

# SOS in Computer Science and Applications Jiwaji University

Class: PGDCA II semester

Subject: Introduction to Internet  
Technologies (204)

Topic: (i) FTP & its usage  
(ii) client server architecture & its  
characteristics

# FTP & its usages

## FTP & its usages

File Transfer Protocol is a standard network protocol used for the transfer of computer files between a client and a server across a computer network. FTP can be used through a command-line interface such as DOS in Windows and Terminal in Linux & MacOS. If that is not your cup of tea, then you can also use one of many FTP clients available online, some even for free. Some browsers also allow you to download files using the protocol. It is possible to transfer any type of file with FTP, and in some cases, it is even faster than HTTP.

# FTP & its usages

- In order to login into an FTP server, you will need to enter a username and password, as well as the port number (when logging in using command-line interface). The FTP protocol is handled by ports number 20 and 21 by default. There is also a possibility to access FTP servers anonymously, on which we will elaborate in the following paragraphs.

## Anonymous FTP

Most public servers offer you the possibility of login and download files via FTP by connecting anonymously. This does not mean that you are 100% anonymous, but that you use “anonymous” as the username and in most cases, your email address as the password. You do not however need to have an existing account to access the FTP server.

# FTP & its usages

- Browser FTP

Even though we highly recommend the use of an FTP client, sometimes a web browser might suffice. Once directed to a FTP server, you will have to login and you will be able to browse the server and download the files. Please note that using a browser for FTP offers minimal functionality and has a much greater security risk than an FTP client.

- ASCII vs Binary

There are two different forms that file transfers use over FTP: ASCII and binary. ASCII (i.e. American Standard Code for Information Interchange) is a 7-bit character set which contains 128 characters. Any file that is text-based (e.g. HTML, .txt, PostScript files, etc.) is an ASCII file. On the other hand, we have binary files, which have a different structure and require different types of transfer. These include images, applications, algorithmically generated packages such as .zip and much more.

# FTP & its usages

Nowadays, with an enormous variety of FTP clients available, almost any one of them will automatically detect the transfer mode based on the files you have chosen. As a matter of fact, most clients will run in binary by default, using ASCII only when it is required. They do so because both ASCII and binary files can be transferred through the binary method, however if a binary file is transferred through ASCII, it will be corrupted. There is one small exception to the aforementioned rule. CGI scripts must be transferred through ASCII, as otherwise they will simply not work.

# Client server architecture

Client-server architecture is an architecture of a computer network in which many clients (remote processors) request and receive service from a centralized server (host computer). Client computers provide an interface to allow a computer user to request services of the server and to display the results the server returns. Servers wait for requests to arrive from clients and then respond to them. Ideally, a server provides a standardized transparent interface to clients so that clients need not be aware of the specifics of the system (i.e., the hardware and software) that is providing the service. Clients are often situated at workstations or on personal computers, while servers are located elsewhere on the network, usually on more powerful machines.

# Client server architecture

This computing model is especially effective when clients and the server each have distinct tasks that they routinely perform. In hospital data processing, for example, a client computer can be running an application program for entering patient information while the server computer is running another program that manages the database in which the information is permanently stored. Many clients can access the server's information simultaneously, and, at the same time, a client computer can perform other tasks, such as sending e-mail. Because both client and server computers are considered intelligent devices, the client-server model is completely different from the old "mainframe" model, in which a centralized mainframe computer performed all the tasks for its associated "dumb" terminals.

# Characteristics

The client / server refer to a mode of communication between multiple computers on a network that distinguishes one or more clients on the server: each client software can send requests to a server. A server can be specialized in server applications, files, terminals, or e-mail.

## Characteristics of a server

- It is initially passive (or slave, waiting for a query);
- It is listening, ready to respond to requests sent by clients;
- When a request comes, he treats it and sends a response.

## Characteristics of a client

- It is the first active (or master);
- Sends requests to the server;
- It expects and receives responses from the server.

# Three tier architecture

- The terms “three-thirds” and “multi-tier” are wrongly translated from English Three Tier and multi-tier or n-tier. For this reason, it would be preferable to use the translation “three levels” and “multi-level” or a hybrid French-English “three tier” and “multi-tier.
- The client / server architecture has two types of computers on a network: clients and servers, it has two levels and therefore called two-tier in English. The multi-tier architectures (or distributed) server split into several entities (e.g., an application server which itself is a client server database).

# Advantages & Disadvantages

## Advantages of client server

- All data are centralized on a single server, simplifying security checks and updates data and software.
- The technology supporting the client / server are more mature than others.
- A level administration server, customers have little importance in this model, they have less need to be administered

## Disadvantages of client server

- If too many clients to communicate with the server at the same time, it may not carry the load (while peer to peer networks work better by adding new members).
- If the server is no longer available, most customers do not walk (the peer network continues to function even if many participants leave the network).
- The costs of setting up and maintenance are high.