SOHO Networks

\_Beginner:\_

1. What is a SOHO network?

A Small Office/Home Office (SOHO) network is a small-scale network used in small business environments or homes, typically consisting of a few computers, printers, and other devices connected for sharing resources and internet access.

2. What does SOHO mean in networking?

In networking, SOHO refers to the networking technology and methods used in small offices or home offices to enable network communication, resource sharing, and internet connectivity among a limited number of devices.

\_Intermediate:\_

1. How does a SOHO network work?

A SOHO network works by connecting devices such as computers, printers, and storage devices through a central networking device, usually a router. This router enables these devices to communicate with each other and share an internet connection.

2. Issues with SOHO Networking?

Common issues include limited scalability, security vulnerabilities, potential for network congestion, and less robust hardware compared to enterprise-level networks.

\_Advanced:\_

1. How Small is the “S” in SOHO?

The "S" in SOHO typically refers to networks with fewer than ten devices and is designed for small office environments or individual home offices.

2. SOHO Routers vs. Home Routers?

SOHO routers often have more advanced features than standard home routers, such as VPN support, better security options, and sometimes greater data handling capabilities, catering to small business needs.

NAT & PAT

\_Beginner:\_

1. What is NAT?

Network Address Translation (NAT) is a method used in networking to modify network address information in IP packet headers while in transit across a traffic routing device, typically for the purpose of remapping one IP address space into another.

2. What is PAT?

Port Address Translation (PAT) is a type of NAT where multiple devices on a local network are mapped to a single public IP address but with a different port number for each session.

3. Difference between NAT & PAT?

NAT generally refers to translating one IP address to another, while PAT specifically refers to the use of different port numbers to distinguish multiple connections using a single IP address.

\_Intermediate:\_

1. How Will NAT work?

NAT works by modifying the IP address information in packet headers as they pass through a router or firewall, allowing multiple devices on a private network to share a single public IP address.

2. Explain NAT?

NAT involves translating private IP addresses to a public IP address for internet communications, providing an additional layer of security by hiding internal IP addresses and conserving the number of public IP addresses used.

\_Advanced:\_

1. Difference between Static & Dynamic NAT?

Static NAT is a one-to-one mapping between a private and public IP address, consistent and unchanging. Dynamic NAT assigns a public IP from a pool of addresses, changing as different internal devices access external networks.

2. NAT stands for?

Network Address Translation.

3. PAT stands for?

Port Address Translation.

Authentication and Access Control

\_Beginner:\_

1. What is ACL?

An Access Control List (ACL) is a set of rules used to control network traffic and reduce network attacks by allowing or denying specific traffic based on various criteria like IP addresses, protocols, ports, etc.

2. What are different types of ACL?

The two primary types are Standard ACLs, which filter traffic based solely on source IP addresses, and Extended ACLs, which can filter based on source and destination IP addresses, protocols, ports, and other factors.

\_Intermediate:\_

1. Explain Standard Access List?

A Standard Access List filters network traffic based only on the source IP address. It's used to permit or deny traffic from specific IP addresses without considering the destination or the type of traffic.

2. Explain Extended Access List?

An Extended Access List provides more granular control than a Standard ACL. It can filter based on source and destination IP addresses, IP protocols (TCP, UDP, ICMP, etc.), port numbers, and even specific network services.

\_Advanced:\_

1. What is a Wildcard Mask?

A wildcard mask is used in network configurations, particularly with ACLs, to specify which bits of an IP address should be considered when matching addresses. It's essentially the inverse of a subnet mask.

2. In which directions can we apply an Access List?

Access Lists can be applied in two directions on a router interface: inbound (filtering packets entering the interface) and outbound (filtering packets leaving the interface).

WAN Technologies

\_Beginner:\_

1. Fiber-optic communication

Fiber-optic communication involves transmitting information as light pulses along a glass or plastic fiber. It offers high bandwidth and is typically used for long-distance and high-speed data transmission.

2. What is Leased Line?

A leased line is a dedicated telecommunications connection between two or more locations. It provides a continuous, private line and is not shared with other users, offering consistent bandwidth and speed.

3. Explain Circuit Switching

Circuit switching is a method of implementing a telecommunications network in which a dedicated communication path is established between two endpoints for the duration of a communication session.

\_Intermediate:\_

1. Explain Packet Switching

Packet switching is a digital networking communications method that groups transmitted data into suitably sized blocks, called packets, which are transmitted via a network and reassembled at the destination.

2. Difference between leased line and broadband?

A leased line provides a dedicated connection with consistent speed and bandwidth, whereas broadband is a shared service that can have fluctuating speeds and lower reliability.

3. How much is a 100mb Leased Line?

The cost varies based on location, provider, and contract terms, but a 100mb leased line can range from a few hundred to over a thousand dollars per month.

\_Advanced:\_

1. Difference between a POTS line and a leased line?

POTS (Plain Old Telephone Service) is a standard telephone service used for voice communication and limited data transmission, while a leased line is a dedicated, high-speed connection for data and internet access.

2. What is the process of packet switching?

Packet switching involves breaking down data into packets, routing these packets through a network based on the destination address contained within each packet, and reassembling the packets at the destination.

3. Difference between circuit switching and packet switching?

Circuit switching establishes a dedicated path between two points for the duration of the connection, while packet switching sends data in packets over a shared network, without a dedicated path.

4. Practice on printer sharing

Printer sharing involves making a printer accessible to multiple users on a network. This can be configured via the printer's settings or through a network server or computer.

5. Use of IIS [Via "add and remove" feature from control panel. "appwiz.cpl" command]

Internet Information Services (IIS) is a web server software created by Microsoft. To install it, you can use the