

# Ftp- The File Transfer Protocol

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## **ABSTRACT:**

Protocol is a set of rules which governs the format and meaning of frames, packets or messages that are being exchanged between the peer entities. Application layer protocols are used to exchange data between programs running on the source and destination hosts. This paper includes the full description of File Transfer Protocol which is the protocol of Application layer of OSI and TCP/IP reference Model. One of the primary activities found on the Internet is the transferring of files. Every minute of every day, Internet users download files from various websites and Webmasters upload files and web pages to their website. The most common method for transferring files over the Internet is via the File Transfer Protocol, or FTP. FTP is a widely accepted Internet Standard.

## **KEYWORDS:**

Protocol; Client; Server; Transmission Control Protocol; OSI model

## **INTRODUCTION:**

The File Transfer Protocol (FTP) is a standard network protocol used to transfer computer files from one host to another host over a TCP-based network, such as the Internet. FTP is built on a client-server architecture and uses separate control and data connections between the client and the server. FTP users may authenticate themselves using clear sign-in protocol, normally in the form of a username and password, but can connect anonymously if

the server is configured to allow it. For secure transmission that protects the username and password, and encrypts the content, FTP is often secured with SSL/TLS (FTPS). SSH File Transfer Protocol (SFTP) is sometimes also used instead, but is technologically different. The first FTP client applications were command-line applications developed before operating systems had graphical user interfaces, and are still shipped with most Windows, Unix, and Linux operating systems. Many FTP clients and automation utilities have since been developed for desktops, servers, mobile devices, and hardware, and FTP has been incorporated into productivity applications, such as Web page editors.

**HOW FTP WORKS:** After a TCP connection is established, an FTP control connection is created. Internal FTP commands are passed over this logical connection based on formatting rules established by the Telnet protocol. Each command sent by the client receives a reply from the server to indicate whether it succeeded or failed. A data connection is established for each individual data transfer to be performed. FTP supports either normal or passive data connections, allowing either the server or client to initiate the data connection. Multiple data types and file types are supported to allow flexibility for various types of transfers. Overview of how FTP works to ensure that files are sent and received without loss of data that could corrupt them, FTP uses there liable

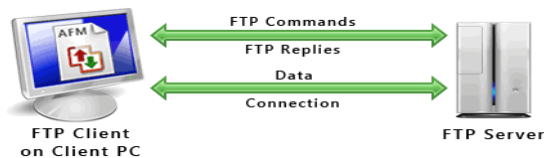
Transmission Control Protocol (TCP) at the transport layer. An authentication system is used to ensure that only authorized clients are allowed to access a server. At the same time, feature sometimes called anonymous FTP allows an organization that wishes it to set up a general information server to provide files to anyone who might want to retrieve them. Overview of how FTP works the interface between an FTP user and the protocol is provided in the form of a set of interactive user commands. After establishing a connection and completing authentication, two basic commands can be used to send or receive files. Additional support commands are provided to manage the FTP connection, as well as to perform support functions such as listing the contents of a directory or deleting or renaming files. In recent years, graphical implementations of FTP have been created to allow users to transfer files using mouse clicks instead of memorizing commands. FTP can also be used directly by other applications to move files from one place to another.



- Passive Connection Mode

In a Passive FTP connection, the server opens a port and listens (passively) and the client connects to it.

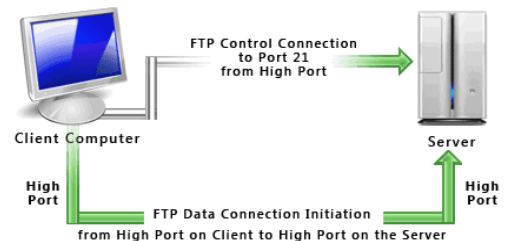
- Client opens up command channel from client port 2000(a) to server port 21(b).
- Client sends PASV to server on command channel.
- Server sends back (on command channel) PORT 1234(a) after starting to listen on that port.
- Client opens up data channel from client 2001(a) to server port 1234(a).
- Server acknowledges on data channel.



- Active Connection Mode

The FTP server may support Active or Passive connections, or both. In an Active FTP connection, the client opens a port and listens and the server actively connects to it.

- Client opens up command channel from client port 2000(a) to server port 21(b).
- Client sends PORT 2001(a) to server and server acknowledges on command channel.
- Server opens up data channel from server port 20(b) to client port 2001(a).
- Client acknowledges on data channel.



**FEATURES:**

- 100% pure Java, free, open source reusable FTP server
- Multi platform support and multithreaded design.
- User virtual directory, write permission, idle time-out and upload/download bandwidth limitation support.
- Anonymous login support.
- Both upload and download files are resemble.

- Handles both ASCII and binary data transfers.
- IP restriction support to ban IPs.
- Database and file can be used to store user data.
- All the FTP messages are customizable.
- Implicit/explicit SSL/TLS support.
- MDTM support - your users can change the date-time stamp of files.
- "MODE Z" support for faster data upload/download.
- Custom user manager, IP restrictor, logger can be added easily.
- User event notifications can be added (Ftplet).

### CONCLUSION:

This paper includes the full description of File Transfer Protocol. How it works, what are its uses in application layer of OSI

reference Model and TCP/IP reference model. It has basically 2 parts the FTP client and the FTP server. It has two modes the active and passive mode. FTP has various advanced features and it is basically accepted as an Internet Standard.

### FUTURE SCOPE:

- FTP is very useful and is not going to go away
- However the functionality provided by an FTP client is now often done inside a web browser
  - Most web browsers can talk the FTP protocol so you often you no longer need an external FTP client like fetch or WS-FTP to download files from the internet

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