# **HTTP Overview**

Hyper Text Transfer Protocol is an application layer protocol designed to transfer information between networked devices and runs on top of other layers of the network protocol stack. It is the foundation of the World Wide Web used to load webpages using hypertext links.

# **Architecture**

HTTP is a request/response protocol based on client/server architecture where web browsers, search engines, etc., act like HTTP clients and the web server acts like a server.

## **Client**

The HTTP client sends a request to the server in the form of a request method, URI, and protocol version, followed by a MIME like message containing request modifiers, client information and possible body content over a TCP/IP connection.

## **Server**

The HTTP server responds with a status line, including the message’s protocol version and a success or error code, followed by a MIME-like message containing server information, entity meta information, and possible entity-body content.

# **Components and their functions**

## **HTTP Request**

An HTTP request is the way Internet communications platforms such as web browsers ask for the information they need to load a website.

Each HTTP request made across the Internet carries with it a series of encoded data that carries different types of information. A typical HTTP request contains:

* HTTP version type
* a URL
* an HTTP method
* HTTP request headers
* Optional HTTP body.

## **HTTP Method**

An HTTP method indicates the action that the HTTP request expects from the queried server. For example, common HTTP methods are ‘GET’ and ‘POST. A ‘GET’ request expects information back in return, which is usually in the form of a website, while a ‘POST’ request indicates that the client is submitting information to the web server (such as form information, e.g. a submitted username and password).

## **HTTP Response**

An HTTP response is what web clients (often browsers) receive from an Internet server in answer to an HTTP request. These responses communicate valuable information based on what was asked for in the HTTP request.

A typical HTTP response contains:

* An HTTP status code
* HTTP response headers
* Optional HTTP body

# **Application Protocol**

**HTTP is a connectionless protocol** – The HTTP client initiates a HTTP request and after a request is made, the client waits for the response. The server processes the request and sends a response back after which the client disconnects the connection. The client and server therefore know about each other during current request and response only.

**HTTP is a stateless protocol** – HTTP being a connectionless is a direct result of it being a stateless protocol. The server and client are aware of each other only during a current request. Afterwards, both forget about each other. No information is retained between different requests across the web pages.

**HTTP is media independent** – Any type of data can be sent by HTTP as long as both the client and server know how to handle the data content. The client and server need to specify the content type using appropriate MIME - type.