

Chapter 13



**ASSIGN
BUSTER**

Who owns the Internet? Individuals, universities, government agencies, and private companies

Who manages the Internet? Several nonprofit organizations and user groups

Who pays for the Internet? The National Science Foundation (NSF) which is a U. S. government funded agency and federal taxes

Optical Carrier (OC) line a high-speed fiber-optic line

T line a communications line that carries digital data over twisted-pair wires

Internet exchange point (IXP) a way of connecting Internet Service Providers (ISPs) that's made up of one or more network switches to which the ISPs connect

Point of presence (POP) a bank of modems, servers, routers, and switches through which Internet users connect to an ISP

Client/server model a model of network communications where a client device uses browsers to request services from networks that make up the Internet

Web servers computers that run specialized operating systems, enabling them to host web pages and other information and to provide requested information to clients

Commerce servers computers that host software that enables users to buy goods and services over the web

-Uses special security protocols to protect sensitive information from being intercepted

File serverscomputers that are deployed to provide remote storage space or to act as storehouses for files that users can download

Computer protocols a set of rules for exchanging electronic information

Open system a system having the characteristic of being public for access by any interested party

Proprietary system a system having the characteristic of being closed to public access

Circuit switching where a dedicated connection is formed between two points and the connection remains active for the duration of the transmission

Packet switching a communications methodology that makes computer communication efficient; data is broken into smaller chunks called packets

Packet (data packet) a small segment of data that's bundled for sending over transmission media. Each packet contains the address of the computer or peripheral device to which it's being sent

What information does a packet contain? 1. An address to which the packet is being sent

2. The address from where the packets originates

3. Reassembly instructions

4. Data that's being transmitted

Why do packets take different routes and how do they decide which route to use? The routers that connect ISPs with each other monitor traffic and decide the most efficient route

TCP/IP the main suite of protocols used for transmitting data over the Internet

The original two protocols that were developed for the Internet are Transmission Control Protocol (TCP) and Internet Protocol (IP)

The IP is responsible for what? Sending the information from one computer to another

Internet Corporation for Assigned Names and Numbers (ICANN) the organization that registers Internet protocol addresses to ensure they're unique and haven't been assigned to other users

dotted decimal number (decimal quad) an IP address

Octet a reference to each of the four numbers in a dotted decimal number's IP address

Internet Protocol Version 4 (IPv4) the original Internet protocol addressing scheme

Internet cache a section of the hard drive that stores information that may be needed again

Classless interdomain routing (CIDR) an Internet addressing scheme that allows a single IP address to represent several unique IP addresses by adding a network prefix to the last octet

Network prefix represented by a slash and a number to the end of the last octet

Internet Protocol Version 6 (IPv6) an IP addressing scheme developed by the IETF to make IP addresses longer

Hexadecimal digit a digit with 16 possible values: 0-9 and A-F

Static addressing the IP address for a computer never changes and is most likely assigned manually

Dynamic addressing your computer is assigned a temporary address from an available pool of IP addresses

User Datagram Protocol (UDP) an Internet protocol that creates data packets across the Internet

Connection-oriented protocol a protocol for exchanging information that requires 2 computers to exchange control packets before sending packets that contain data

Handshaking the process of exchanging control packets before exchanging data packets

Three-way handshake 1. Your computer establishes a connection to the ISP and announces it has e-mail to send

2. ISP server responds that it's ready to receive the email

3. Your computer then acknowledges the ready state of the server and begins to transmit the e-mail

Connectionless protocol doesn't require any type of connection to be established or maintained between 2 computers exchanging information

Positive acknowledgment (ACK) sends back this when Y receives a data packet that it can read from X

Negative acknowledgment (NAK) if the packets is unreadable Y send this to X

Dynamic Host Configuration Protocol (DHCP) a protocol for assigning dynamic IP addresses

How are domains organized? By levels

Second-level domain domain that's directly below a top-level domain

Who assigns companies or organizations to manage domain name registration? ICANN

Domain name system (DNS) server a server that maintains a database of domain names and converts domain names to IP addresses

root DNS server a DNS server that contains the master listings for an entire top-level domain

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