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### Question 1:

**1.a.i** :The trafic control more efficent , you don’t need to modify every routing table in every device just one tiom for one device and it will help to centrelize the desisson and mangement of the network.

**1.a.ii** : it incress the complixity and the device cost since the switch need to ask the controlaer every tiime about routing roul and keep quering to know the topology.

**1.a.iii** : we will loss security control on the information since we remove the routing table from our side whih mean will losse the firwall on this device and the network allways under hack threat

**1.b.i** : no since transport layer is run at the end system and dose not send any more info untill get acknloegment

**1.b.ii** : usually TCP/IP is more relayble system. The data go throw transport layer then ntework layer to physical layern, the data send with IP and port number. First the client send synch to the server , server listening if free then send acknologement to client , client send pack synck ack back to inform the server it’s synch now , the client send the message and wait acknolegment from the server to send next message , in failer case the client send the message again

**1.b.iii** : ther is no contradiction since TCP/IP will work to eleminat the congection coused by send huge data rate in fast way by controling the flow in the network and delever the data , Data link algorithem is also work to delever the data and eleminat the congection coused by sender or resiver crach.

**1.c.i** : that mean there is no recoud to DNS which mean the lockal server will ask the root server about the domain where if the domain is uiqe the root will give it other wise it will be hard to know the domain since the is no recoud and will ask every domain if he is the one which can be hard process and maybe we get rong DNS since there is no record and no type of the DNS (A record or NS, IPV4).

**1.c.ii** : If DNS cash for long time will coause memory full for the DNS server wich mean work slowly because the long time of serch and need more memmory.

**1.d.i** : to self-steplize network: the network should synchronous and has limit or bound i.e the network should be known, if it is anonymose mean it’s not known , no limet or boundery so no synchronouse

**1.d.ii** : by converting shard memmor to messag passing to use compiler that done by using tocken passing algorithem where only one prosessor hold the token and sender and receiver can hold it for infint time, untill new tocken come. The counter in network will use to avoid deadblock configuration. If sender have message grater than counter, he will set the counter to his message +1, and send it’s counter messag to the recever where the receiver will comper it with his own counter if it’s not equal , set it’s counter to equale new counter message it received. By using Tocke passing alogorithem will arrive to safe configuration then the system will stabilize.

**1.e.i** : when it used super self -stabilizing , since it reduce number of rounds in network topologe

**1.e.ii** : No we should not, since at the end it give use the behaviour we want and we designed to, Nut we can use a dynamice system in case tolurent or failur happened.