

# Chapter 6



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True(T/F) The internet is essential because it's flexible, shares resources, allows geographic dispersment of employees, and links businesses with customers and suppliers. Network Neutrality Concept that ISPs must allow computers equal access to content and applications regardless of the source or nature of the content False(T/F) ISPs want net neutrality because it allows them to charge different prices to individuals based on internet usage True(T/F) Computers don't work in isolation, data exchange provides advantages, data exchange can take place over great distances Computer network A system that connects computers and other devices via communications media so that data and information can be transmitted among them False(T/F) Voice and data communications are becoming slower and more expensive Bandwidth Refers to the transmission capacity of a network; it is stated in bits per second Broadband Refers to network transmission capacities ranging from approximately 1 million bits per second to 20 megabits with fiber to home. True(T/F) In a computer network, connected computers: work together, are interdependent, and exchange data with each other PAN LAN MAN WAN The four types of networks from smallest to largest are \_\_\_\_, \_\_\_\_, \_\_\_\_, \_\_\_\_. (Acronyms) Personal area network PAN is the acronym for \_\_\_\_. Local area network LAN is the acronym for \_\_\_\_. Metropolitan area network MAN is the acronym for \_\_\_\_. Wide area network WAN is the acronym for \_\_\_\_. WAN The internet is a \_\_\_\_ network (acronym) Local area network Connects two or more devices in a limited geographical region so that every device on the network can communicate with each other Network interface card Every device on a LAN has one of these which allows that device to physically connect to the LAN's communication medium True(T/F) LANs often have a file server or network

server that contains various software and data for the network  
 WAN Typically contains multiple LANs  
 WAN \_\_\_\_\_ are provided by common carriers like a telephone companies  
 True(T/F) WANs have a large capacity and typically combine multiple channels (fiber-optic, microwave, satellite)  
 True(T/F) The internet is a WAN  
 Routers WANs contain \_\_\_\_\_ which are communication processors that route messages from a LAN to the internet, across several connected LANs, or across a WAN  
 Enterprise network Consists of multiple LANs and WANs that are interconnected  
 Backbone network High-speed central networks to which multiple smaller networks connect  
 MANA large computer network usually spanning a city (acronym)  
 PAN (Personal area network) A very small computer network within 10 meters of a person's space (acronym)  
 Analog signals Continuous waves that transmit information by altering the characteristics of the waves  
 Digital signals Discrete pulses that are either on or off, representing a series of bits (0s and 1s)  
 Modems Convert digital signals to analog signals and analog signals to digital signals  
 Modulation Converting digital signals to analog signals  
 Demodulation Converting analog signals to digital signals  
 Dial-up Must convert digital signals into analog, transmission speeds up to 56kbps i. e. SLOW  
 Cable Provider operates over a coaxial cable, transmission speeds between 1 and 6 mbps for downloads and 128-768 for uploads  
 Downloading Which is faster downloading or uploading  
 DSL (digital subscriber line) Provider operates on the same lines as telephones and dial-up modems, always available internet  
 Cable Uses physical wires or cables to transmit data and information  
 Twisted-pair wiring The prevalent form of communication wiring; strands of copper wiring twisted in pairs  
 Twisted-pair wiring Inexpensive to purchase, widely available and easy to work with are  
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advantages of \_\_\_\_\_. Twisted-pair wiring Slow for transmitting data, subject to interference from other electrical sources, easily tapped by others are disadvantages of \_\_\_\_\_ Coaxial Cable Consists of insulated copper wires Coaxial Cable Much less susceptible to electrical interference, and can carry more data are advantages of \_\_\_\_\_. Coaxial Cable More expensive, more difficult to work with, and somewhat inflexible are disadvantages of \_\_\_\_\_. Fiber-optic cables Consist of thousands of very thin filaments of glass fibers that transmit information via light pulses generated by lasers Fiber-optic cables Typically used as the backbone for a network Fiber-optic cables Significantly smaller and lighter than other mediums, can transmit more data, and provides greater security for data are advantages of \_\_\_\_\_. Digital subscriber line A high-speed digital transmission technology using existing analog telephone lines Asynchronous Transfer mode Data transmission technology that uses packet switching and allows for almost unlimited bandwidth on demand Synchronous Optical Network An interface standard for transporting digital signals over fiber optic lines that allows users to integrate transmissions from multiple vendors T-carrier systems High-powered digital transmission system that defines circuits that operate at different rates, all of which are multiples of the basic 64 kbps user to transport a single voice call Protocol The set of rules or procedures governing transmission across a network Ethernet A common LAN protocol Transmission control protocol/Internet protocol (TCP/IP) is a file transfer protocol that can send large files across sometimes unreliable networks (Internet) with assurance that the data will arrive uncorrupted; 3 basic functions Packets One of the TCP/IP functions; managing the movement of \_\_\_\_\_ between computers by establishing a connection between the

computersSequencesOne of the TCP/IP functions; \_\_\_\_ the transfer of packetsAcknowledgesOne of the TCP/IP functions; \_\_\_\_ the packets that have been transferredInternet protocolResponsible for disassembling, delivering, and reassembling the data during transmissionApplication Transport Internet Network interfaceThe four layers of TCP/IP are 1.)\_\_\_\_\_, 2.)\_\_\_\_\_ => provides communication ability, 3.)\_\_\_\_\_ => addressing and routing, 4.)\_\_\_\_\_ => sends to/from the networkHypertext transfer protocol (HTTP)Defines how messages are formulated and how they are interpreted by the receiverPacket switchingTransmission technology that breaks-up blocks of data into packetsClient/server computingLinks 2 or more computers in an arrangement in which some machines (servers) provide computing services for user PC's (clients)Peer-to-peer processingA type of Client/server distributed processing where each computer acts as both a client and a server ex: Napster There are 3 typesFirst type\_\_\_\_\_ Peer-to-peer processing accesses unused CPU power among networked computersSecond type\_\_\_\_\_ Peer-to-peer processing is real time person to person collaborationThird type\_\_\_\_\_ Peer-to-peer processing is open source free peer to peer file-sharingNetwork TopologyRefers to the geometric arrangement of the actual physical organization of the computers and other network devices in a networkBusAll devices are connected to a central cable called a \_\_\_\_; \_\_\_\_ networks are relatively inexpensive and easy to install for small networks (SAME word for both blanks)StarAll devices are connected to a central device called a hub. \_\_\_\_\_ networks are relatively easy to install and manage but bottlenecks can occur because all the data must pass through the hubRingAll devices are connected to one another in the shape of a closed loop, so that each device is connected directly to two other devices. \_\_\_\_\_

topologies are relatively expensive, difficult to install, but they offer high bandwidth and can span large distances

**Hybrids** Groups of star-configured workstations are connected to a linear bus backbone cable, combining the characteristics of the bus and star topologies

**Wireless** Devices are connected by a receiver/transmitter to a special network interface card that transmits signals between a computer and server, all within an acceptable transmission range

**Internet** A global WAN that connects approximately 1 million organizational computer networks in more than 200 countries on all continents and plays a role in the daily routine of almost 2 billion people

**Intranet** A restricted network that relies on Internet technologies to provide an Internet-like environment within the company for information sharing, communications, collaboration, web-publishing, and the support of the business process

**Extranet** An extension of an intranet that is only available to authorized outsiders such as customers, partners, and suppliers; kind of public/private

**Virtual Private Network (VPN)** Companies can establish direct private network links among themselves or create private, secure Internet access, in effect a "private tunnel" within the Internet

**VPN** \_\_\_ are important because with security on the rise, keeping electronic records safe is an area of concern for many businesses

**Internet service provider (ISP)** A company that offers internet connection for a fee

**Network Access points (NAPs)** Exchange points for Internet traffic; Determine how traffic is routed, internet backbone

**Network Access points (NAPs)** Internet Kiosks, Dial-up, DSL, Cable Modem, Satellite, Wireless, Fiber to the home; are all examples of \_\_\_

**Internet Protocol (IP) address** Assigned address assigned to every computer that distinguishes it from all other computers; IPv4 = 4 part 32 bits, IPv6 = 128 bits used due to increasing # of devices

**Domain**

Name Consists of multiple parts separated by dots which are read from right to left  
Top-level domain The right most part of an Internet name; ex: . com, . gov, . edu  
Name of the Company The main portion/ middle of the Internet name  
World wide web A system of universally accepted standards for storing, retrieving, formatting, and displaying information via a client/server architecture; not the same thing as the internet  
Home page A text and graphical screen display that usually welcomes the user and explains the organization that has established the page  
Uniform resource locator The set of letters that represent a resource on the web that points to the address of a specific resource on the web  
Discovery Allows users to browse and search data sources in all topic areas on the Web. Search engines Are computer programs that are used to search for specific information by keywords and then report the results; The largest are Google, Yahoo, Bing, Baidu  
Metasearch engines These search several search engines at once and integrate the findings of the various search engines to answer queries posted by the user  
Portal A web-based personalized gateway to information and knowledge that provides relevant information from different IT systems and the Internet using advanced search and indexing techniques  
Commercial (public) portals Offer content for diverse communities and are most popular portals on the Internet  
Affinity portals Support communities such as a hobby group or political party  
Mobile portals Are portals accessible from mobile devices  
Corporate portals Portals that offer a personalized single point of access through a web browser  
Industrywide portals Portals that support entire industries

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