

# HTTP

HyperText Transfer Protocol (HTTP), is the underlying backbone of communication for the World Wide Web (WWW). The term was coined by Ted Nelson in 1965, however the credit for developing http goes to Tim-Berners Lee in 1989.

## Message Format

HTTP is generally used for client server architecture and the client and server communicate by sending plain-text messages also known as ASCII messages.

There are two sides to this communication :-

### 1. Request from client

These request messages consist of a request line containing http request methods like get or post, the resource path to be fetched in server, the version of http protocol , and the optional header containing various informations for the servers.

### 2. Response from server

These response messages consist of version of http protocol they follow, a status code indicating the successful or unsuccessful request, status message containing description of status code, http headers same as requests, and the body containing the fetched resources.

## HTTP Headers

HTTP headers allows the client and server to communicate and to pass some additional information along with the request and response. It consists of case insensitive name followed by a colon and then its value without any white spaces in between.

With the context , HTTP header can be classified into four categories namely General, Request, Response and Entity Header.

Two of the special types of http headers are

### 1. End- to- end headers

They are transmitted to the end recipient and must not be manipulated by the intermediate hops.

### 2. Hop- to- hop headers

They are useful only for single transport i.e. between the hops and caches and proxies need not retransmit or store it.

```
POST / HTTP/1.1
Host: localhost:8000
User-Agent: Mozilla/5.0 (Macintosh;... )... Firefox/51.0
Accept: text/html,application/xhtml+xml,...,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Content-Type: multipart/form-data; boundary=-12656974
Content-Length: 345

-12656974
(more data)
```

The diagram illustrates the classification of HTTP headers in a request. Three colored arrows point to specific header lines: a red arrow points to the 'Accept' header (labeled 'Request headers'), a green arrow points to the 'Connection' header (labeled 'General headers'), and a blue arrow points to the 'Content-Type' and 'Content-Length' headers (labeled 'Entity headers').

