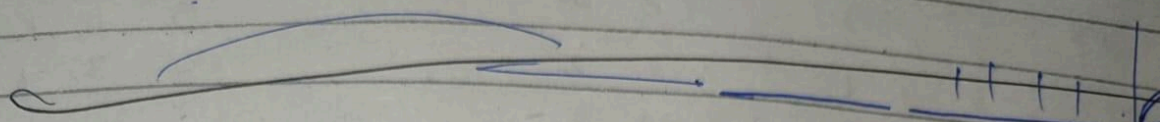

command to view ospf interface cost

R1 # show ip ospf interface.

changing it —

R1 (config) # interface serial 0/0/0

R1 ( ) # ip ospf cost 1562

Lab-10 NAT configuration:

In this lab static NAT and dynamic NAT are configured.

Since no routing protocol will be enabled, configure a default route to the internet on the NAT router.

forward any traffic to ISP1

ISP1

NAT(config)# ip route 0.0.0.0 0.0.0.0 200.200.100.2

configure a static route on ISP1 router for the translated public IP pool.

NAT POOL subnet

ISP1(config)# ip route 200.200.106.128 255.255.255.128

NAT S0/0

200.200.100.1

Create an ACL to define internal network.

NAT(config)# access-list 1 permit 192.168.1.0 0.0.0.255

Static NAT configuration:

MAP a private IP to a fixed public IP (200.200.100.252)

NAT(config)# ip nat inside source static 192.168.1.2 200.200.100.252

- Reload the router to force new IDs to be used.

- Command to view ospf neighbours of a router

R1 # show ip ospf nighbor

- Router-id command to change the ID.

R1 (config) # router ospf 1
R1 ( ) # router-id 10.4.4.4
R1 ( ) # end
R1 # clear ip ospf process.

- removing ID with no command.

R1 (config) # router ospf 1
R1 ( ) # no router-id 10.4.4.4
R1 ( ) # end
R1 # clear ip ospf process.

- Verify ospf operation

R1 # show ip ospf neighbor
R1 # show ip protocols
R1 # show ip route (cost can be found).

- Viewing bandwith on s0/0/0. (any interface).
R1 # show interface s0/0/0.

command to change bandwith.

R1 # config) # inface s0/0/0.
R1 (config-if) # bandwith 64
s0/0/1 ✓

Dynamic NAT configuration:

Create a pool of public IPs for other private IPs

NAT (config)# ip nat pool public 200.200.100.129 200.200.100.250 netmask 255.255.255.128

Map private IPs in the internal network to public pool:

NAT (config)# ip nat inside source list 1 pool public

Designate NAT interfaces:
Specify which nat interfaces are inside (private) and outside (public).

NAT (config)# interface fa0/0
NAT (config-if)# ip nat inside
NAT (config-if)# interface s0/0
NAT ( )# ip nat outside.

Verification:
Show NAT Translations:
NAT # show ip nat translations
Show NAT statistics:
NAT # show ip nat statistics
clear NAT translations
NAT # clear ip nat translation *

Lab 11 : Configuring IPv6 Addressing

Configure IPv6 Addressing on Router.

Enable router to forward IPv6 packets.

R1 (config)# ipv6 unicast-routing

→ Configure G0/0.

R1 (config)# interface ga0/0
R1 (config-if)# ipv6 address 2001:DB8:1:1::1/64
R1 (config-if)# ipv6 address FE80::1 link-local
R1 (config-if)# no shutdown

→ Configure G0/1

↓

→ Configure S0/0/0

↓

Config IPV6 Addressing on Servers

" " " on clients

Lab-09 ACL

- All configuration done (out to ping in different subnets ↓).
- Enable ospf in all interfaces R1 & R2 (area 0)

```
R1(config)# router ospf 1
R1(config-router)# network 10.0.0.0 0.255.255.255 area 0
R1(        )# end

R2(config)# router ospf 1
R2(config-router)# network 10.0.0.0 0.255.255.255 area 0
R2(        )# end
```

or

```
R2(config-router)# network 10.4.4.0 0.0.0.3 area 0
```

for R1 also.

ACL configurations:

- permit packets from S1 to subnet of hosts A & B.

Using an outbound ACL on R1's G0/0, permit packets from S1 & deny all other packets
" " " G0/1, permit S2 & deny all other.

```
R1(config)# access-list 1 permit 10.2.2.1
R1(cofig)# access-list 2 permit 10.2.2.2

R1(config)# interface G0/0
R1(config-if)# ip access-group 1 out
R1(config-if)# interface G0/1
R1(config-if)# ip access-group 2 out
R1(    )# end
```

- Remove RIP config from each router.

R1 (config) # no router rip

// similar For R2 & R3.

- Config RIP

R1 (config) # router rip

R1 (config-router) # network 172.30.0.0

- Config R1 to stop sending updates out to F0/0.

R1 (config-router) # passive-interface fa 0/0.

R1 (config-router) # end

R1 # copy run start.

Similar for R2 & R3.

- verify RIP routing

R1 # show ip route

R1 # show ip protocols.

R1 # debug ip rip

R1 # undebug all.

when your finished with OSPF config.

R1 (config-router)# end
R1 #

Similarly configure OSPF on R2 & R3.

- Config OSPF router IDs.

OSPF router ID uniquely identify the routers in the OSPF routing domain. (it is an IP address).

1- IP address configured with OSPF router-id command.
2- Highest IP address of any router's loopback addresses.
3- Highest active IP address on any of the router's physical interfaces.

Examining the current ID.

R1 # show ip protocols (it will show you the ID).
R1 # show ip ospf (")
R1 # show ip ospf interface (").

Using loopback addresses to change the ID.

R1 (config) # interface loopback 0.
R1 (config-if) # ip address 10.1.1.1 255.255.255.255.

Similar for R2 & R3.

Lab-08 OSPF Configuration.

128+64+32+16.

- Basic Router configuration.

R1(config)# hostname MyRouter

MyRouter(config)# no ip domain-lookup.

EXEC mode Password.

MyRouter(config)# enable secret Password.

MOTD Banner.

MyRouter(config)# banner motd # Hello world #

Password for console connections.

MyRouter(config)# line console 0

" " # password ConsolePassword

" " # login

" " # exit

Password for VTY connections

MyRouter(config)# line vty 0 4

" (config-line)# password VTYPassword

" " # login

" " # exit

- Config OSPF on R1

R1(config)# router OSPF 1

R1(config-router)# network 172.16.1.16 0.0.0.15 area 0

- config the router to advertise S0/0/0 interface attached to it.

R1(config-router)# network 192.168.10.0 0.0.0.3 area 0

Similar for S0/0/1.