STUDENT ACTIVITY 3.3_B_KEY: NETWORKING FUNDAMENTALS

MTA Course: 98-366 Networking Fundamentals
Topic: Understand IPv6. IPconfig, local loopback IP, ports, packets, subnetting, subnetmask, why use IPv6, reserved address ranges for local use
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Lesson Objective

3.3: Understand IPv6. *This objective may include but is not limited to:* subnetting; Ipconfig; why use IPv6; addressing; ipv4toipv6 tunneling protocols to ensure backwards compatibility; dual IP stack; subnetmask; gateway; ports; packets; reserved address ranges for local use (including local loopback IP).

Directions to the student

Research the following topics and select the best answer for each question.

Content

1. What is a tunnel?

   a. A passageway around an electronic obstruction that allows data to move

   b. An underground cable passage or system of passages

   c. A logical structure that encapsulates the data of one protocol inside the Payload or Data field of another protocol

   d. Part of an application used for hiding data in route to a server

   Answer: C, A logical structure that encapsulates the data of one protocol inside the Payload or Data field of another protocol

2. IPv4 uses a 32-bit addressing scheme. What does IPv6 use?

   a. 16-bit

   b. 56-bit

   c. 64-bit

   d. 128-bit

   Answer: D, 128-bit

3. As a security practitioner, which autoconfiguration technique should you be most concerned about?

   a. Stateful configuration

   b. Stateless configuration

   c. Unstated configuration

   Answer: B, Stateless configuration

4. IPv6 describes rules for the following types of addressing. Which is the communication between a single sender and the nearest of several receivers in a group?

   a. Anycast

   b. Unicast

   c. Multicast

   d. Singlecast

   Answer: A, Anycast

Match the following:

a. Anti-replay protocol

b. Session initiation protocol

c. Internet message access protocol

d. Exterior gateway protocol

e. Internet open trading protocol

f. Layer two tunneling protocol

g. Next hop resolution protocol

h. Dynamic host configuration protocol

i. Transmission control protocol

j. Common management information protocol

5. **h** Communications protocol that lets network administrators centrally manage and automate the assignment of Internet protocol (IP) addresses in an organization's network

6. **b** An Internet Engineering Task Force (IETF) standard protocol for initiating an interactive user session that involves multimedia elements such as video, voice, chat, gaming, and virtual reality

7. **f** Extension of the point-to-point tunneling protocol is used by an Internet service provider to enable the operation of a virtual private network over the Internet

8. **d** Protocol used to exchange routing information between two gateway hosts (each with its own router) in a network of autonomous systems

9. **g** Protocol that allows a computer sending data to another computer to learn the most direct route to the receiving computer

10. **e** Protocol is one of several standards proposed to ensure that manufacturers, distributors, retailers, and shoppers all use a common method of exchanging data when doing business online

11. **c** Protocol for accessing e-mail from your local server

12. **j** Protocol is used to keep track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.

13. **a** Protocol ensures IP packet-level security by making it impossible for a hacker to intercept message packets and insert changed packets into the data stream between a source computer and a destination computer