

REVIEW LESSON

MTA Course: 10753 Windows Operating System Fundamentals

Lesson name: Windows Operating System Fundamentals 3.5

Topic: Understand application virtualization (One 50-minute class period)

File name: 10753_WindowsOS_RL_3.5

Lesson Objective

3.5: Understand application virtualization. *This objective may include but is not limited to:* understanding Med-V and VDI.

Preparation Details

Prerequisite student experiences and knowledge:

This MTA Certification Exam Review lesson is written for students who have learned about Microsoft® Windows® fundamentals. Students who do not have the prerequisite knowledge and experiences cited in the objective will find additional learning opportunities using resources such as those listed in the “Resources” section at the end of this review lesson.

Instructor preparation activities:

- Make copies available of Student Activity document 10753_WindowsOS_SA_3.5.
- The instructor should have access to an existing system running Microsoft Windows 7 Professional or a virtual machine with Windows 7 Professional installed for the purpose of demonstrating how to explore online resources for virtual applications.
- The instructor should have access to an existing system or virtual machine running Windows Server® 2008 R2 for demonstration purposes and the student activity. Please use the file 10753_WindowsOS_RL_3.5_Server_Configuration to configure the server for this demonstration and activity.

Resources, software, and additional files needed for this lesson:

- 10753_WindowsOS_RL_3.5_Server_Configuration
- 10753_WindowsOS_SA_3.5
- 10753_WindowsOS_SA_3.5_key
- 10753_WindowsOS_PPT_3.5

Teaching Guide

Essential Vocabulary

Application Virtualization—a Microsoft software technology that allows the user to isolate a specific application from the operating system and other applications, eliminates conflicts between applications, and removes the need to install applications directly on PCs.

Remote Desktop Protocol (RDP)—is a protocol that provides remote display and input capabilities over network connections for Windows-based applications running on a server. RDP is designed to support different types of network topologies and multiple local area network (LAN) protocols.

Remote Desktop Services (RDS)—a server role in Windows Server 2008 R2 that provides technologies that enable users to access Windows-based programs that are installed on a Remote Desktop Session Host (RD Session Host) server, or to access the full Windows desktop. RDS lets you deploy and maintain software efficiently in an enterprise environment.

RemoteApp—is a Remote Desktop Services feature that enables the user to make programs that are accessed remotely through RDS appear as if they are running on the user's local computer.

virtual application—an application that can run in a self-contained, virtual environment. The virtual environment contains the information necessary to run the application on the client without installing the application locally.

Virtual Desktop Infrastructure (VDI)—a centralized desktop delivery solution. The concept of VDI is to store and run desktop workloads, including a Windows client, applications, and data in a server-based virtual machine in a data center; and to allow a user to interact with the desktop presented on a user device via RDP.

Lesson Sequence

Activating prior knowledge/lesson staging (5 minutes):

Direct students to answer each question in their notes.

1. What is application virtualization? (a Microsoft software technology that allows you to isolate a specific application from the operating system and other applications, eliminates conflicts between applications, and removes the need to install applications directly on PCs)
2. What Windows Server role can be used for application virtualization? (RDS)
3. What are the benefits of VDI? (Integrated management, enhanced security and compliance, access to anywhere from connected devices and increased business continuity)

Lesson activity (40 minutes):

1. Teacher instruction (20 minutes; see the “Suggested best practices” section below regarding this presentation)
 - a. Use the included Microsoft PowerPoint® presentation to review application virtualization.
2. Guided practice (20 minutes)
 - a. Direct students to complete the Student Activity document 10753_WindowsOS_SA_3.5.

Assessment/lesson reflection (5 minutes):

1. In the same notes that they created for the “Activating prior knowledge/lesson staging” section at the beginning of the class, direct students to check their initial answers and make any changes if necessary.
2. Instruct students to write and submit any questions they have or any topics about which they would like more assistance.
3. After class, look through the student responses and follow up with any student requiring additional help.

Resources:

- **Microsoft TechNet: Application virtualization overview**
<http://technet.microsoft.com/en-us/library/ee958112.aspx>
- **Microsoft: Microsoft Enterprise: Improving Virtual PC with Med-V**
<http://www.microsoft.com/windows/enterprise/products/mdop/med-v.aspx>
- **Microsoft TechNet: Med-V: High level architecture**
<http://technet.microsoft.com/en-us/library/ff433590.aspx>
- **Microsoft: App-V Enterprise Management with Microsoft Windows Enterprise**
<http://www.microsoft.com/windows/enterprise/products/mdop/app-v.aspx>
- **Microsoft TechNet: Application Virtualization TechCenter**
<http://technet.microsoft.com/en-us/appvirtualization/default.aspx>
- **Microsoft TechNet: Microsoft Virtual Desktop Infrastructure**
<http://technet.microsoft.com/en-us/edge/microsoft-virtual-desktop-infrastructure-vdi-explained.aspx>
- **Microsoft: Desktop Virtualization**
<http://www.microsoft.com/virtualization/en/us/products-desktop.aspx>

- **Microsoft TechNet: Concept of Desktop Virtualization**
<http://blogs.technet.com/b/yungchou/archive/2009/10/14/concept-of-desktop-virtualization.aspx>
- **Microsoft: Remote Desktop Services Community**
<http://www.microsoft.com/windowsserver2008/en/us/rds-vdi.aspx>
- **Microsoft: Remote Desktop Services**
<http://www.microsoft.com/windowsserver2008/en/us/rds-product-home.aspx>
- **Microsoft: Remote Desktop Protocol**
[http://msdn.microsoft.com/en-us/library/aa383015\(VS.85\).aspx](http://msdn.microsoft.com/en-us/library/aa383015(VS.85).aspx)
- **Microsoft TechNet: Remote Desktop Services Overview**
<http://technet.microsoft.com/en-us/library/cc725560.aspx>

Suggested best practices:

- Using the RemoteApp feature within Remote Desktop Services is a good example implementing a virtual application. Starting the application that made available from the server can help demonstrate application virtualization. It is important for the students to understand that the server is handling the overhead created by the application. If available, using a Microsoft Office application would provide a better example; otherwise, using an inherent application such as Wordpad or Notepad is acceptable.