

STUDENT ACTIVITY 3.3_B: 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_B: 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
2. IPv4 uses a 32-bit addressing scheme. What does IPv6 use?
 - a. 16-bit
 - b. 56-bit
 - c. 64-bit
 - 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
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

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. _____ Communications protocol that lets network administrators centrally manage and automate the assignment of Internet protocol (IP) addresses in an organization's network
 6. _____ 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. _____ 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. _____ Protocol used to exchange routing information between two gateway hosts (each with its own router) in a network of autonomous systems
9. _____ Protocol that allows a computer sending data to another computer to learn the most direct route to the receiving computer
10. _____ 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. _____ Protocol for accessing e-mail from your local server
12. _____ 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. _____ 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