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Day-1

1.Difference between HTTP1.1 vs HTTP2:

HTTP/1.1 and HTTP/2 are both protocols used for communication between a client and a server over the web, but they have several differences in terms of performance and features.

HTTP/1.1:

1.Connection Handling:

Uses multiple connections (usually 6) to load resources in parallel. This leads to a head-of-line blocking issue, where one slow request can block others.

2.Header Compression:

Headers are not compressed, leading to increased overhead and longer loading times.

3.Resource Prioritization:

Limited support for prioritization. The browser decides which resources to load first based on factors like position in the HTML file.

4.Multiplexing:

Limited multiplexing; each request blocks the next one, leading to potential inefficiencies.

5.Latency:

Higher latency due to the need for multiple connections.

6.SSL/TLS:

SSL/TLS encryption is optional, and if used, it adds overhead.

HTTP/2:

1.Connection Handling:

Uses a single, multiplexed connection. Multiple requests and responses can be in flight simultaneously.

2.Header Compression:

Headers are compressed, reducing overhead and improving loading times.

3.Resource Prioritization:

Supports prioritization, allowing more critical resources to be loaded first.

4.Multiplexing:

Efficient multiplexing of multiple requests and responses on a single connection, eliminating head-of-line blocking.

5.Latency:

Lower latency due to the single connection and more efficient use of resources.

6.SSL/TLS:

Encourages the use of SSL/TLS, and many implementations require it. The use of SSL/TLS in HTTP/2 is more efficient than in HTTP/1.1.

Overall Benefits of HTTP/2:

1. Performance Improvement:
    a. Faster page loading times due to multiplexing and header compression.
2. Reduced Latency:
    a. Improved efficiency reduces latency, leading to a better user experience.
3. Single Connection:
    a. A single connection per origin reduces the need for multiple TCP connections.
4. Backward Compatible:
    a. Designed to be backward compatible with HTTP/1.1, allowing gradual adoption.

In summary, HTTP/2 is designed to address the limitations of HTTP/1.1 and provides significant improvements in performance and efficiency, making it the preferred choice for modern web applications.

Difference in table:

Feature	HTTP/1.1	HTTP/2
Connection Handling	Uses multiple parallel connections (usually 6)	Uses a single, multiplexed connection
Header Compression	Headers are not compressed	Headers are compressed, reducing overhead
Resource Prioritization	Limited support for prioritization	Supports efficient prioritization
Multiplexing	Limited multiplexing	Efficient multiplexing on a single connection
Latency	Higher latency due to multiple connections	Lower latency due to single connection
SSL/TLS	SSL/TLS encryption is optional	Encourages and often requires SSL/TLS