Ameer Alkam - 1120217 - Prelab #1

Question 1

Static Routing is configuring by manually creating the routing table in the router, it's the simplest routing form, making it easy to implement on small networks, but it scales in complexity very quickly. It is inflexible as it cannot handle any changes or failures from the external networks because the routes are manually configured by the network admin. Perfomance wise the routers required for it don't require any significant RAM or CPU to do the work, as no processing is required. It is secure as routers to give information about their routing entries.

Dynamic Routing uses a set of protocols run by each router, to determine the 'best route' to choose for each network dynamically without the intervention of the network admin. Dynamic routing is more adaptable and flexible as it responds to any changes in the external networks. The need for a routing protocol means that there's an overhead posed on the router to keep the routing table up-to-date, as well as to process the protocol itself, requiring the router to have a lot of RAM and CPU compared to Static routing. Less secure as routers keep sharing information regarding their routing table's entries.

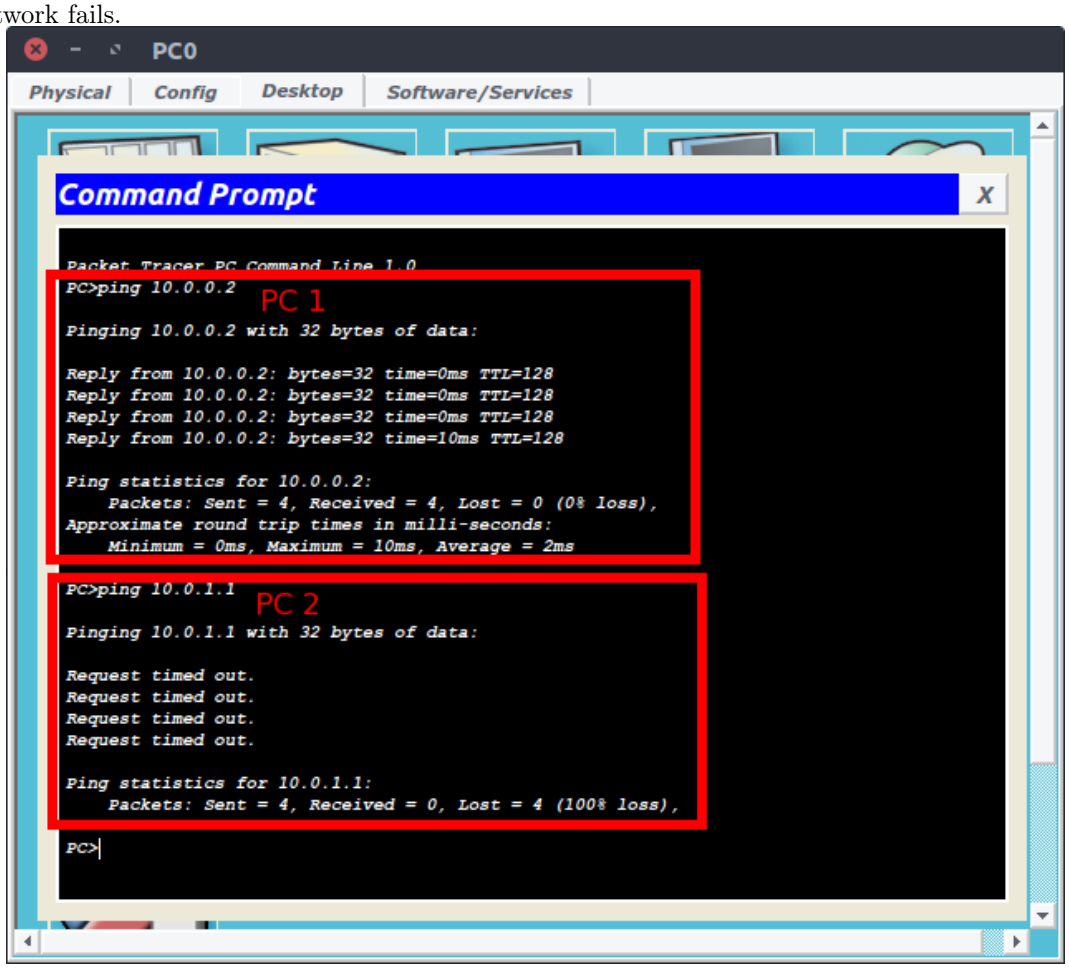
Question 2

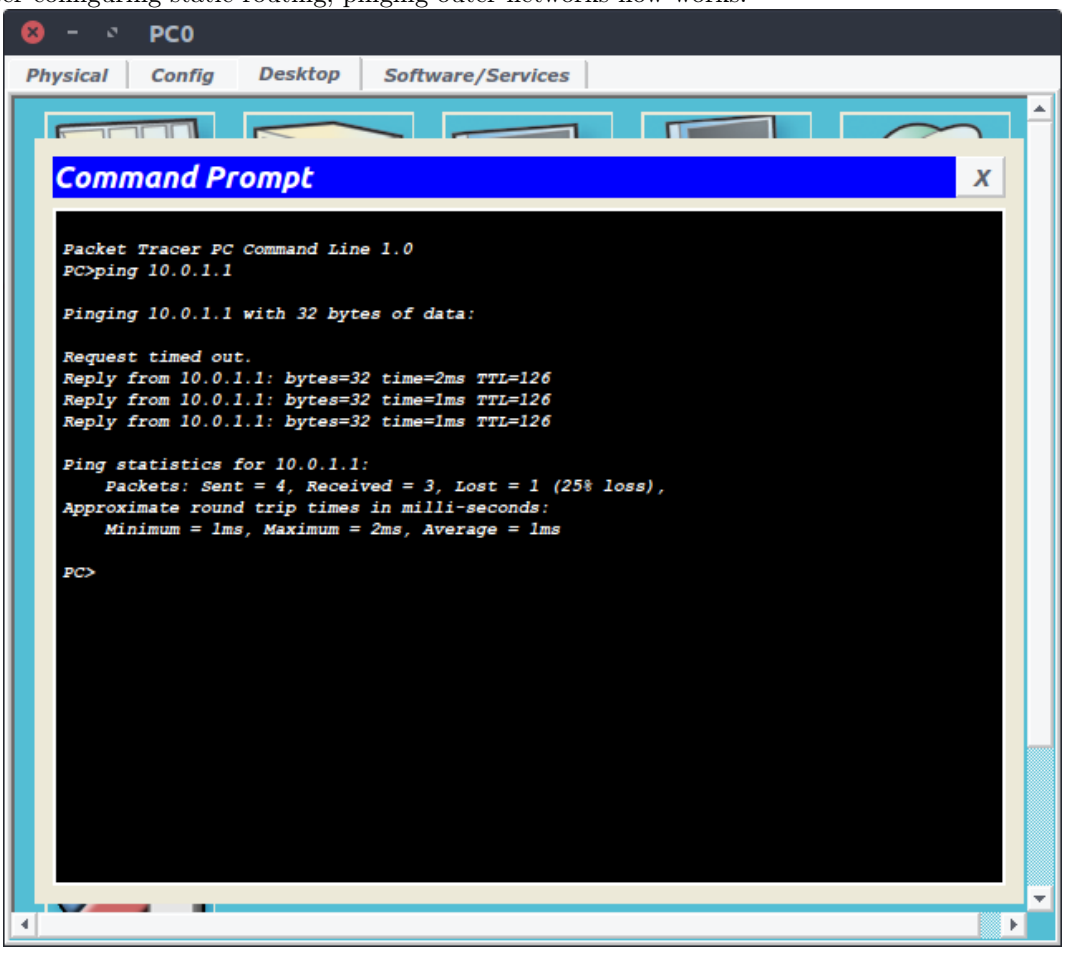
Subnetting reasons for it,

- *Distributing the network administration duty*, as each subnet can have its own admin, which collaborates with the admins of other subnets in order to maintaine the whole network.
- *Security and troubleshooting*, since each subnet can be isolated from the others, and if any routing issues are faced by a host it can be detected and fixed quicker as it is known to be part of the smaller subnet.
- *To connect networks accross separate geographical regions.*

Question 3

Before configuring static routing, local ping works fine, but going to another network fails.



Question 4

After configuring static routing, pinging outer networks now works.