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BCA – Part III
Computer Network

File Transfer service (21 Port)

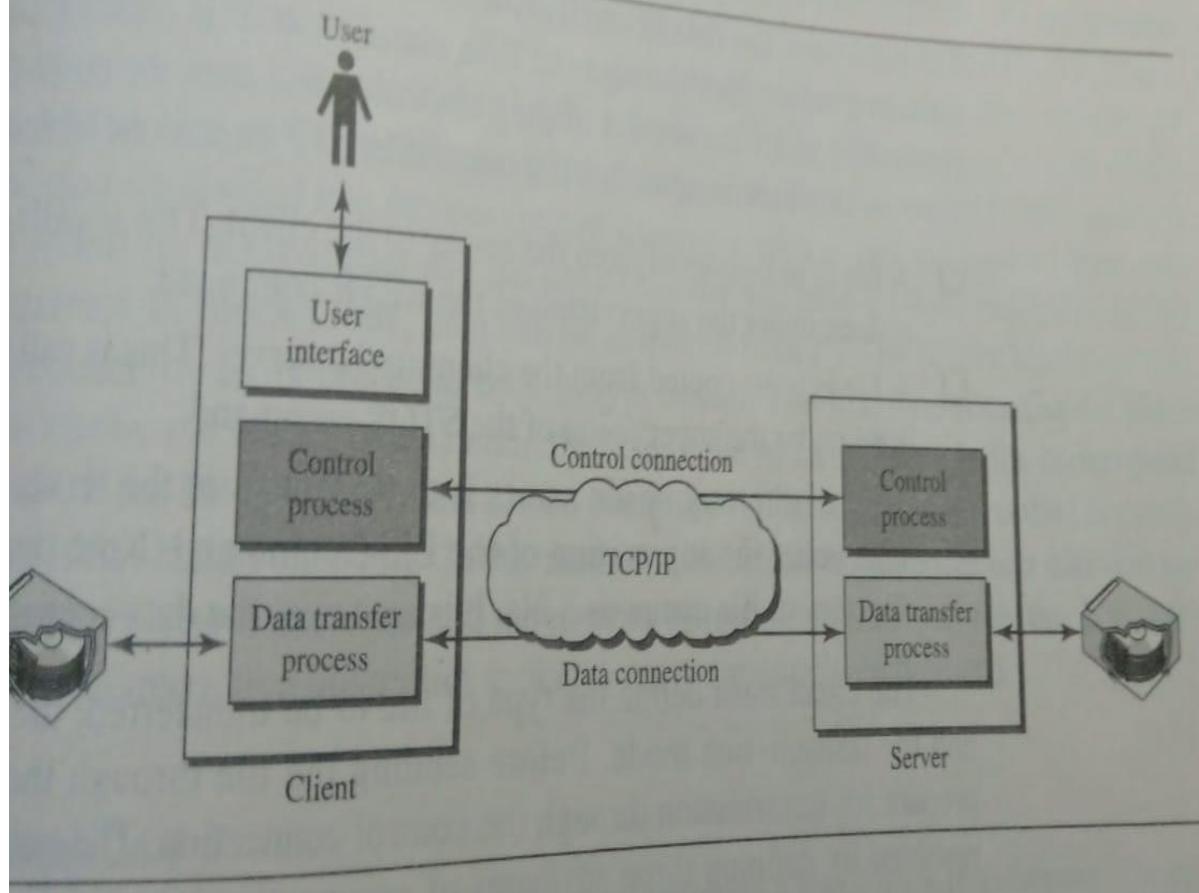
(FTP file transfer protocol)

FTP is the standard mechanism provided by TCP/IP for copying a file from one host to another. Transferring one files from one system to another, seems simple and straightforward , some problem must be dealt with first.

For example , two system may use different file name conventions . Two system may have different way to represent text and data. Two system may have different directory system. All these problems have been solved by FTP in a very simple and wise approach.

FTP differ from one client/server applications in that it established two connection between host. One connection is used for data transfer and other for control information(command and responses). This separation of data and command makes the FTP more wise. FTP uses two wel known TCP port, Port 21 is used to control connection and port 20 is used for data connection. There is several approaches. Most important may be shown as

Figure 26.21 FTP



The above basic model of FTP has three components – user interface, client control process and the client data transfer process. Where as the sever has two components :- the server control process, and server data transfer process. The control mechanism remains connected during the entire interactive FTP session. The data connection is open and then closed for each file transferred. i.e when a user starts an FTP session, the control connection opens. While the control connection

can be opened and closed multiple times if server files are transferred.

Communication over control connection → FTP uses the same approach as SMTP to communicate across the control connection. It uses the 7-bit ASCII character set. Communication is achieved through commands and response.

Communication over data connection → the purpose is different from of the control connection. Files transfer occurs over the data connection.

File transfer in FTP means one of three things

1. A file is to be copied from server to the client. This is called retrieving a file and done by RETR commands.
2. A File to be copied from client to the server. This is called storing a file. STOR is the command.
3. A list of file and directory names is to be sent from server to client. This is done under supervision of LIST command.

During the transfer, client must define the type of file to be transferred, the structure of data and transfer mode.

Process structure :-

The the process structure of the FTP may be numbered as :-

1. After the control connect is created the FTP server send 220 service (ready) response on the control connection
2. The client sends the name
3. The server responds with 331 (user name is ok , password required)
4. The client send the password
5. The server respond with 230 service respond(user login is ok)
6. The client send the list command (report) to find the list of files on the directory named report
7. Server responds with 150 and opens the data connection
8. The server then sends the list of the files or directory on the data connection when the whole list is sent , the server respond with 226 service response over control connection
9. The client now has two choices . it can QUIT command to respond the closing of the control connection or it can send another command to start another activity .
10. After receiving the QUIT command server responds 221 to close the control connection .

Anonymous FTP :- To use the FTP , a user needs an account (user name) and a Password on the remote server. Some sites have set of files available in public access. These site provide a global accessing password and user name to access the facility of FTP. The FTP connection is known as Anonymous FTP. In this case, user is anonymous and password is guest i.e an user can connect him/her self in to the server with these password for transfer of file through internet.

Anonymous FTP provide limited access of FTP facility and it is not fully secured.

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