Assignment 4

First chapter:DnsOverHttps

1) Mention one advantage of using Doh(beside the fact the its encrypted) and explain it:
    a. One advantage of using Doh is that you can use DoH in application level and not only operation system's
2) Mention and explain about two disadvantages of using DoH beside the regular DNS:
    a. Different then DNS while using DoH the users doesn't have control trough where the query's goes.
    b. the second disadvantage of DoH is that it disable and type of DNS filtering our networks used to do to get insight and information about the network info.
3) Choose one of the disadvantage you mention in the last question and offer a way to stablise\solve or get over and explain it:
    a. Well talk about our second disadvantage, as we can see it the best solution is to add hush key to the specific data those companies and our networks regularly using so only ones who can determine the queries will those verified services that we can trust.

Assignment 4

4)

	Implementation by the application level	Implementation trough web PROXY	Implementation trough local proxy	Plugin install on pc settings
advantages	Using DoH in the application level gives us the ability to avoid the DNS method of the operation system	Allow us to avoid webs here DNS doesn't work properly	In addition we got local attacker in out locl web he cant read my DNS requests since when they sent from out pc they are already encrypted	Very easy to do
Disadvantages	Sometime the browser doesn't update the users about ignorations of DoH requests	The Proxy web servers will send queries trough HTTPS on the web to solve the current query . This condition will cause the ability to use DoH to change out system, (doesn't encrypted in someplaces)	The web proxy will send DNS queries trough HTTPS server on the web to solve the requested query, this condition cause the ability to use DoH without changing out system, the implementation of DoH in the local proxy level special installs on the system itself what causes more work	The plugin might couse security issues if we won't keep our eyes on them often since they usually a third part software. Beside in a condition of multiple plugins installed might causes out system to collapse

Our most beloved method about those is using DoH trough web proxy since in our opinion in this method the advantages our of the disadvantages.

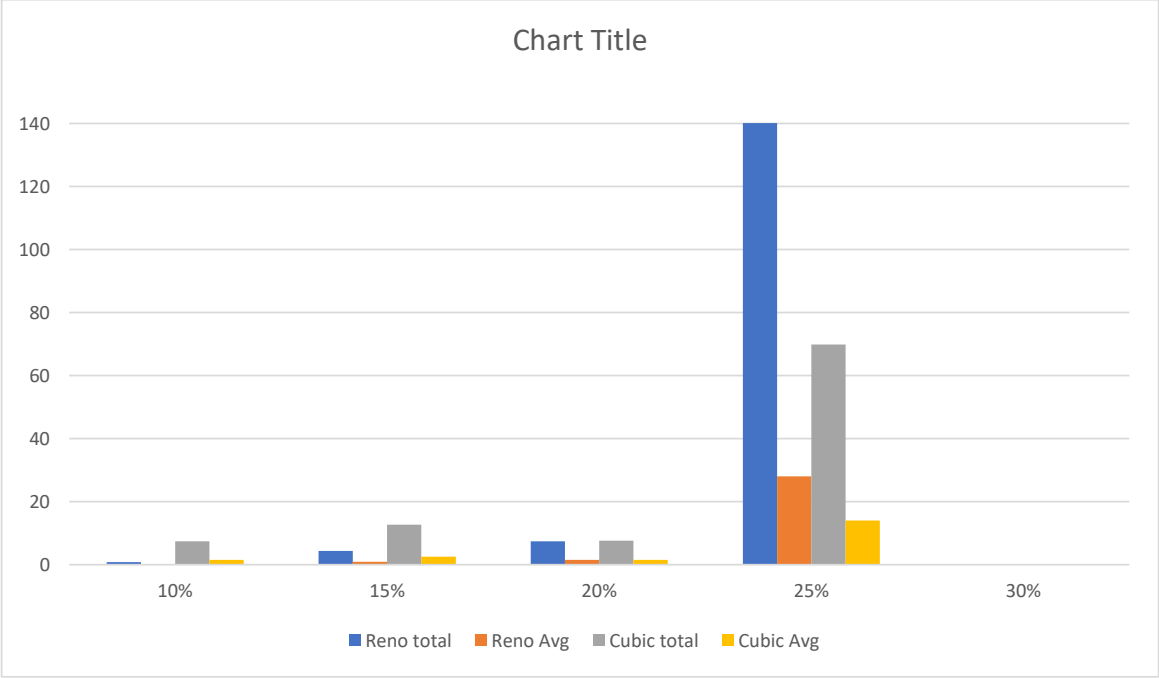
5) One clearly advantage of using DoH against 53Do is that the use of TCP against 53Do who usually use uDP since the mechanism runs by Paquet lost on TCP much better and efficiency, moreover it basically allow us to follow after the data transferred and check any time if what we lost received well.
Another advantage is that DoH allow us faster recreation of losted queries then 53Do

Assignment 4

Part B

RENO		Cubic		%
total	average	total	average	
0.798	0.1596	7.433	1.4866	10
4.38	0.876	12.711	2.5422	15
7.425	1.485	7.574	1.5148	20
140.144	28.0288	69.857	13.9714	25
X	X	X	X	30

We try to ran the program on 30% for about a hour, yet none of the values returned back.



Assignment 4

The reason for this surprising results come from the fact that the reno might have a “slow start ” comparing to the reno but when we use Paquet lose as factor we can see the advantages of the cubic since it can recreate to Paquet faster

```
ubuntu:~/environment $ sudo tc qdisc add dev lo root netem loss 10%
ubuntu:~/environment $ ./measure
Time measured: 5.802 seconds (Cubic).
Time measured: 1.199 seconds (Cubic).
Time measured: 0.208 seconds (Cubic).
Time measured: 0.223 seconds (Cubic).
Time measured: 0.001 seconds (Cubic).
THE SOCKET HAS CHANGED FROM CUBIC TO RENO
Time measured: 0.366 seconds (Reno).
Time measured: 0.002 seconds (Reno).
Time measured: 0.428 seconds (Reno).
Time measured: 0.001 seconds (Reno).
Time measured: 0.001 seconds (Reno).
ubuntu:~/environment $
```

```
ubuntu:~/environment $ sudo tc qdisc change dev lo root netem loss 15%
ubuntu:~/environment $ ./measure
Time measured: 8.087 seconds (Cubic).
Time measured: 0.986 seconds (Cubic).
Time measured: 0.247 seconds (Cubic).
Time measured: 0.448 seconds (Cubic).
Time measured: 2.943 seconds (Cubic).
THE SOCKET HAS CHANGED FROM CUBIC TO RENO
Time measured: 0.207 seconds (Reno).
Time measured: 0.624 seconds (Reno).
Time measured: 0.235 seconds (Reno).
Time measured: 2.834 seconds (Reno).
Time measured: 0.480 seconds (Reno).
ubuntu:~/environment $
```

```
ubuntu:~/environment $ sudo tc qdisc change dev lo root netem loss 20%
ubuntu:~/environment $ ./measure
Time measured: 5.487 seconds (Cubic).
Time measured: 0.207 seconds (Cubic).
Time measured: 0.430 seconds (Cubic).
Time measured: 1.167 seconds (Cubic).
Time measured: 0.283 seconds (Cubic).
THE SOCKET HAS CHANGED FROM CUBIC TO RENO
Time measured: 4.176 seconds (Reno).
Time measured: 1.471 seconds (Reno).
Time measured: 0.420 seconds (Reno).
Time measured: 0.939 seconds (Reno).
Time measured: 0.419 seconds (Reno).
ubuntu:~/environment $
```

Assignment 4