Web Design Internet Programming Introduction

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OSI:Open Systems Interconnection TCP/IP

Application

Provides access to the OSI environment for users and also provides distributed information services.

Presentation

Provides independence to the application processes from differences in data representation (syntax).

Session

Provides the control structure for communication between applications; establishes, manages, and terminates connections (sessions) between cooperating applications.

Transport

Provides reliable, transparent transfer of data between end points; provides end-to-end error recovery and flow control.

Network

Provides upper layers with independence from the data transmission and switching technologies used to connect systems; responsible for establishing, maintaining, and terminating connections.

Data Link

Provides for the reliable transfer of information across the physical link; sends blocks (frames) with the necessary synchronization, error control, and flow control.

Physical

Concerned with transmission of unstructured bit stream over physical medium; deals with the mechanical, electrical, functional, and procedural characteristics to access the physical medium. Transport: Port number

(Segment)

TCP, UDP

Network: IP (Packet)

Data Link: MAC (Frame)

TCP: Transmission Control

Protocol

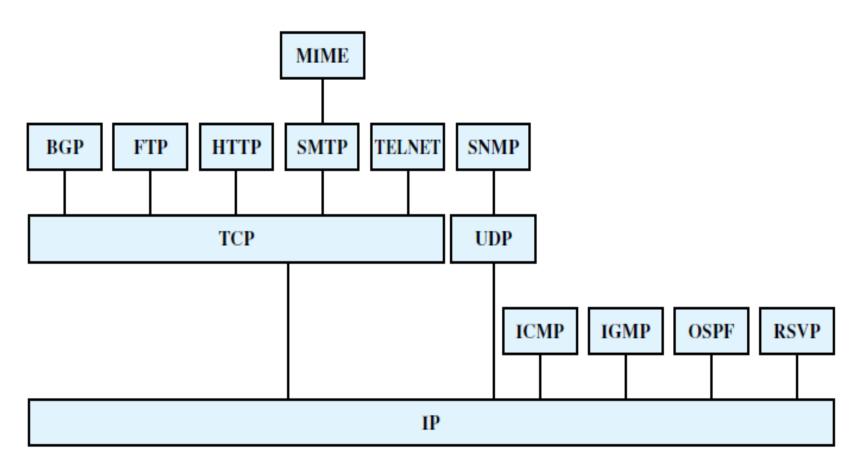
UDP: User Datagram

Protocol

IP: Internet Protocol

MAC: Media Access Control

PDU: Protocol Data Units



BGP = Border Gateway Protocol OSPF = Open Shortest Path First

FTP = File Transfer Protocol RSVP = Resource ReSerVation Protocol

HTTP = Hypertext Transfer Protocol SMTP = Simple Mail Transfer Protocol

ICMP = Internet Control Message Protocol SNMP = Simple Network Management Protocol

IGMP = Internet Group Management Protocol TCP = Transmission Control Protocol

IP = Internet Protocol UDP = User Datagram Protocol

MIME = Multipurpose Internet Mail Extension

- Client Server Architecture
- DNS: Domain Name System
- URL: Uniform Resource Locators
- HTML: Hypertext Markup Language
- HTTP: Request (GET or POST) & Response

Clients and Servers:

- What does your web server do?
- A web server takes a client request and gives something back to the client.
- A web *browser* lets a user request a *resource*. The web *server gets* the request, finds the resource, and returns something to the user. Sometimes that resource is an HTML page. Sometimes it's a picture. Or a sound file. Or even a PDF document.
- When we say "server", we mean either the physical machine (hardware) or the web server application (software).

Clients and Servers:

What does a web client do?

A web client lets the user request something on the server, and shows the user the result of the request.

- When we talk about clients, we usually mean both (or either) the human user and the browser application.
- The browser is the piece of software (like IE or Mozilla) that knows how to communicate with the server. The browser's other big job is interpreting the HTML code and rendering the web page for the user. The client is the browser app doing what the user asked it to do.

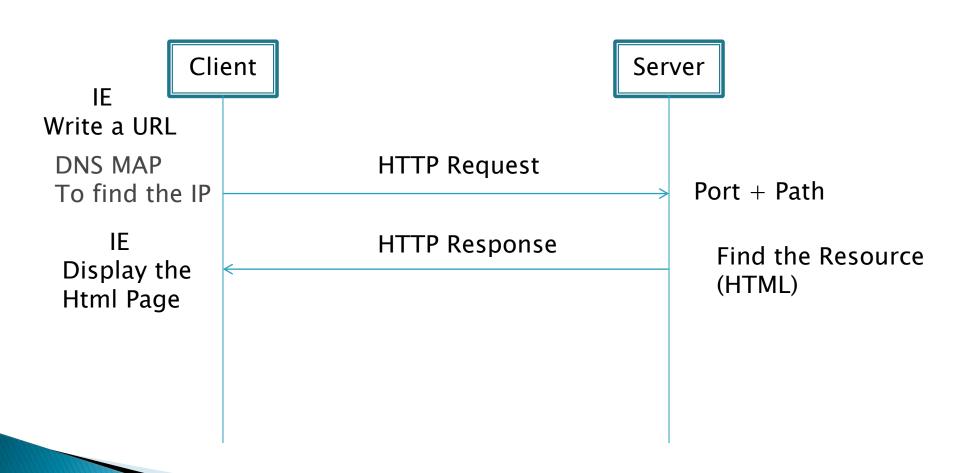
URL

- http://www.basrahuni.com:80/education/computer/lab1.html
- (http://) Protocol: tells the server which communications protocol.
- (www.basrahuni.com) Server: the unique name of the physical server you are looking for. This name is maps to a unique IP address.
- (:80) Port: this part of the URL is optional. A single server supports many ports. A server application is identified by a port.

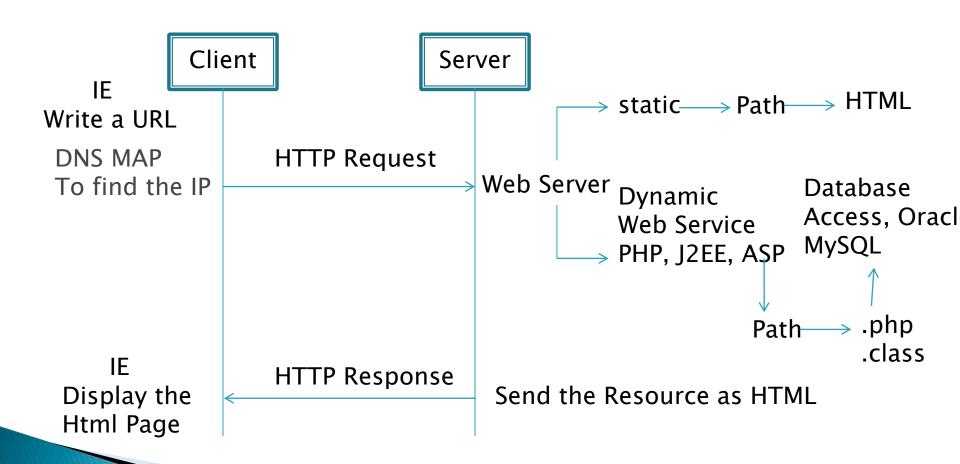
URL

- (education/computer/) Path: the path to the location, on the server, of the resource being requested.
- (lab1.html) Resource: the name of the content being requested. This could be an HTML page, a servlet, an image, PDF, music, video, or anything else the server feels like serving.
- If this optional part of the URL is left out, most web servers will look for index.html by default.

Static & Dynamic web pages



Static & Dynamic web pages



Web Server & Services

- Apache: Web Server
- Apache-Tomcat: Web Server + J2EE
- WAMP Server: Web server + PHP + MySQL
- XAMPP Server: Web server + PHP + MySQL

Internet Terminology

Internet

Browser

ISP

WWW

IP

Modem

Protocol

URL

Search engine

FTP

DNS

HTTP

Download

SMTP

Upload

POP

Email

Scripts

