to perform the labs.

> **Note:** At the end of each lab, you must revert the virtual machines to a snapshot. You can find the instructions for this procedure at the end of each lab.

The following table shows the role of each virtual machine that is used in this course:

Virtual machine	Role
10982C-LON-DC1	Windows Server 2016 domain controller in the Adatum.com domain
10982C-LON-CL1	Windows 10 Enterprise computer, member of Adatum.com domain, .NET Framework 3.5 installed
10982C-LON-CL2	Windows 10 Enterprise computer, member of Adatum.com domain
10982C-LON-CL3	Windows 8.1 computer, member of Adatum.com domain
10982C-LON-CL4	Windows 10 Enterprise computer, not domain-joined
10982C-LON-RTR	Member server that is running Windows Server 2016, configured as a router

Virtual machine	Role
10982C-LON-INET	Standalone server that is running Windows Server 2016

Software configuration

The following software is installed on each VM:

- Windows Server 2016
- Windows 10 Enterprise with Fall Creators Update
- Microsoft Office 2016
- Windows Assessment and Deployment Kit

Classroom setup

Each classroom computer will have the same virtual machine configured in the same way.

Course hardware level

To ensure a satisfactory student experience, Microsoft Learning requires a minimum equipment configuration for trainer and student computers in all Microsoft Certified Partner for Learning Solutions (CPLS) classrooms in which Official Microsoft Learning Product courseware is taught.

Hardware Level 8

- Processor*: 2.8 GHz 64-bit processor (multi-core) or better
  - **AMD:
    - AMD Virtualization (AMD-V)
    - Second Level Address Translation (SLAT) - nested page tables (NPT)
    - Hardware-enforced Data Execution Prevention (DEP) must be available and enabled (NX Bit)
    - Supports TPM 2.0 or greater
  - **Intel:
    - Intel Virtualization Technology (Intel VT)
    - Supports Second Level Address Translation (SLAT) – Extended Page Table (EPT)
    - Hardware-enforced Data Execution Prevention (DEP) must be available and enabled (XD bit)
    - Supports TPM 2.0 or greater

- Hard Disk: 500GB SSD System Drive (2 logical drives labelled C drive and D Drive)
- RAM: 16 GB minimum
- Network adapter
- Monitor: Dual monitors supporting 1440X900 minimum resolution
- Mouse or compatible pointing device

Additionally, the instructor’s computer must be connected to a projection display device that supports SVGA 1024×768 pixels and 16-bit colors.