HTTP 1.1 vs HTTP 2: What's the difference?

* HTTP 1.1 is the current version of the Hypertext Transfer Protocol, the protocol used to transfer data between web browsers and servers.
* HTTP 2 is a newer version of the protocol that was designed to improve performance and efficiency.

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| **Feature** | **HTTP 1.1** | **HTTP 2** |
| Framing | Textual | Binary |
| Multiplexing | No | Yes |
| Header compression | No | Yes |
| Server push | No | Yes |

**Framing**

* HTTP 1.1 uses a textual framing format, which means that all messages are sent in plain text.
* HTTP 2 uses a binary framing format, which means that all messages are sent in a compressed binary format. Binary framing is more efficient than textual framing because it requires less bandwidth and can be parsed more quickly.

**Multiplexing**

* In HTTP 1.1, each request is sent over a separate TCP connection. This means that if a client needs to download multiple resources from the same server, it will have to wait for each response to finish before it can start downloading the next resource.
* In HTTP 2, multiple requests can be sent over a single TCP connection. This is called multiplexing. Multiplexing allows the client to download multiple resources simultaneously, which can significantly improve performance.

**Header compression**

* HTTP 1.1 does not compress HTTP headers.
* HTTP 2 uses a header compression algorithm called HPACK to compress HTTP headers. HPACK can significantly reduce the size of HTTP headers, which can improve performance.

**Server push**

* HTTP 1.1 the client must explicitly request each resource that it needs.
* HTTP 2 the server can push resources to the client without the client having to request them. This is called server push.

**NOTE**: Server push can improve performance by allowing the server to send resources to the client before the client even needs them.

Ex: if a server knows that a client is likely to need a particular file, it can push that file to the client before the client requests it.

**Benefits of HTTP 2**

* Improved performance: HTTP 2 can significantly improve the performance of web applications by reducing latency and increasing throughput.
* Reduced bandwidth usage: HTTP 2 can reduce bandwidth usage by compressing headers and sending multiple requests over a single TCP connection.

**Conclusion**

HTTP 2 is a newer version of the HTTP protocol that offers a number of benefits over HTTP 1.1, including improved performance, reduced bandwidth usage, and improved reliability. Most major web browsers and servers now support HTTP 2, so it is important to make sure that your website is using HTTP 2 to provide the best possible experience for your users.