**Write a blog on Difference between HTTP1.1 vs HTTP2?**

**HTTP :**

* Hypertext Transfer Protocol (HTTP) is an application protocol that is, currently, the foundation of data communication for the World Wide Web.
* HTTP is based on the Client/Server model. Client/Server model can be explained as two computers, Client (receiver of service) and Server (provider of service) that are communicating via requests and responses.
* A simple and abstract example would be a restaurant guest and a waiter. The guest (Client) asks (sends request) waiter (Server) for a meal, then the waiter gets the meal from the restaurant chef (your application logic) and brings the meal to the guest.

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| **Differentiator** | **HTTP/1.1** | **HTTP/2** |
| **Year** | 1997 | 2015 |
| **Key Features** | It supports connection reuse i.e., for every TCP connection there could be multiple requests and responses, and pipelining where the client can request several resources from the server at once. However, pipelining was hard to implement due to issues such as head-of-line blocking and was not a feasible solution. | Uses multiplexing, where over a single TCP connection resource to be delivered are interleaved and arrive at the client almost at the same time. It is done using streams which can be prioritized, can have dependencies and individual flow control. It also provides a feature called server push that allows the server to send data that the client will need but has not yet requested. |
| **Status Code** | Introduces a warning header field to carry additional information about the status of a message. Can define 24 status codes, error reporting is quicker and more efficient. | Underlying semantics of HTTP such as headers, status codes remain the same. |
| **Authentication Mechanism** | It is relatively secure since it uses digest authentication, NTLM authentication. | Security concerns from previous versions will continue to be seen in HTTP/2. However, it is better equipped to deal with them due to new TLS features like connection error of type Inadequate Security. |
| **Caching** | Expands on the caching support by using additional headers like cache-control, conditional headers like If-Match and by using entity tags. | HTTP/2 does not change much in terms of caching. With the server push feature if the client finds the resources are already present in the cache, it can cancel the pushed stream. |
| **Web Traffic** | HTTP/1.1 provides faster delivery of web pages and reduces web traffic as compared to HTTP/1.0. However, TCP starts slowly and with domain sharing (resources can be downloaded simultaneously by using multiple domains), connection reuse and pipelining, there is an increased risk of network congestion. | HTTP/2 utilizes multiplexing and server push to effectively reduce the page load time by a greater margin along with being less sensitive to network delays. |

**Main goals of developing HTTP/2 were:**

* Protocol negotiation mechanism — protocol electing, e.g., HTTP/1.1, HTTP/2 or other.
* High-level compatibility with HTTP/1.1 — methods, status codes, URIs and header fields.
* Page load speed improvements trough.
* Compression of request headers.
* Binary protocol.
* HTTP/2 Server Push.
* Request multiplexing over a single TCP connection.
* Request pipelining.
* HOL blocking (Head-of-line) — Package blocking.