Web Programming - 3

Installing and Configuring a Web Server

Web Directory Structure
  Server root
  Document root

Basic configuration
  httpd.conf -- Basic operating parameter
  srm.conf   -- Runtime options
  access.conf -- Access control
  mime.types -- File extension and MIME types

Web - A Client Server Application

1 Browser Requests A Document

Web Server

2 Server Sends The Document
   (Connection is broken after that ?)
1 Browser request a program to be executed at the server side
(This request can also have some input for the program)

2 Server Initiates the script (program)

3 Script sends the page to be displayed to the server

4 Server sends the page to the browser

Web Directory Structure

Document Root
All Web documents are placed under this directory

Server Root
Document Tree

Browser request:  http://www.cs.odu.edu/main.html

Unix path:  /usr/local/etc/httpd/htdocs/main.html

( Document directory: /usr/local/etc/httpd/htdocs )

PC path:  C:\Admin\Web\Docs\main.htm

( Document directory:  C:\Admin\Web\Docs )

Document Tree

Virtual document tree:  http://www.cs.odu.edu/tech/docs

MAPS TO

/mnt/cdrom (physical directory)

User-supported directory: URL starting with tilde (~)

http://www.cs.odu.edu/~zubair

Communication Features

Virtual Hosts
Several independent Web sites on the same machine. Reduce cost and simplify administration.

Proxy Services
Accepts browser requests for URLs on distant machines. (to support Web services across firewall and caching)

Non-HTTP Protocols
FTP, Gopher, News, and e-mail

Advanced HTTP Features

Content Negotiations
Language Negotiations
Support for PUT and DELETE Request
Enable HTML editors from a remote location publish Web pages
Keep-Alive Connections
As-Is Documents
Headers not added by the server. Help in creating documents with special behavior.
Meta Information
Intermediate to creating As-Is documents -- add selected fields to the standard HTTP headers
Secure Protocols
SHTTP and SSL support -- Encryption
Scripting

When particular URLs are requested the server executes a program and returns its output to the browser --- dynamic documents.

**Standard CGI-Based Scripts**
- Common Gateway Interface is a protocol for communication between the server and an external program (OS independent)

**OS-Specific Scripting**
- Scripts based on standard CGI protocol are not well optimized for non-Unix system. Alternative interfaces based on the operating system’s more efficient native interprocess communication protocol, such as OLE or AppleScript on Macintoshes

Security Features

- **Access Control Basis**
  - IP address
  - Valid user name and password
- **Access Control Granularity**
  - Directory level
  - File level
  - Sub-document level
- **Document confidentiality/integrity**
  - Document traveling over Internet at risk of being intercepted and altered. Use of encryption protocols such as SSL or SHTTP
- **Restricting Server Environment**
  - Use of chroot for Unix systems

Miscellaneous Features

- **Automatic Directory Listing**
  - Support directory listing with fancy icons -- when the remote user requests a URL that points to a directory
- **Built-In Search Engines**
  - As opposed to CGI based on-line searchable databases
- **Built-In Imagemap handling**
  - As opposed to CGI based imagemap handling