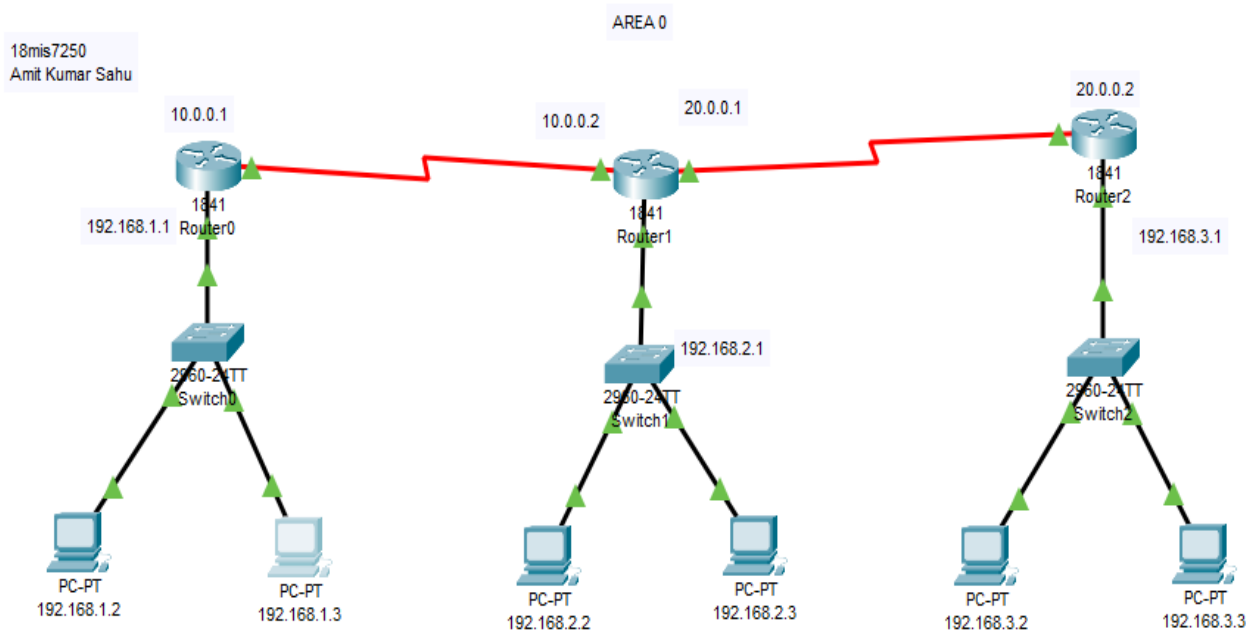
OSPF



Router Serial port configuration

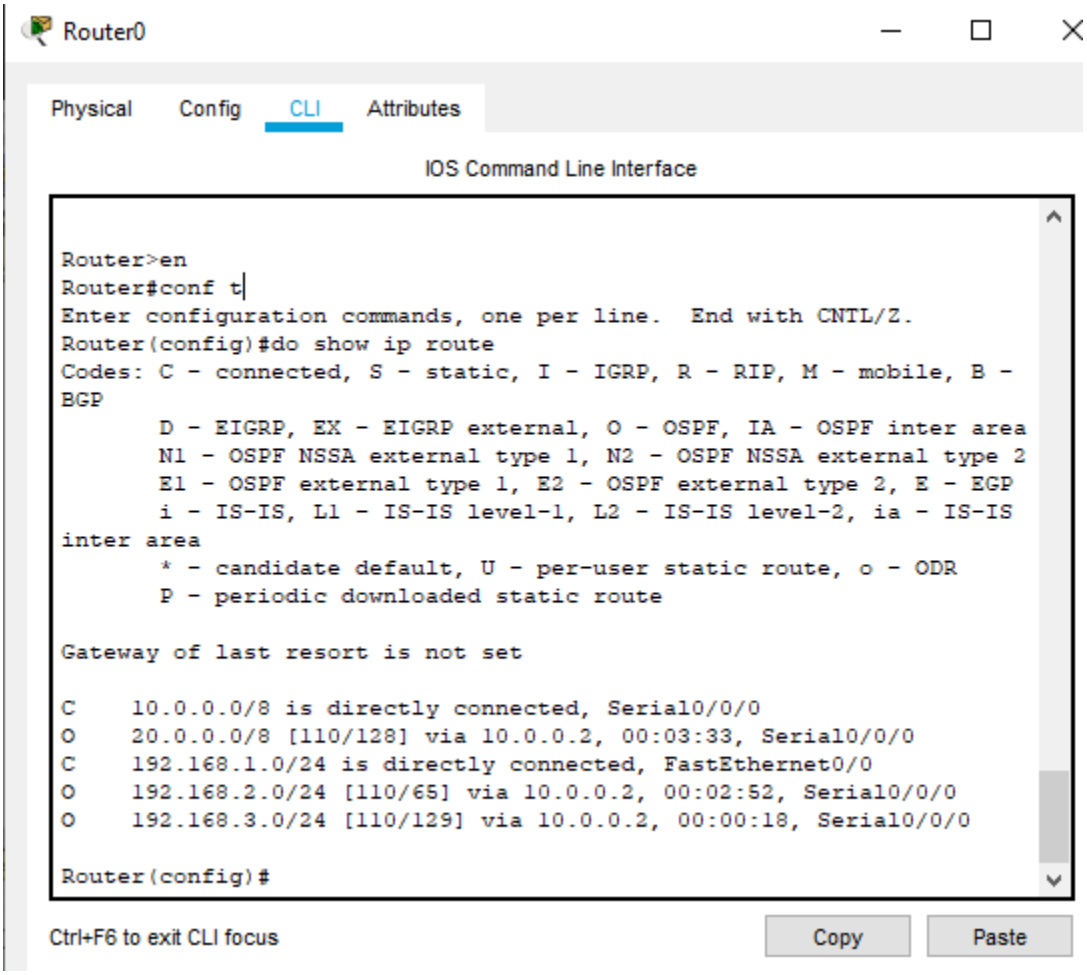
Router(config)#interface Serial0/0/1
Router(config-if)#
%SYS-5-CONFIG_I: Configured from console by console
ip address 20.0.0.1 255.0.0.0
Router(config-if)#

OSPF configuration

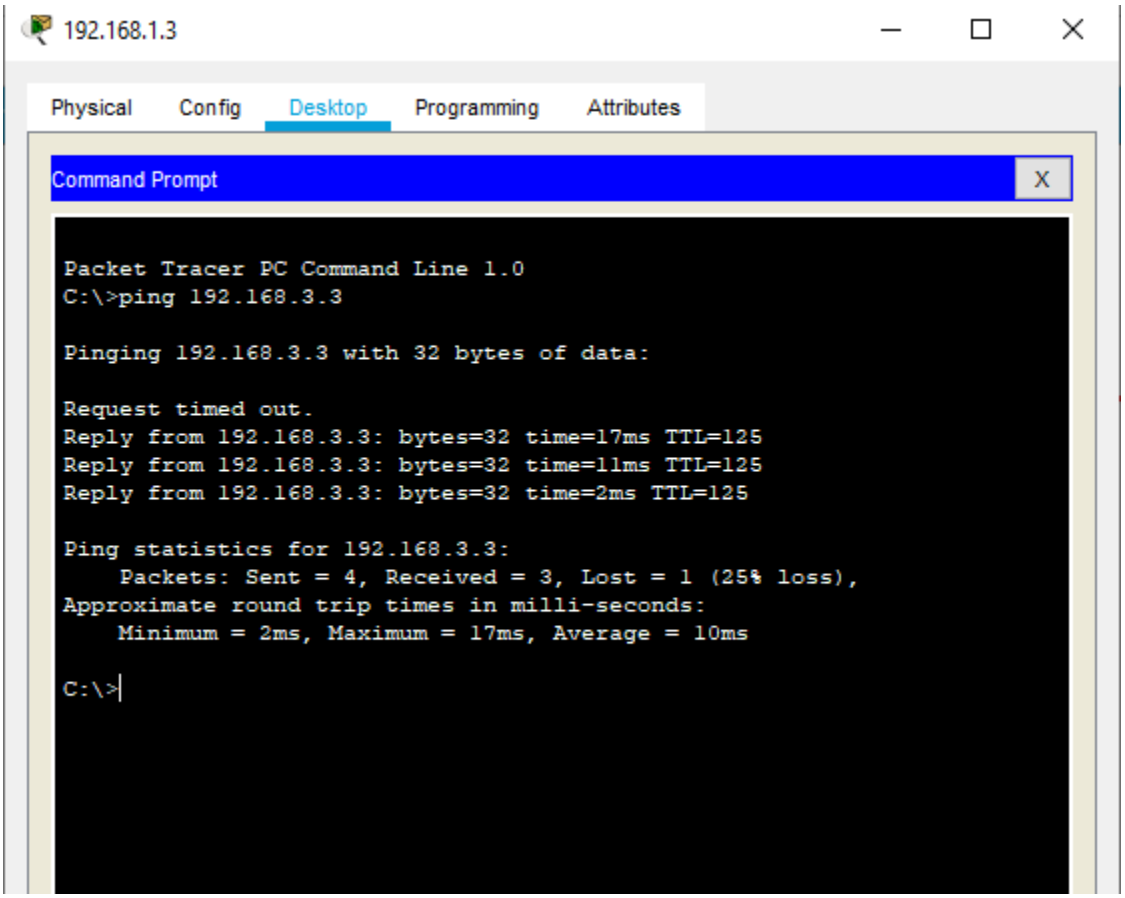
Router(config)#router ospf 1
Router(config-router)#network 192.168.1.0 0.255.255.255 area 0
Router(config-router)#network 10.0.0.0 0.0.0.255 area 0
Router(config-router)#

Router(config)#router ospf 1
Router(config-router)#network 10.0.0.0 0.0.0.255 area 0
Router(config-router)#network 10.0.0.0 0.0.0.255 area 0
00:47:29: %OSPF-5-ADJCHG: Process 1, Nbr 192.168.1.1 on Serial0/0/0 fr
Router(config-router)#network 20.0.0.0 0.0.0.255 area 0
Router(config-router)#network 192.168.2.0 0.255.255.255 area 0

Router(config-router)#



Successful Pinging



Summary

Routing Information Protocol (RIP) is a dynamic routing protocol which uses hop count as a routing metric to find the best path between the source and the destination network. It is a distance vector routing protocol which has AD value 120 and works on the application layer of OSI model. RIP uses port number 520.

Hop Count :
Hop count is the number of routers occurring in between the source and destination network. The path with the lowest hop count is considered as the best route to reach a network and therefore placed in the routing table. RIP prevents routing loops by limiting the number of hopes allowed

in a path from source and destination. The maximum hop count allowed for RIP is 15 and hop count of 16 is considered as network unreachable.

Features of RIP :

1. Updates of the network are exchanged periodically.
2. Updates (routing information) are always broadcast.
3. Full routing tables are sent in updates.
4. Routers always trust on routing information received from neighbor routers. This is also known as *Routing on rumours*.

OSPF : Open Shortest Path First is a robust link-state interior gateway protocol (IGP). People use OSPF when they discover that RIP just isn't going to work for their larger network, or when they need very fast convergence. This installment of Networking 101 will provide a conceptual overview of OSPF, and the second part of our OSPF coverage will delve a bit deeper into the protocol itself, as well as OSPF area configurations.

To understand the design needs for areas in OSPF, let's start by discussing how OSPF works. There's some terminology you may not have encountered before, including:

- Router ID: In OSPF this is a unique 32-bit number assigned to each router. This is chosen as the highest IP address on a router, and can be set large by configuring an address on a loopback interface of the chosen router.
- Neighbor Routers: two routers with a common link that can talk to each other.
- Adjacency: a two-way relationship between two neighbor routers. Neighbors don't always form adjacencies.
- LSA: Link State Advertisements are flooded; they describe routes within a given link.
- Hello Protocol: this is how routers on a network determine their neighbors and form LSAs.
- Area: a hierarchy. A set of routers that exchange LSAs, with others in the same area. Areas limit LSAs and encourage aggregate routes.