S1

1.for different types of delays in packet switched.

Processing

Queueing

Transmission

Propagation

A. Utilizing HTTP/1.0 with no parrallel connection capability, the number of RTTs required to download the page is : RTTs = 8

B. HTTP/1.1

Persistent connection

Parallel sequests

Keep aline

Num RTT’s =3

3.D

4.True

5.D

S2

1. processing 10ms, queueing 0, transmission 10ms, propagation 2\*10-2ms

(10+10+2\*10-2) \* 5 = 100.1ms

2. 01010101

01110000 +

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11000101

01001100+

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100010001

1 bit error can be detected

2 bits error can go undetected

3. A:ad:easy to read and debug; disadv: takes more space、harder to parse

B:allow webistes to always serve the latest content

CDNs are bult to serve at scale

C:Bit torrent:

Peers can leave the system rather than remaining to provide chuncks to others

How to mininte?

1.”Rarest chunck first” policy : upload the least available chuncks first

2.”Optimistic unchoke policy” : every regular interval add a new peer to exchange chuncks with

4.a: 1-4-8-10

b:

c: