Review Questions

1. A technician from your ISP has arrived to help you troubleshoot a weak WAN connection. To what location do you take them?

    a. IDF
    b. Work area
    c. CEO's office
    d. EF

    Answer: Answers may vary and should list a valid DOCSIS version, such as 2.0, 3.0, 3.1, or 4.0.

    Explanation: The EF (entrance facility) is the location where an incoming network, such as the Internet, connects with the school or corporate network. IDFs (intermediate distribution frames) provide an intermediate connection between the MDF and end-user equipment on each floor and in each building. A work area encompasses workstations, printers, and other networked devices, and all the patch cables, wall jacks, and horizontal cabling necessary to connect these devices to a data room. The CEO's office likely does not contain networking equipment needed to troubleshoot a WAN connection.

    A transceiver was recently damaged by a lightning strike during a storm. How might you decide whether the ISP is responsible for replacing this device, or whether your company must foot the bill?

    a. Look at whether the device is located on the ISP's side of the demarc.
    b. Look at the manufacturer information on the device's label.
    c. Look at purchase records for the device to determine when it was acquired.
    d. Look at what kinds of cables are connected to this device.

    Answer: a. Look at whether the device is located on the ISP's side of the demarc.

    Explanation: The device that marks where a telecommunications service provider's network ends and the organization's network begins is the **demarc (demarcation point)**. Devices on the ISP's side of the demarc are typically the responsibility of the ISP to repair or replace. Manufacturer information, purchase records, and connected cables won't indicate whether the device is the responsibility of the ISP or the customer.

    Which of the following devices are you likely to find in the MDF? Choose all that apply.

    a. Routers
    b. Switches
    c. Network printer
    d. KVM switch

    Answer: a. Routers, b. Switches, and d. KVM switch

    Explanation: An MDF might contain the demarc (or an extension from the demarc, if the demarc itself is located outside the building), a transceiver that converts the incoming signal from the ISP into Ethernet, other connectivity devices (such as **switches** and **routers**), network servers that are accessible by a **KVM switch**, and transmission media. A network

printer should be located in a room where it is easily accessible by network users and not locked away in the MDF.

Which device converts signals from a campus's analog phone equipment into IP data that can travel over the Internet?

    a. Legacy PBX
    b. VoIP phone
    c. Voice gateway
    d. Dedicated telephone switch

Answer: c. Voice gateway

Explanation: A **voice gateway** device converts signals from a campus's analog phone equipment into IP data that can travel over the Internet, or it converts VoIP data from an internal IP network to travel over a phone company's analog telephone lines. A legacy PBX is a dedicated telephone switch that connects and manages calls within a private organization, and it manages call connections that exit the network through a VoIP gateway. A VoIP phone might be a telephone sitting at each user's location or an application hosted on a user's computer or other device.

If you're shopping for a rack switch, what component on the switch tells you it can be mounted to a rack?

    a. AC adapter
    b. Rack ears
    c. Padded feet
    d. Large fans

Answer: b. Rack ears

Explanation: Devices that can be mounted in a rack often come with attached or attachable brackets, called **rack ears**, for securing the device to the posts. If a device has padded feet, it's probably designed for sitting on a desk, table, shelf, or the floor. An AC adapter provides connection to a power source such as a power strip in the rack. Some racks might have rack fans for moving air through the rack to cool devices.

You need to connect a new network printer to a nearby wall jack. What kind of cable should you use?

    a. Fiber-optic cable
    b. Patch cable
    c. Backbone cable
    d. Plenum-rated cable

Answer: b. Patch cable

Explanation: A **patch cable** is a relatively short (usually between 3 and 25 feet) length of cabling that can be used to connect devices such as printers to nearby wall jacks. Especially on large, modern networks, backbones are often composed of fiber-optic cable. Cable running through the plenum above ceiling tile or below subflooring must be plenum-rated,

which is coated with a flame-resistant jacket that produces less smoke than PVC (polyvinyl chloride) cable.

You've decided to run an Nmap scan on your network. Which apps could you open to perform this task? Choose all that apply.

    a. Zenmap
    b. Microsoft Edge
    c. Command Prompt
    d. PowerShell

Answer: a. Zenmap, c. Command Prompt, and d. PowerShell

Explanation: Nmap was originally designed as a command-line utility, which can be run in **Command Prompt** or **PowerShell**. It's also available in a GUI form called **Zenmap**. Nmap does not run in browsers such as Microsoft Edge.

What type of diagram shows a graphical representation of a network's wired infrastructure?

    a. Rack diagram
    b. Wiring diagram
    c. Network map
    d. Network topology

Answer: b. Wiring diagram

Explanation: A **wiring diagram** is a graphical representation of a network's wired infrastructure. In its most detailed form, it shows every wire necessary to interconnect network devices and the locations of those wires. A rack diagram shows the devices stacked in a rack system. A network map shows logical connections and addressing information. A network topology refers to the way a networks physical or logical resources work together.

Which of these is considered a secure place to store a list of documented network passwords?

    a. The CEO's smartphone
    b. A sticky note under the keyboard
    c. A password manager
    d. The MDF

Answer: c. A password manager

Explanation: At least a few trusted people should have access to network passwords. A **password manager** can be invaluable for this purpose. The CEO's smartphone might not be secure and is only accessible by one person. A sticky note under the keyboard is not secure and could be accessed by anyone. The MDF might be secure from most users but might also be accessible by technicians who should not have access to network passwords, and the MDF is not designed for securely storing and organizing passwords.

What is the first step of inventory management?

    a. Interview users.
    b. Identify network requirements.

    c. List an administrative account's username and password for each device on a network.

    d. List all components on the network.

Answer: d. List all components on the network.

Explanation: The first step in inventory management is to **list all components on the network**. A later step would include listing usernames and passwords. Identifying network requirements is the initial phase of the system life cycle. Interviewing users is the first step in the troubleshooting process.

Give three examples of *networked* devices that are not computers.

Answer: Answers may vary and might include security cameras, SCADA sensors that might be monitoring environmental controls (such as HVAC), electric utilities, water and sewage, traffic signals, mass transit, manufacturing equipment, refrigeration units, or lighting and entry systems. Answers should not include *networking* devices such as routers, switches, and access points, or *networked* devices that run on computers, such as servers.

Why is it important to use a structured cabling standard when installing and managing cabling systems?

Answer: Structured cabling standards describe the best ways to install various types of networking media to maximize performance and minimize upkeep.

Why is it important to use plenum-rated cabling in the area above the ceiling tile?

Answer: Plenum-rated cabling is safer than regularly coated PVC cabling. It produces less smoke when burned, and the smoke is less toxic.

What is the unit of measurement that defines the space available in a rack? How tall are standard racks?

Answer: Rack height is measured in rack units (RU or U) with the industry standard being 42U tall—about 6 feet.

Why is it important to minimize cable clutter in a rack?

Answer: Minimizing cable clutter can help prevent airflow blockages and heat buildup.

What are some elements that are typically included in network diagrams?

Answer: Answers may vary and might include physical layout, logical topology, IP address reserves, names of major network devices, and types of transmission media.

How can you go about gathering the information needed to assemble a thorough operations manual?

Answer: Answers may vary and might include visits to data rooms, an examination of servers and desktops, a review of receipts for software and hardware purchases, and the use of a protocol analyzer or network management software package.

What command invokes Nmap at a command line?

Answer: nmap, as shown in Figure 2-23

For what time period should you schedule a network change?

Answer: If possible, schedule the change for completion during off-hours. Many organizations maintain a regularly scheduled maintenance window during which changes can be made.

In a large organization, how do you typically request permission to perform a network 20. change?

Answer: Submit a change request document.