HTTP/s: Hypertext Transfer Protocol

HTTP is a request/response protocol. When a client, typically a web browser, sends a request to a web server, HTTP specifies the message types used for that communication. The three common message types are GET, POST, and :

* GET - A client request for data. A client (web browser) sends the GET message to the web server to request HTML pages.
* POST - Uploads data files to the web server such as form data.
* PUT - Uploads resources or content to the web server such as an image.

Although HTTP is remarkably flexible, it is not a secure protocol. The request messages send information to the server in plain text that can be intercepted and read. The server responses, typically HTML pages, are also unencrypted.

For secure communication across the Internet, the HTTP Secure (HTTPS) protocol is used. HTTPS uses authentication and encryption to secure data as it travels between the client and server. HTTPS uses the same client request-server response process as HTTP, but the data stream is encrypted with Secure Socket Layer (SSL) before being transported across the network.

TCP : Transmission Control Protocol

TCP transport is analogous to sending packages that are tracked from source to destination. If a shipping order is broken up into several packages, a customer can check online to see the order of the delivery.

With TCP, there are three basic operations of reliability:

* Numbering and tracking data segments transmitted to a specific host from a specific application
* Acknowledging received data
* Retransmitting any unacknowledged data after a certain period of time

UDP: user datagram Protocol

UDP provides the basic functions for delivering data segments between the appropriate applications, with very little overhead and data checking. UDP is known as a best-effort delivery protocol. In the context of networking, best-effort delivery is referred to as unreliable because there is no acknowledgment that the data is received at the destination. With UDP, there are no transport layer processes that inform the sender of a successful delivery.

UDP is similar to placing a regular, non-registered, letter in the mail. The sender of the letter is not aware of the availability of the receiver to receive the letter. Nor is the post office responsible for tracking the letter or informing the sender if the letter does not arrive at the final destination.

FTP : File Transfer Protocol

FTP is another commonly used application layer protocol. FTP was developed to allow for data transfers between a client and a server. An FTP client is an application that runs on a computer that is used to push and pull data from a server running an FTP daemon (FTPd).

FTP requires two connections between the client and the server, one for commands and replies, the other for the actual file transfer:

* The client establishes the first connection to the server for control traffic using TCP port 21, consisting of client commands and server replies.
* The client establishes the second connection to the server for the actual data transfer using TCP port 20. This connection is created every time there is data to be transferred.

The data transfer can happen in either direction. The client can download (pull) data from the server, or the client can upload (push) data to the server.

POP3 :

Post Office Protocol

POP is used by an application to retrieve mail from a mail server. With POP, mail is downloaded from the server to the client and then deleted on the server. This is how POP operates, by default.

The server starts the POP service by passively listening on TCP port 110 for client connection requests. When a client wants to make use of the service, it sends a request to establish a TCP connection with the server. When the connection is established, the POP server sends a greeting. The client and POP server then exchange commands and responses until the connection is closed or aborted.

With POP, email messages are downloaded to the client and removed from the server, so there is no centralized location where email messages are kept. Because POP does not store messages, it is undesirable for a small business that needs a centralized backup solution.