**HTTP/2 vs. HTTP/1.1**

HTTP stands for hypertext transfer protocol, and it is the basis for almost all web applications. HTTP is the method computers and servers use to request and send information. By using HTTP user sends the request to the server & the server sends the response to the user.

There are more stages of http, but here we are going to discuss about http1.1 which was created in the year 1997 & http2 which was created in 2015.

*HTTP/1.1*

Whenever we enter a url, a request is made to the server and server responds back with a source page, but before sending the request and the response there is a TCP connection between client & server. again you make a request to the server for some jpg image & the server gives a response as an image img.jpg. the connection was not lost here after the first request because we add a keep-alive header which is the part of the request so there is an open connection between the server & client. there is a persistent connection which means several requests & responses are merged in a single connection. These are the drawbacks that lead to the creation of HTTP/2.

**Disadvantages of HTTP/1.1**

* The first problem is HTTP/1.1 transfer all the requests & responses in the plain text message form.
* The second one is header line blocking in which TCP connection is blocked all other requests until the response does not receive. all the information related to the header file is repeated in every request.

*HTTP/2*

HTTP/2 works on the binary form instead of text layer that converts all the messages in binary format. it works on fully multiplexed that is one TCP connection is used for multiple requests. HTTP/2 compresses the header. HTTP/2 solves several problems that the creators of HTTP/1.1 did not solve. In particular, HTTP/2 is much faster and more efficient than HTTP/1.1. One of the ways in which HTTP/2 is faster is in how it prioritizes content during the loading process.

*The other differences between HTTP/2 and HTTP/1.1 that impact performance are*

* **Multiplexing**

HTTP/1.1 loads resources one after the other, so if one resource cannot be loaded, it blocks all the other resources behind it. In contrast, HTTP/2 is able to use a single TCP connection to send multiple streams of data at once so that no one resource blocks any other resource. HTTP/2 does this by splitting data into binary-code messages and numbering these messages so that the client knows which stream each binary message belongs to.

* **Server push**

A HTTP/2 solves this problem by allowing a server to "push" content to a client before the client asks for it. The server also sends a message letting the client know what pushed content to expect server only serves content to a client device if the client asks for it.

* **Header compression**

To speed up web performance, both HTTP/1.1 and HTTP/2 compress HTTP messages to make them smaller. However, HTTP/2 uses a more advanced compression method called HPACK that eliminates redundant information in HTTP header packets.

* **Prioritization**

Certain resources, like large JavaScript files, may block the rest of the page from loading if they have to load first. HTTP/2 offers a feature called weighted prioritization. This allows developers to decide which page resources will load first, every time.