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Ex4:

Part A: DoH

1. One advantage to the DoH - its helps to hide your online activities, and avoid your service provider peeking into your traffic.
   When users enters a URL into their browser, a DNS query is usually needed in order to get the IP address.
   If DNS server isn't existing on the local network, the request has to pass through the internet server provider's network.
   It means for example that that an ISP can see which sites you were visit, by monitoring DNS name resolution requests.
   DoH hides the name resolution requests from the ISP and from anyone listening on intermediary networks.

2. Disadvantage:
   2.1 Because the DNS request has to go over HTTPS, it may take a little longer for your packet to go across the internet than if it used HTTP.
   2.2 It weakens cyber-security-by encrypting DNS queries, companies using DNS monitoring for cyber security measures will lose visibility into data such as query type, response and originating IP that are used to determine bad actors.
   2.3 It overrides any sort of DNS filtering your network is doing to provide insight into security and your network info
   2.4 The ISP will not get the information about the DNS queries and sites we want to travel, and will be unable to provide us
   With the right kind of service, that because the DNS queries will be send encrypted and not necessarily through the ISP DNS Server.

3. We will choose disadvantage 2.4. If we will implements DoH by application level , the ISP will not be able to see the details of the DNS query but although there are still many other protocols send in web browsing such as TCP which can provide the ISP with enough info to provide good service although the DNS query being Encrypted Or not sent by Default ISP DNS Server.

4. a. advantage: the browsers could perform queries by bypassing the operating system's DNS functionality.
   con: the application doesn't know if its bypass over DOH queries.
   b. advantage: the client systems continue to use DNS for queries that asking the local name server and then replies via DOH by reaching DOH servers
   con: the end user is transparent.
   c. Advantage: the system is configured to sent DOH proxy queries instead of sending DNS queries trough certain port (53 or 853).
   con: proxy must be installed locally on each system, in large organizations it requires a lot of work.
   d. Advantage: all the queries goes through a certain plugin which manage DOH.
   Con: not all applications know how to connect the plugin
   We think that option b is the best
5. DOH has a follow-up that all the material that is supposed to be sent is sent, and if not it will be sent again.

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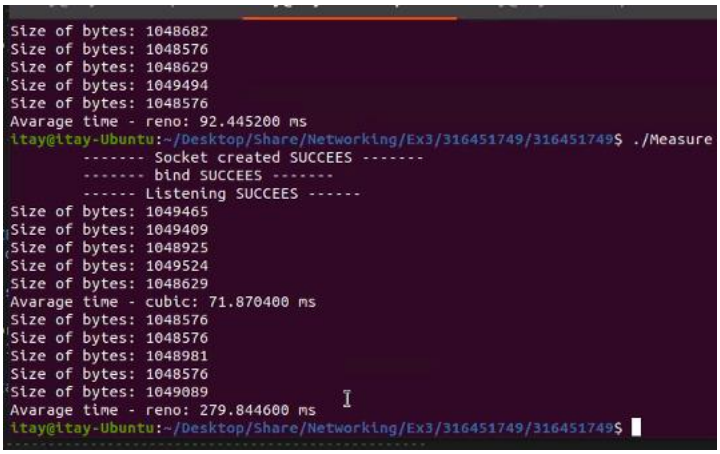
Part B:

packet loss:

10%



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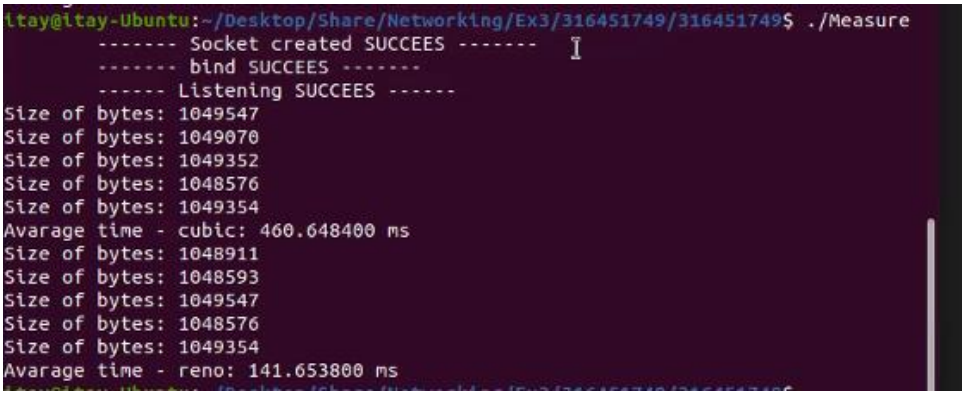

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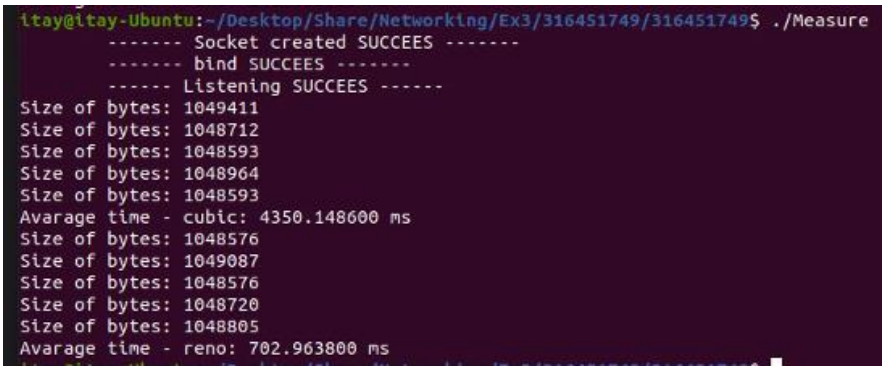

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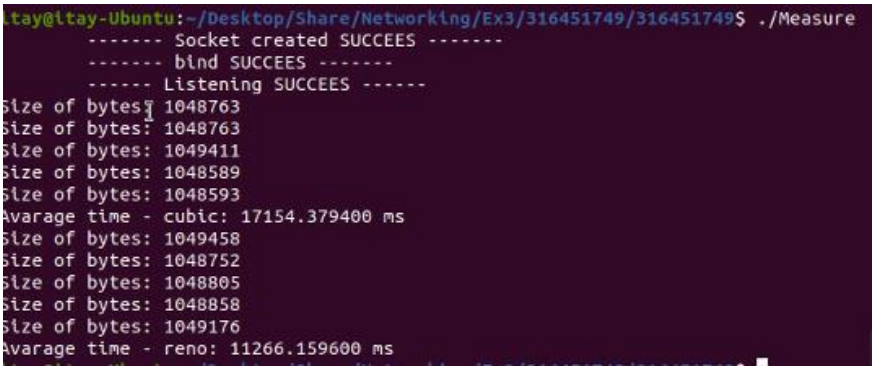

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