**ROUTING PROTOCOLS**

1. RIP (ROUTING INFORMATION PROTOCOL) :

* Create a network topology by placing pc’s ,routers and switches
* Connect all devices using required cables
* Assign ip addresses for pc’s and routers

PC’s configuration :

PC1 : Go to command prompt -> ipconfig 128.163.1.2 255.255.0.0 128.163.1.1

PC2 : Go to command prompt -> ipconfig 192.168.1.2 255.255.255.0 192.168.1.1

Routers configuration :

R1 :

enable

config t

interface fa0/0

ip address 128.163.1.1 255.255.0.0

no shutdown

interface serial2/0

ip address 10.10.1.2 255.0.0.0

no shutdown

R2 :

enable

config t

interface fa0/0

ip address 192.168.1.1 255.255.255.0

no shutdown

interface serial2/0

ip address 10.10.1.3 255.0.0.0

no shutdown

* After assigning ip addresses apply routing information protocol

R1 :

enable

config t

router rip

network 10.0.0.0

network 128.163.0.0

network 192.168.1.0

* Enter the networks that are directly connected to the router
* Repeat the same process with R2
* Send a packet from pc1 – pc2 to test the network connectivity.

1. OSPF (OPEN SHORTEST PATH FIRST) :

* Create a network topology by placing pc’s ,routers and switches
* Connect all devices using required cables
* Assign ip addresses for pc’s and routers

PC’s configuration :

PC1 : Go to command prompt -> ipconfig 128.163.1.2 255.255.0.0 128.163.1.1

PC2 : Go to command prompt -> ipconfig 192.168.1.2 255.255.255.0 192.168.1.1

Routers configuration :

R1 :

enable

config t

interface fa0/0

ip address 128.163.1.1 255.255.0.0

no shutdown

interface serial2/0

ip address 10.0.0.1 255.0.0.0

no shutdown

interface serial3/0

ip address 30.0.0.2 255.0.0.0

no shutdown

R2 :

enable

config t

interface serial2/0

ip address 10.0.0.2 255.0.0.0

no shutdown

interface serial3/0

ip address 20.0.0.1 255.0.0.0

no shutdown

R3 :

enable

config t

interface fa0/0

ip address 192.168.1.1 255.255.255.0

no shutdown

interface serial2/0

ip address 20.0.0.2 255.0.0.0

no shutdown

interface serial3/0

ip address 30.0.0.1 255.0.0.0

no shutdown

* Now apply ospf in routers

R1 :

en

config t

router ospf 1

network 128.163.1.1 0.0.255.255 area 0

network 10.0.0.0 0.255.255.255 area 0

network 30.0.0.0 0.255.255.255 area 0

R2 :

en

config t

router ospf 1

network 10.0.0.0 0.255.255.255 area 0

network 20.0.0.0 0.255.255.255 area 0

R3 :

en

config t

router ospf 1

network 192.168.1.1 0.0.0.255 area 0

network 30.0.0.0 0.255.255.255 area 0

network 20.0.0.0 0.255.255.255 area 0

* Here the network command uses wildcard masks
* Send a packet from pc1 – pc2 to test the network connectivity.

1. BGP (BORDER GATEWAY PROTOCOL) :

* Create a network topology by placing pc’s ,routers and switches
* Connect all devices using required cables
* Assign ip addresses for pc’s and routers

PC’s configuration :

PC1 : Go to command prompt -> ipconfig 128.163.1.2 255.255.0.0 128.163.1.1

PC2 : Go to command prompt -> ipconfig 192.168.1.2 255.255.255.0 192.168.1.1

Routers configuration :

R1 :

enable

config t

interface fa0/0

ip address 128.163.1.1 255.255.0.0

no shutdown

interface serial2/0

ip address 10.0.0.1 255.0.0.0

no shutdown

R2 :

enable

config t

interface fa0/0

ip address 192.168.1.1 255.255.255.0

no shutdown

interface serial2/0

ip address 10.0.0.2 255.0.0.0

no shutdown

* Now apply bgp in routers

R1:

en

config t

router bgp 100

network 128.163.1.1

network 10.0.0.0

neighbor 10.0.0.2 remote-as 200

neighbor 192.168.1.2 remote-as 200

R2:

en

config t

router bgp 200

network 192.168.1.1

network 10.0.0.0

neighbor 10.0.0.1 remote-as 100

neighbor 128.163.1.2 remote-as 100

* Send a packet from pc1 – pc2 to test the network connectivity

1. EIGRP (ENHANCED INTERIOR GATEWAY ROUTING PROTOCOL) :

* Create a network topology by placing pc’s ,routers and switches
* Connect all devices using required cables
* Assign ip addresses for pc’s and routers

PC’s configuration :

PC1 : Go to command prompt -> ipconfig 192.168.1.5 255.255.255.0 192.168.1.1

PC2 : Go to command prompt -> ipconfig 192.168.2.5 255.255.255.0 192.168.2.1

PC3 : Go to command prompt -> ipconfig 192.168.3.5 255.255.255.0 192.168.3.1

Routers configuration :

R1 :

en

config t

interface f0/0 192.168.1.1 255.255.255.0

no shutdown

interface serial2/0 10.0.0.1 255.0.0.0

no shutdown

R2 :

en

config t

interface f0/0 192.168.2.1 255.255.255.0

no shutdown

interface serial2/0 10.0.0.2 255.0.0.0

no shutdown

interface serial3/0 20.0.0.1 255.0.0.0

no shutdown

R3 :

en

config t

interface f0/0 192.168.3.1 255.255.255.0

no shutdown

interface serial2/0 20.0.0.2 255.0.0.0

no shutdown

* Now apply eigrp for routers

R1 :

en

config t

router eigrp 100

network 192.168.1.0 0.0.0.255

network 10.0.0.0 0.255.255.255

no auto-summary

R2 :

en

config t

router eigrp 100

network 192.168.2.0 0.0.0.255

network 10.0.0.0 0.255.255.255

network 20.0.0.0 0.255.255.255

no auto-summary

R3 :

en

config t

router eigrp 100

network 192.168.3.0 0.0.0.255

network 20.0.0.0 0.255.255.255

no auto-summary

* Here the network command uses wildcard masks
* Send a packet from pc1 – pc2 to test the network connectivity