23-1 computer network

Hw1 due 10.09 23:59

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1-a. 50 users

1-b. 0.2

1-c.

친필, 폰트, 서예, 텍스트이(가) 표시된 사진

자동 생성된 설명

1-d.

텍스트, 친필, 폰트, 화이트이(가) 표시된 사진

자동 생성된 설명

친필, 폰트, 서예, 일렉트릭 블루이(가) 표시된 사진

자동 생성된 설명

11.1536 (msec)

3-a. 200mesc, 6000msec

3-b. 2msec, 4msec

3-c. 204msec / if we don’t use message segmentation, the transmission delay is N\*P\*(L/R). but when we use message segmentation, the transmission delay is (N+P-1) \*(L/R) and as P increases, it becomes more time-efficient to use message segmentation. (N: number of links, P: number of packets, L: length of packet, R: bps of link)

3-d. using message segmentation is very useful when the switches use store-and forward packets switching. Each router should store all unit to send to next router, and the unit need to be stored became smaller when using message segmentation, it can prevent packet loss. And message segmentation makes the users who want to be using the same link can using it fair. It prevents that user need to be waiting too much time for a single transfer.

Non-persistence requires RTT time for each packet transmissions. So, we need handshaking 11 times. But even if we use parallel downloads, the total time is same as non-parallel downloads because each link transmit rate became 300/N bps when there are N parallel connections. So, I think this way is not efficient because cannot take the advantage of parallel connections.

If we consider persistent HTTP, the procedure of 10 handshaking is not needed. Still, we cannot take the advantage of parallel connection, but the absolute time taken might be better than non-persistent way because its matter of amount of data needs to be delivered.

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Whole packets

텍스트, 전자제품, 스크린샷, 소프트웨어이(가) 표시된 사진

자동 생성된 설명

5-a. first destination might be the IP of my default DNS.



5-b. UDP protocol

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5-c.

response filed is 0 and it means this is query packet. Opcode is type of query, and the value is 0000 in common case. Truncation is 0 and it means that all the contents is delivered. Recursion is 1 and it means this packet is using recursion. Reserved bit is reserved, so it is cleared to 0. Question means the number of questions. In these cases, only one question is delivered. Other fields are number of each session.

Queries are consisting of some fields. Name filed contains name of domain that required, and name of host. Type means type of query. In the cases, A mean the address of host and AAAA means address of Ipv6. Class filed is type of network class. The case is IN, means Internet.

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5-d.

Answers section is about the response of queries and consist of some fields. Name filed indicates name of domain, type and class filed are same as above answer. Time to live means the time DNS server saved the data as cache. Data length is length of data, and Address is actual data they tried to deliver.

5-e.

In the final response packet, AAAA Address might be the IP address.

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5-f. TCP protocol

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5-g. User-Agent means OS information of client’s application. In this case, User-agent is like that.



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5-h HTTP/1.1 version

5-i. status code returned from the server is 200 OK

5-j last modified time is like that.



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5-k. bytes of contents are 1256 in this case.