

REVIEW LESSON

MTA Course: 98-366 Networking Fundamentals

Lesson name: Understanding Network Infrastructures 1.3_A

Topic: Understanding wide area networks (WANs)

(Two 50-minute class periods – part A & part B)

File name: NetFund_RL_1.3_A

Lesson Objective

1.3_A: Understand wide area networks (WANs). *This objective may include but is not limited to:* leased lines, dial-up, ISDN, VPN. (In lesson 1.3_B) T1, T3, E1, E3, DSL, and cable and their characteristics (speed, availability).

Preparation Details

Prerequisite student experiences and knowledge

This MTA Certification Exam Review lesson is written for students who have learned about networking 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 Microsoft® resources and Web links at the end of this review lesson.

Instructor preparation activities

- Make copies of Student Activity NetFund_SA_1.3_A

Resources, software, and additional files needed for this lesson

- NetFund_PPT_1.3_A
- NetFund_SA_1.3_A
- NetFund_SA_1.3_A_Key

Teaching Guide

Essential Vocabulary

Dial-up—a connection that uses the public switched telephone network rather than a dedicated circuit or some other type of private network.

ISDN—Integrated Services Digital Network—a high-speed digital communications network evolving from existing telephone services.

Leased lines—a communications channel that permanently connects two or more locations. Leased lines are private or dedicated lines, rather than public ones. Also called *dedicated connection, leased line, private line*.

VPN—Virtual private network. Nodes (each computer device on a network) on a public network such as the Internet that communicate among themselves using encryption technology so that their messages are as safe from being intercepted and understood by unauthorized users as if the nodes were connected by private lines.

WAN—Wide area network. A WAN relies on communications capabilities to link the various network segments as it is generally a geographically widespread network.

Lesson Sequence

Activating prior knowledge/lesson staging (Anticipatory Set: 10 minutes)

Use the prompts on slide 3 in the PowerPoint® presentation. Students should discuss their ideas.

1. What have you learned in the past that will help you to understand WANs?
2. Discuss with your neighbor how you can apply learning from past experience to this new topic of WANs.

Lesson activity (30 minutes)

1. Teacher Instruction
 - Use the PowerPoint slides to review the concepts related to the objective.
 - Distribute the Student Activity. Complete as a partner project. Discuss student answers.

Assessment/lesson reflection (10 minutes)

Instruct students to complete the reflection activity on slide 14.

1. Compare networks and discuss the relationship of a WAN (wide area network) to a LAN (local area network) and a VPN (virtual private network).
2. How do leased lines, dial-up, and ISDN relate to the concept of WANs?
3. Discuss your answers with two other students and refine your thoughts. Share your answers with the class.

Microsoft resources and Web links

- **Diffen: LAN vs WAN**
http://www.diffen.com/difference/LAN_vs_WAN
- **Microsoft.com Support WAN with WINS**
<http://support.microsoft.com/kb/120151>
- **Networking – Wide Area Network (WAN):**
<http://msdn.microsoft.com/en-us/library/ms898995.aspx>
- **Webopedia Wide Area Networks**
http://www.webopedia.com/TERM/W/wide_area_network_WAN.html
- **Wikipedia.org Wide Area Network**
http://en.wikipedia.org/wiki/Wide_Area_Network

Suggested best practices

- Think of examples of situations the students are familiar with and use those to point out differences between the LANs and WANs.