

Tia 13



Internet Backbone Collection of large national and international networks, most of which are owned by commercial, educational, or government organizations.

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

T Line Carry 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 ISP's connect (switches are devices that send data on a specific route through a network)

Point of Presence (POP) How individual Internet users enter an ISP. Uses a bank of modems, servers, routers, and switches.

What type of network model does the Internet use? Client/Server model.

Clients are devices like computers, tablets, smartphones that use browsers to request services such as web pages.

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. Protects sensitive information

File Servers Computers that are deployed to provide remote storage space or to act as storehouses for files that users can download. Cloud services.

Computer Protocol Set of rules for exchanging electronic information.

Communicating, collaborating, creating content in the same fashion

Open System Protocol with design made public for access by any interested party

Proprietary System Private system opposite of open system

Circuit switching A dedicated connection is formed between two points (such as two people on phones), and the connection remains active for the duration of the transmission. Ineffective for computers because either the circuit would have to remain open and unavailable to any other system, or it would have to be reestablished for each burst of information sent

Packet Switching Communications method for computers. Data is broken into smaller chunks called PACKETS and are sent over various routes at the same time.

Packets Contain: 1. An address to which the packet is being sent

2. The address from where the packet originates

3. Reassembly instructions, if the original data is split between packets

4. The data that's being transmitted

Transmission Control Protocol/Internet Protocol (TCP/IP) The main suite of protocols used for transmitting data over the Internet

IP Address A unique identification number that defines each computer, service, or other device connected to the internet (like street addresses).

Internet Corporation for Assigned Names and Numbers (ICANN) IP addresses must be registered here to ensure they're unique

Dotted Decimal Number IP address form where the numbers are separated by decimals

Octet Each of the 4 numbers in a dotted decimal number is referred to as...

Connection-Oriented Protocol Requires two computers to exchange control packets, thereby setting up parameters of the data-exchange (handshaking).

Connectionless Protocol Doesn't require any type of connection to be established or maintained between two computers exchanging information

Positive Acknowledgement (ACK) When Y receives a data packet that it can read from X, it sends back...

Negative Acknowledgement (NAK) If packet is unreadable (damaged in transit), Y sends a NAK to X

Internet Cache Section of your harddrive that stores information that you may need again, such as IP addresses and frequently accessed web pages.

Internet Protocol version 4 The original protocol addressing scheme. Did not predict the explosive growth of the Internet

Internet of Things A term for the explosive growth of Internet-enabled devices. Appliances, light bulbs, smoke detectors all now send messages over the internet!!

Internet Protocol version 6an IP addressing scheme developed to make IP addresses longer, providing more available (128 bit instead of 32 bit)

Hexadecimal DigitA base 16 number system, each hexadecimal digit is one of 16 possible values 0-9 or A-F

Static AddressingThe IP address for a computer never changes and is most likely assigned manually by a network administrator or an ISP

Dynamic AddressingYour computer is assigned a temporary address from an available pool of IP addresses (more common)

Dynamic Host Configuration Protocol (DHCP)Dynamic addressing is normally handled by the DHCP, which belongs to the TCP/IP protocol suite. It takes a pool of IP addresses and shares them with hosts on the network on an as-needed bases. (as-needed because not everyone is logged on to the internet at one time).

Top-level vs Second-level Domain namesTop level is what comes after the dot and second level comes before the dot

Domain Name System (DNS) serverLike a phone book for the internet. When you enter a URL in your browser, your computer converts the URL to an IP address using this.

Root DNS serverContains the master listings for an entire top-level domain. When your own default DNS server doesn't know the address, it has to consult this to find out.

HTML Not a programming language; is a set of rules for marking up blocks of text so that a browser knows how to display them.

HTML Tags Surround and define HTML content (such as `` indicate bolding)

Element Each pair of tags and text in between them are collectively referred to as an element

HTML5 Current version of the HTML standard

Cascading Style Sheet List of rules that defines in one single location how to display HTML elements. Style rules enable web developers to define a kind of formatting for each HTML element and apply it to all those elements on a set of web pages (essentially, a template).

Where does the "cascading" come in? In web documents, there are

1. External (stored in separate file)
2. Embedded (stored inside the current HTML document)
3. Inline (stored within a single line inside the HTML document).

Each style has a different weight that can override the rule/style with a lower weight

Extensible Markup Language (XML) Describes the content in terms of what data is being described rather than how it's to be displayed. Users can build their own markup languages to accommodate particular formats and needs

XML Examples Data validation: If we needed a tag for an age field, we know a person's age can only be between 0 and 120 but any data may be inserted between

tags. XML allows this

JSONJavaScript Object Notation: data interchange standard that is easy for humans to read and write.

Hypertext Transfer Protocol (HTTP)Browsers use this Internet protocol to send requests. Created especially for the transfer of hypertext documents across the Internet (recall that hypertext documents are documents in which text is linked to other documents or media)

Hypertext Transfer Protocol Secure (HTTPS)Ensures that data is sent securely over the web. Combination of Secure Sockets Layer (SSL) and Transport Layer Security (TLS). These provide data integrity and security for transmissions over the Internet

Server-Side programA type of program that runs on a web server rather than on your computer

Common Gateway Interface (CGI)Provides a method by which your browsers can request that a program file be executed instead of just being delivered to the browser. Enables the website to be interactive.

Client-Side programProgram that runs on the client computer and requires no interaction with a web server. Once a web server processes a web page and sends the page to the client computer, the receiving computer can't get new data unless a new request is made. More efficient to run programs on your computer

HTML Embedded Scripting Language Part of client-side programming. Tucks programming code directly within the HTML of a web page.

Applet Part of client-side programming. A small application actually located on the server is downloaded to the client. It's there ready to run when needed without addition data transfers between client and server.

Dynamic HTML Combination of technologies: HTML, cascading style sheets, JavaScript that's used to create lively and interactive websites.

JavaScript Commonly used scripting language for creating DHTML effects. With JavaScript, HTML documents can be made responsive to mouse clicks and typing.

Document Object Model (DOM) Just as cascading style sheets organize and combine the attributes of objects on a web page, JavaScript uses this to organize objects and page elements. Defines every item on a web page including graphics, tables, headers...

Simple Mail Transfer Protocol (SMTP) Email has its own protocol. SMTP is responsible for sending email along the Internet to its destination.

Email Servers Specialized computers whose sole function is to store, process, and send email

Multipurpose Internet Mail Extensions (MIME) All email client software now uses this protocol to attach files. It handles the encoding and decoding of attachments for its users

EncryptionThe process of coding your email so that only the person with the key to the code can decode and read the message

Private-key EncryptionOnly the two parties involved in sending the message have the code. If someone steals a copy of the code, however, the code is broken.

Public-key EncryptionA type of encryption where two keys, known as a key pair, are created. One key is used for coding and the other is for decoding. The key for coding is distributed as a public key (anyone wishing to send you a message can download your public key), while the private key is retained for decoding (You're the only one who ever possesses the private key so it's highly secure).

Pretty Good Privacy (PGP)Public key packages available for download. Can use free of charge.

How does IM work? The client software running on your device makes a connection with the chat server and provides it with connection information for your device. Chatting takes place directly between the two devices over the Internet.

ONTIA 13 SPECIFICALLY FOR YOUFOR ONLY\$13. 90/PAGEOrder NowTags:

- JavaScript
- Smartphone