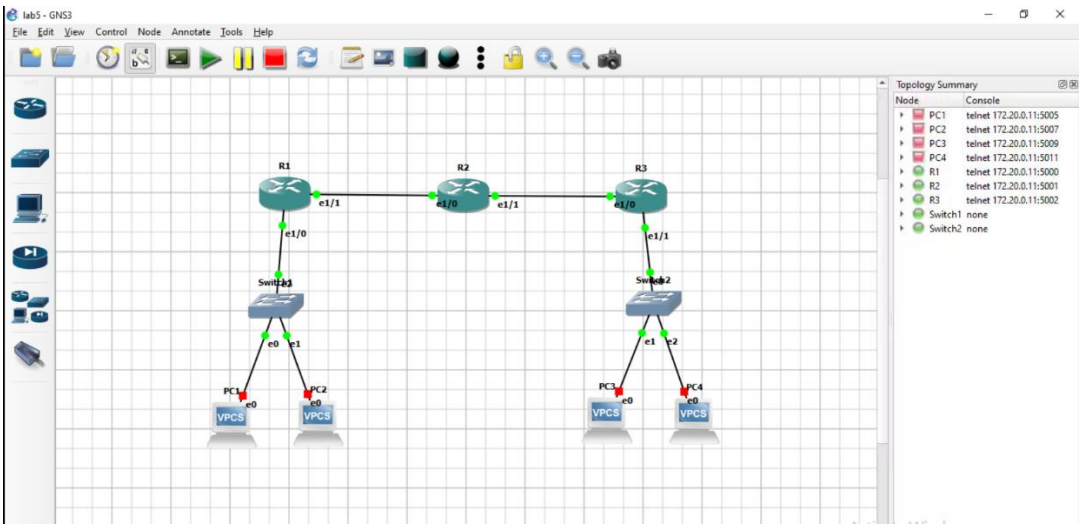
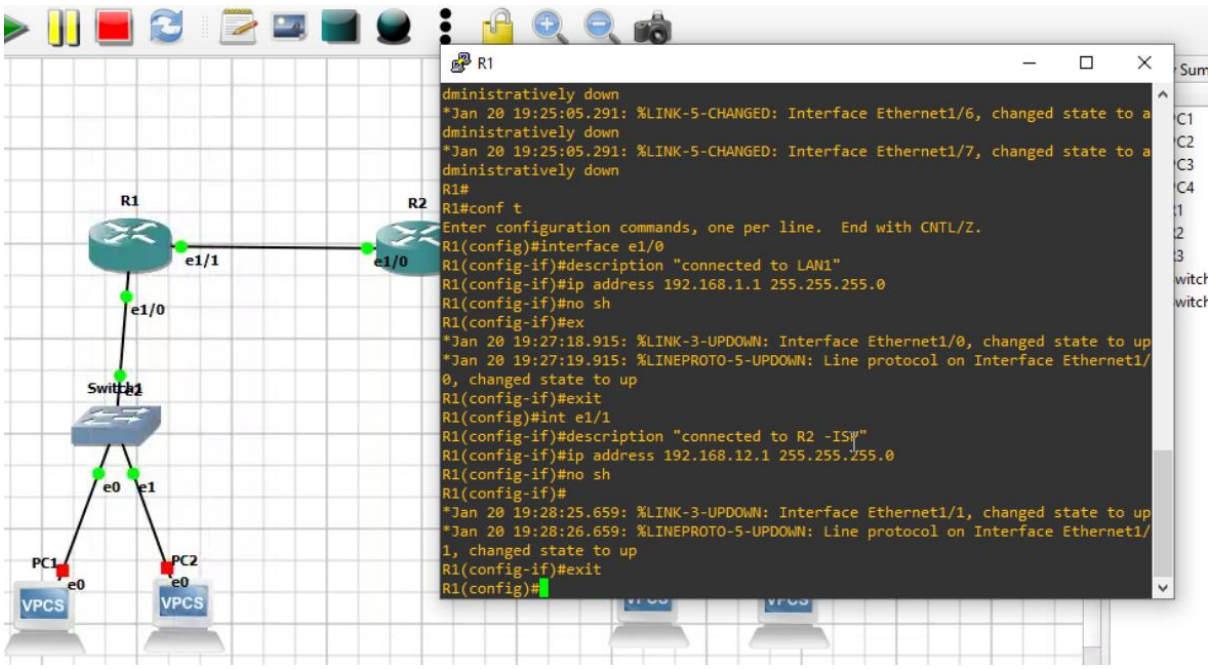
# ASSIGNMENT OF DATACOM



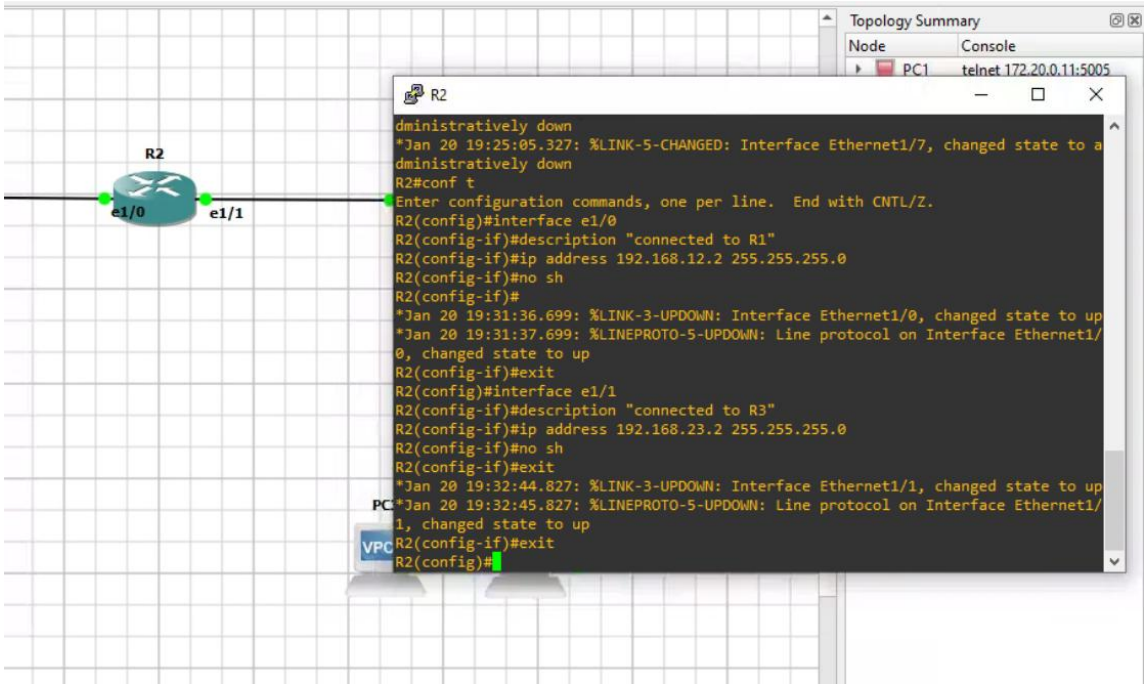

## 1. STATIC ROUTING

Router configuration

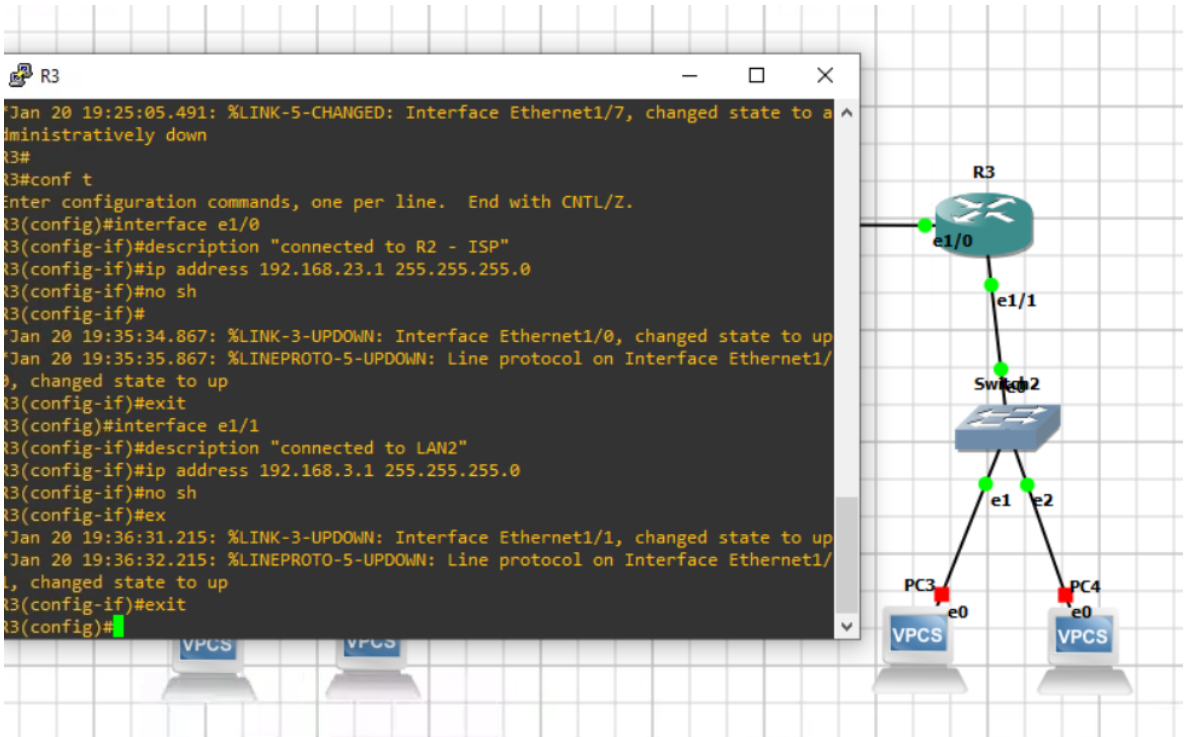
R1



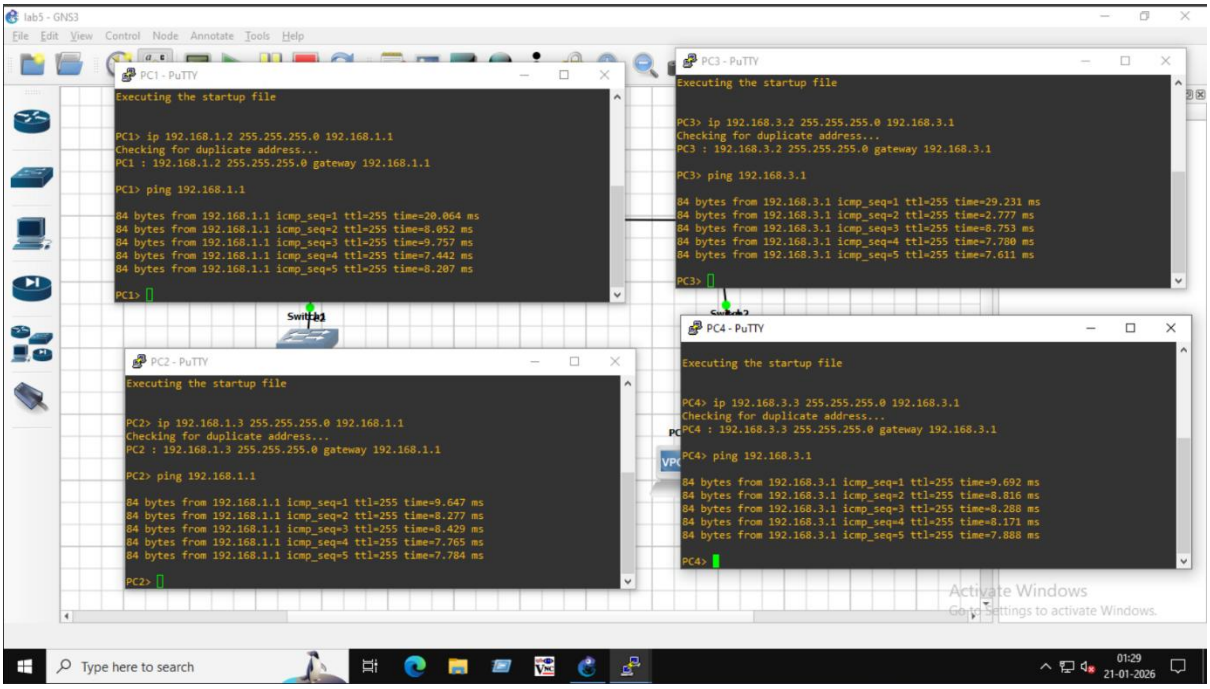
R2


Topology Summary
Node
Console
PC1
telnet 172.20.0.11:5005
R2
e1/0
e1/1
R2
dministratively down
*Jan 20 19:25:05.327: %LINK-5-CHANGED: Interface Ethernet1/7, changed state to a
dministratively down
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#interface e1/0
R2(config-if)#description "connected to R1"
R2(config-if)#ip address 192.168.12.2 255.255.255.0
R2(config-if)#no sh
R2(config-if)#
*Jan 20 19:31:36.699: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
*Jan 20 19:31:37.699: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/
0, changed state to up
R2(config-if)#exit
R2(config)#interface e1/1
R2(config-if)#description "connected to R3"
R2(config-if)#ip address 192.168.23.2 255.255.255.0
R2(config-if)#no sh
R2(config-if)#exit
*Jan 20 19:32:44.827: %LINK-3-UPDOWN: Interface Ethernet1/1, changed state to up
*Jan 20 19:32:45.827: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/
1, changed state to up
R2(config-if)#exit
R2(config)#

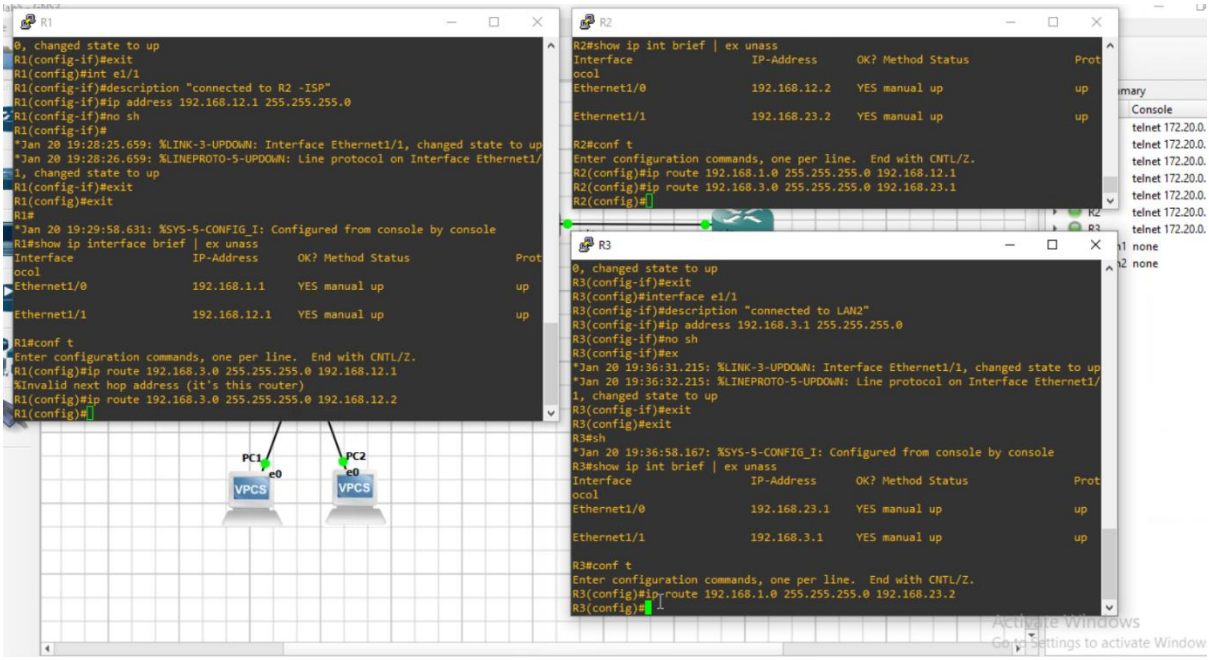
R3


R3
Jan 20 19:25:05.491: %LINK-5-CHANGED: Interface Ethernet1/7, changed state to a
dministratively down
3#
3#conf t
nter configuration commands, one per line.  End with CNTL/Z.
3(config)#interface e1/0
3(config-if)#description "connected to R2 - ISP"
3(config-if)#ip address 192.168.23.1 255.255.255.0
3(config-if)#no sh
3(config-if)#
Jan 20 19:35:34.867: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
Jan 20 19:35:35.867: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/
, changed state to up
3(config-if)#exit
3(config)#interface e1/1
3(config-if)#description "connected to LAN2"
3(config-if)#ip address 192.168.3.1 255.255.255.0
3(config-if)#no sh
3(config-if)#ex
Jan 20 19:36:31.215: %LINK-3-UPDOWN: Interface Ethernet1/1, changed state to up
Jan 20 19:36:32.215: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/
, changed state to up
3(config-if)#exit
3(config)#
R3
e1/0
e1/1
e1
e2
PC3
e0
PC4
e0
VPCS
VPCS

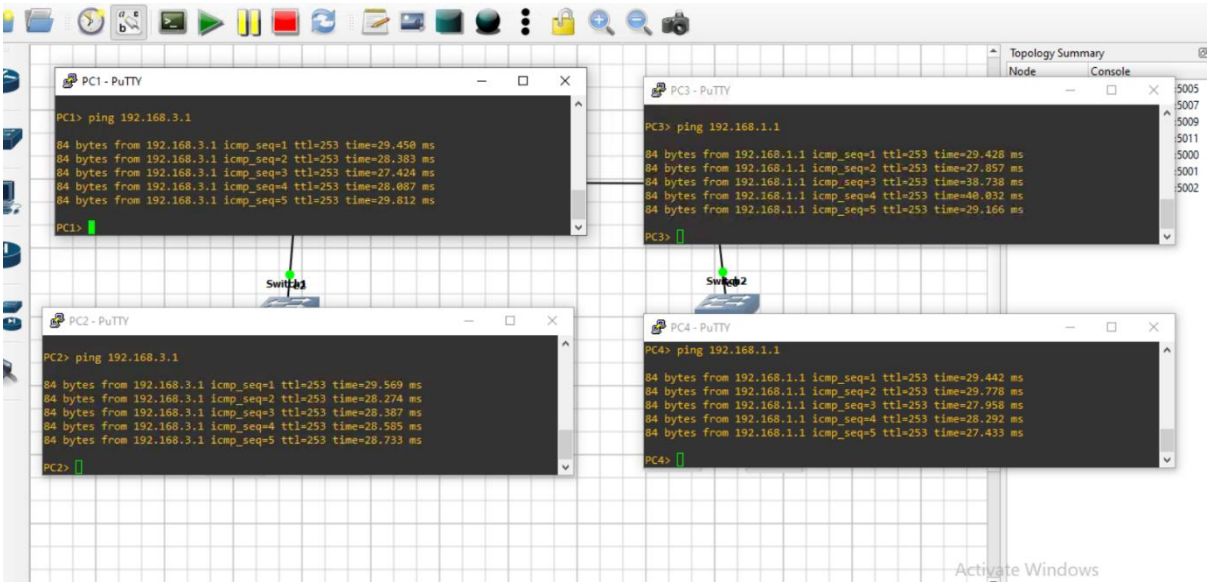
## PCS


lab5 - GNS3
File Edit View Control Node Annotate Tools Help
PC1 - PuTTY
Executing the startup file
PC1> ip 192.168.1.2 255.255.255.0 192.168.1.1
Checking for duplicate address...
PC1 : 192.168.1.2 255.255.255.0 gateway 192.168.1.1
PC1> ping 192.168.1.1
84 bytes from 192.168.1.1 icmp_seq=1 ttl=255 time=20.064 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=255 time=8.052 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=255 time=9.757 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=255 time=7.442 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=255 time=8.207 ms
PC1>
PC3 - PuTTY
Executing the startup file
PC3> ip 192.168.3.2 255.255.255.0 192.168.3.1
Checking for duplicate address...
PC3 : 192.168.3.2 255.255.255.0 gateway 192.168.3.1
PC3> ping 192.168.3.1
84 bytes from 192.168.3.1 icmp_seq=1 ttl=255 time=29.231 ms
84 bytes from 192.168.3.1 icmp_seq=2 ttl=255 time=2.777 ms
84 bytes from 192.168.3.1 icmp_seq=3 ttl=255 time=8.753 ms
84 bytes from 192.168.3.1 icmp_seq=4 ttl=255 time=7.780 ms
84 bytes from 192.168.3.1 icmp_seq=5 ttl=255 time=7.611 ms
PC3>
Switch1
PC2 - PuTTY
Executing the startup file
PC2> ip 192.168.1.3 255.255.255.0 192.168.1.1
Checking for duplicate address...
PC2 : 192.168.1.3 255.255.255.0 gateway 192.168.1.1
PC2> ping 192.168.1.1
84 bytes from 192.168.1.1 icmp_seq=1 ttl=255 time=9.647 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=255 time=8.277 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=255 time=8.429 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=255 time=7.765 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=255 time=7.784 ms
PC2>
PC4 - PuTTY
Executing the startup file
PC4> ip 192.168.3.3 255.255.255.0 192.168.3.1
Checking for duplicate address...
PC4 : 192.168.3.3 255.255.255.0 gateway 192.168.3.1
PC4> ping 192.168.3.1
84 bytes from 192.168.3.1 icmp_seq=1 ttl=255 time=9.692 ms
84 bytes from 192.168.3.1 icmp_seq=2 ttl=255 time=8.816 ms
84 bytes from 192.168.3.1 icmp_seq=3 ttl=255 time=8.288 ms
84 bytes from 192.168.3.1 icmp_seq=4 ttl=255 time=8.171 ms
84 bytes from 192.168.3.1 icmp_seq=5 ttl=255 time=7.888 ms
PC4>
Activate Windows
Type here to search
01:29
21-01-2026

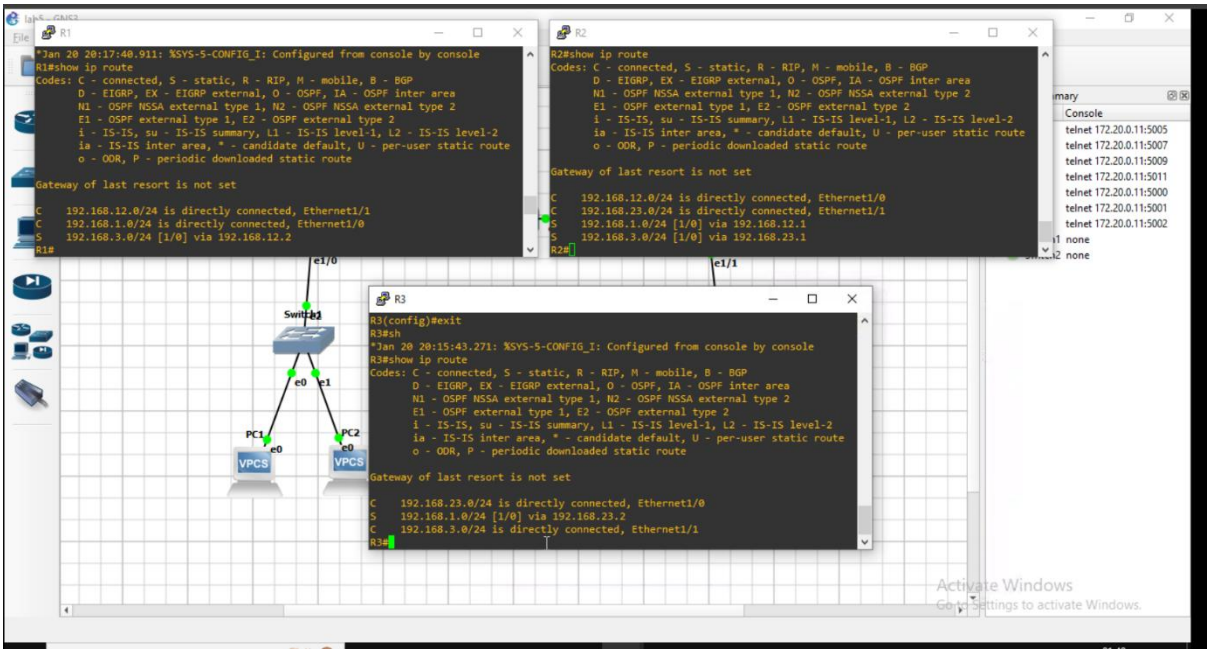
## Routers


R1
0, changed state to up
R1(config-if)#exit
R1(config)#int e1/1
R1(config-if)#description "connected to R2 -ISP"
R1(config-if)#ip address 192.168.12.1 255.255.255.0
R1(config-if)#no sh
R1(config-if)#
*Jan 20 19:28:25.659: %LINK-3-UPDOWN: Interface Ethernet1/1, changed state to up
*Jan 20 19:28:26.659: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/1, changed state to up
R1(config-if)#exit
R1(config)#exit
R1#
*Jan 20 19:29:58.631: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip interface brief | ex unass
Interface IP-Address OK? Method Status Protocol
Ethernet1/0 192.168.1.1 YES manual up up
Ethernet1/1 192.168.12.1 YES manual up up
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#ip route 192.168.3.0 255.255.255.0 192.168.12.1
%Invalid next hop address (it's this router)
R1(config)#ip route 192.168.3.0 255.255.255.0 192.168.12.2
R1(config)#
R2
R2#show ip int brief | ex unass
Interface IP-Address OK? Method Status Protocol
Ethernet1/0 192.168.12.2 YES manual up up
Ethernet1/1 192.168.23.2 YES manual up up
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#ip route 192.168.1.0 255.255.255.0 192.168.12.1
R2(config)#ip route 192.168.3.0 255.255.255.0 192.168.23.1
R2(config)#
R3
0, changed state to up
R3(config-if)#exit
R3(config)#interface e1/1
R3(config-if)#description "connected to LAN2"
R3(config-if)#ip address 192.168.3.1 255.255.255.0
R3(config-if)#no sh
R3(config-if)#ex
*Jan 20 19:36:31.215: %LINK-3-UPDOWN: Interface Ethernet1/1, changed state to up
*Jan 20 19:36:32.215: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/1, changed state to up
R3(config-if)#exit
R3(config)#exit
R3#sh
*Jan 20 19:36:58.167: %SYS-5-CONFIG_I: Configured from console by console
R3#show ip int brief | ex unass
Interface IP-Address OK? Method Status Protocol
Ethernet1/0 192.168.23.1 YES manual up up
Ethernet1/1 192.168.3.1 YES manual up up
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#ip route 192.168.1.0 255.255.255.0 192.168.23.2
R3(config)#
PC1
e0
VPCS
PC2
e0
VPCS
Console
telnet 172.20.0.
Activate Windows

## PCS

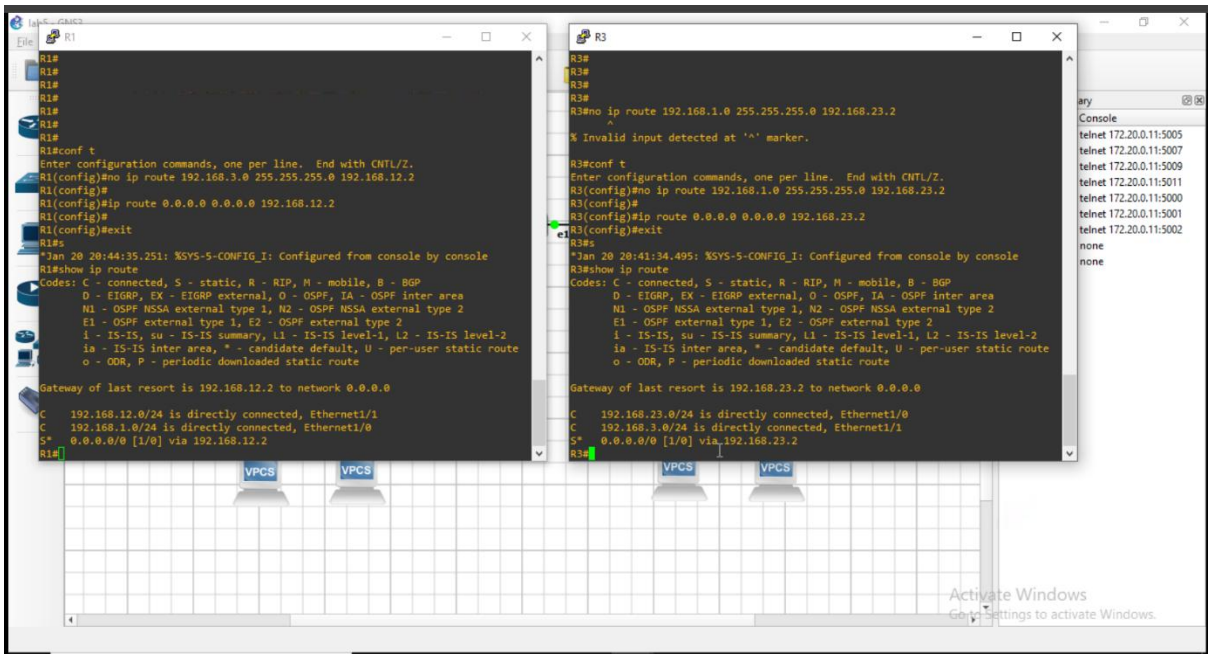

PC1 - PuTTY
PC1> ping 192.168.3.1
84 bytes from 192.168.3.1 icmp_seq=1 ttl=253 time=29.450 ms
84 bytes from 192.168.3.1 icmp_seq=2 ttl=253 time=28.383 ms
84 bytes from 192.168.3.1 icmp_seq=3 ttl=253 time=27.424 ms
84 bytes from 192.168.3.1 icmp_seq=4 ttl=253 time=28.087 ms
84 bytes from 192.168.3.1 icmp_seq=5 ttl=253 time=29.812 ms
PC1>
PC3 - PuTTY
PC3> ping 192.168.1.1
84 bytes from 192.168.1.1 icmp_seq=1 ttl=253 time=29.428 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=253 time=27.857 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=253 time=38.738 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=253 time=40.032 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=253 time=29.166 ms
PC3>
PC2 - PuTTY
PC2> ping 192.168.3.1
84 bytes from 192.168.3.1 icmp_seq=1 ttl=253 time=29.569 ms
84 bytes from 192.168.3.1 icmp_seq=2 ttl=253 time=28.274 ms
84 bytes from 192.168.3.1 icmp_seq=3 ttl=253 time=28.387 ms
84 bytes from 192.168.3.1 icmp_seq=4 ttl=253 time=28.585 ms
84 bytes from 192.168.3.1 icmp_seq=5 ttl=253 time=28.733 ms
PC2>
PC4 - PuTTY
PC4> ping 192.168.1.1
84 bytes from 192.168.1.1 icmp_seq=1 ttl=253 time=29.442 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=253 time=29.778 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=253 time=27.958 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=253 time=28.292 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=253 time=27.433 ms
PC4>
Topology Summary
Node
Console
Activate Windows

## Routers

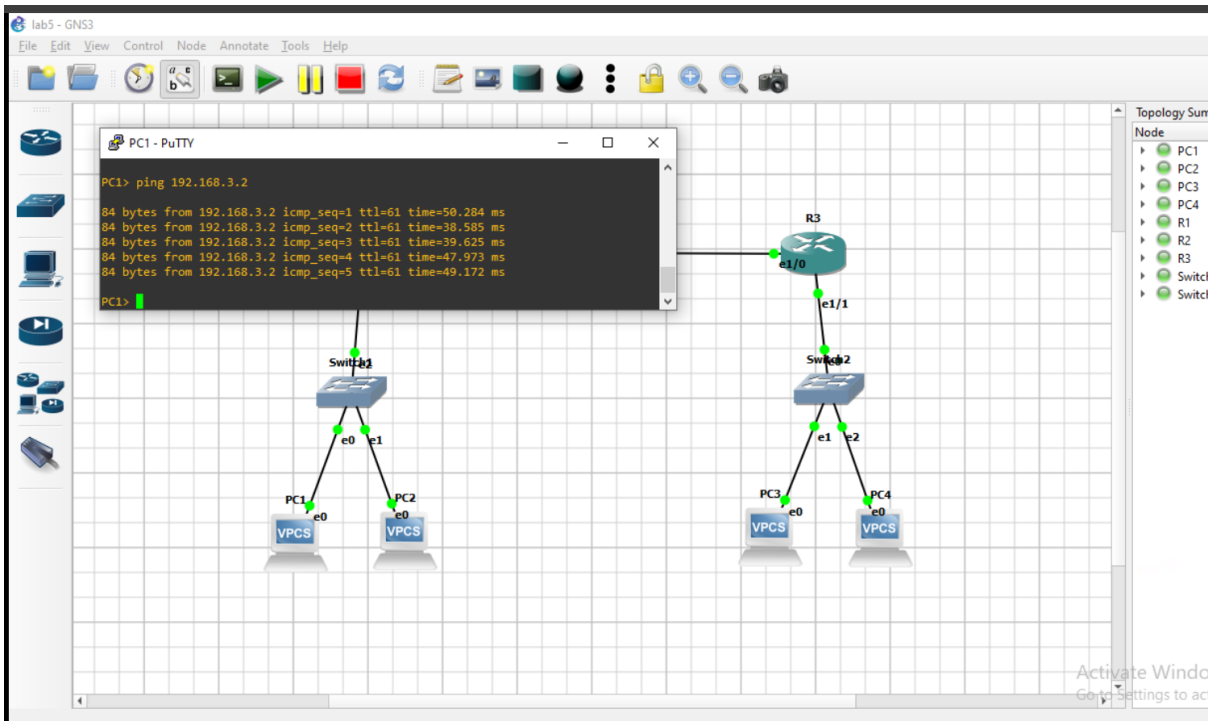

R1
*Jan 20 20:17:40.911: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route
Gateway of last resort is not set
C 192.168.12.0/24 is directly connected, Ethernet1/1
C 192.168.1.0/24 is directly connected, Ethernet1/0
S 192.168.3.0/24 [1/0] via 192.168.12.2
R1#
R2
R2#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route
Gateway of last resort is not set
C 192.168.12.0/24 is directly connected, Ethernet1/0
C 192.168.23.0/24 is directly connected, Ethernet1/1
S 192.168.1.0/24 [1/0] via 192.168.12.1
S 192.168.3.0/24 [1/0] via 192.168.23.1
R2#
R3
R3(config)#exit
R3#sh
*Jan 20 20:15:43.271: %SYS-5-CONFIG_I: Configured from console by console
R3#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2
i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
ia - IS-IS inter area, * - candidate default, U - per-user static route
o - ODR, P - periodic downloaded static route
Gateway of last resort is not set
C 192.168.23.0/24 is directly connected, Ethernet1/0
S 192.168.1.0/24 [1/0] via 192.168.23.2
C 192.168.3.0/24 is directly connected, Ethernet1/1
R3#
e1/0
e1/1
e0
e1
PC1
PC2
VPCS
Console
telnet 172.20.0.11:5005
telnet 172.20.0.11:5007
telnet 172.20.0.11:5009
telnet 172.20.0.11:5011
telnet 172.20.0.11:5000
telnet 172.20.0.11:5001
telnet 172.20.0.11:5002
Activate Windows

## 2. DEFAULT ROUTING

### Routers

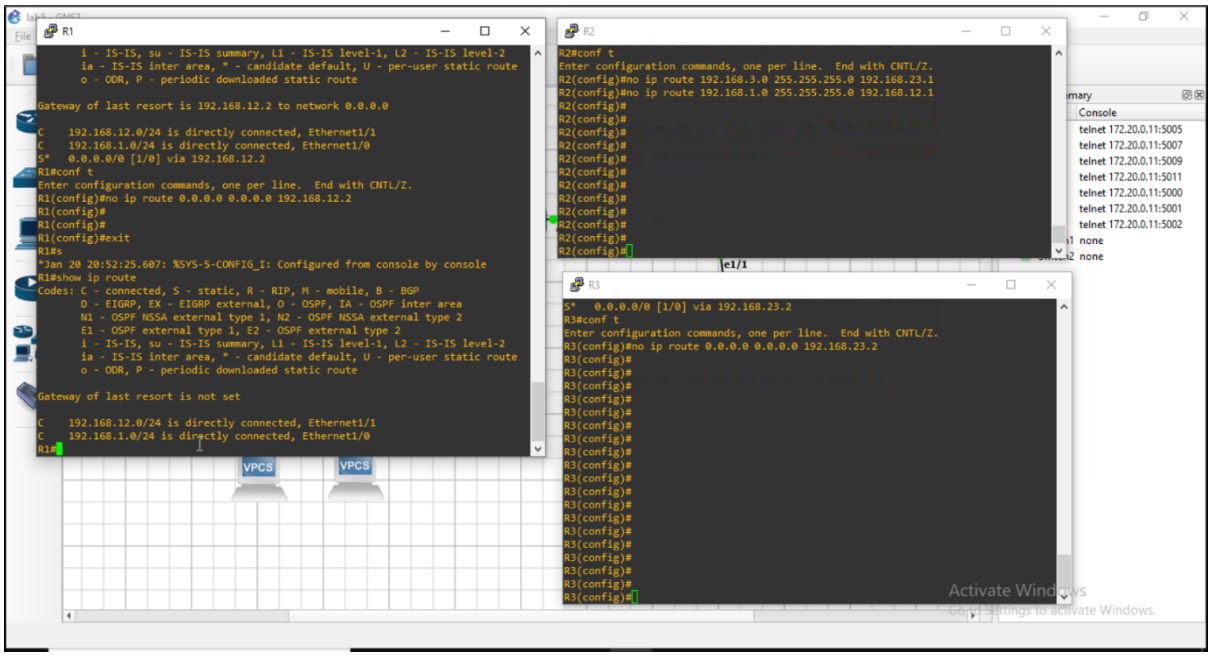



### PC1

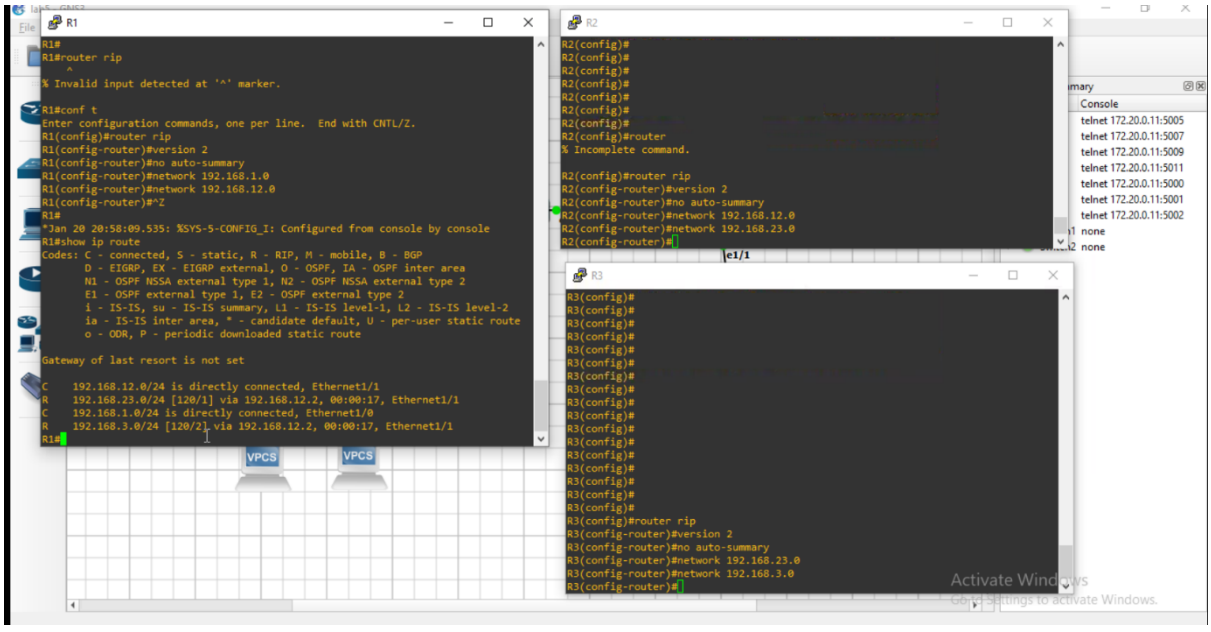


## 3. RIPv2

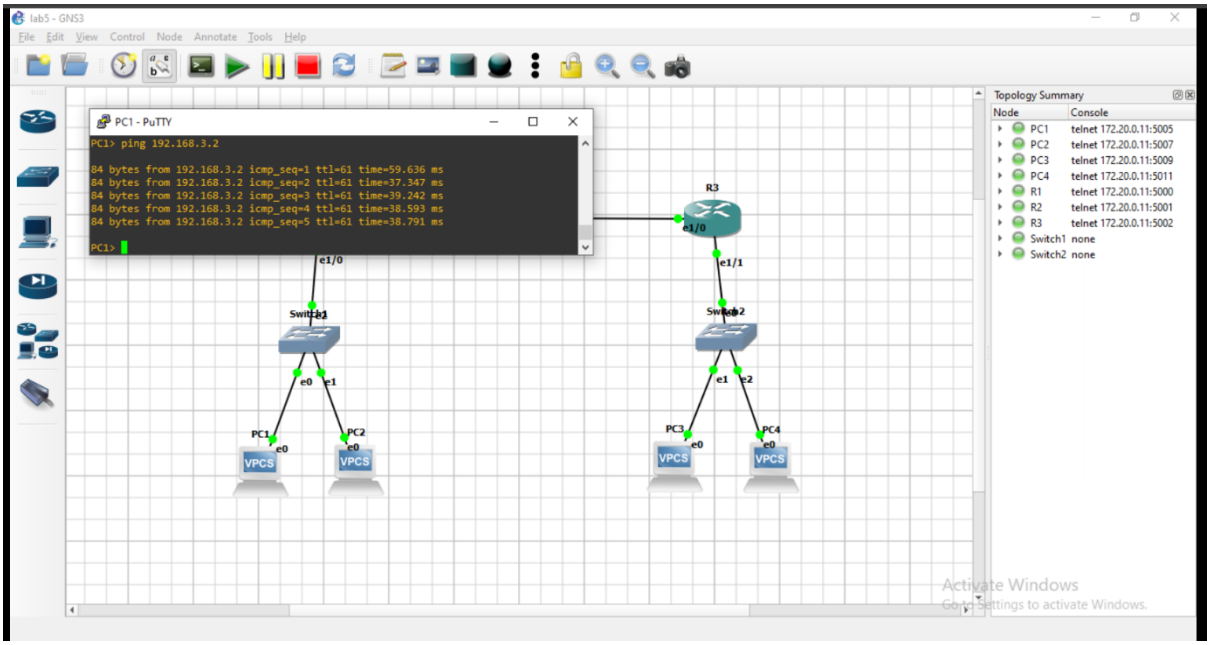
### REMOVE OLD CONNECTIONS




### DYNAMIC ROUTING

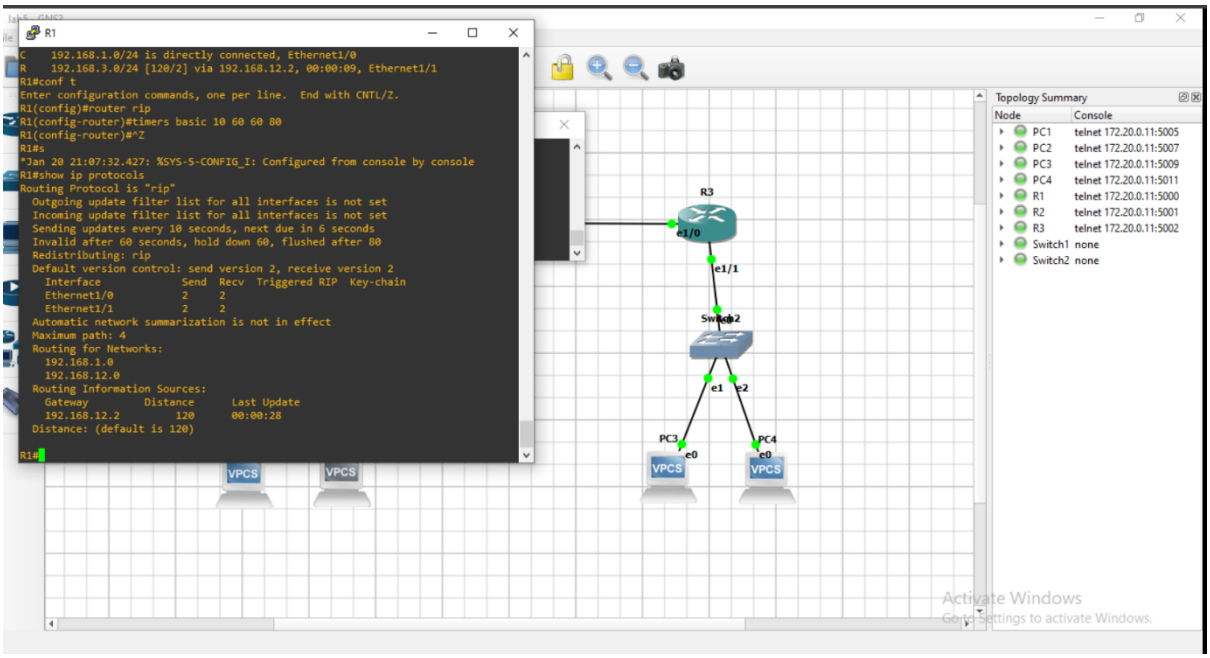


PC




## 4. RIPv2 TIMERS

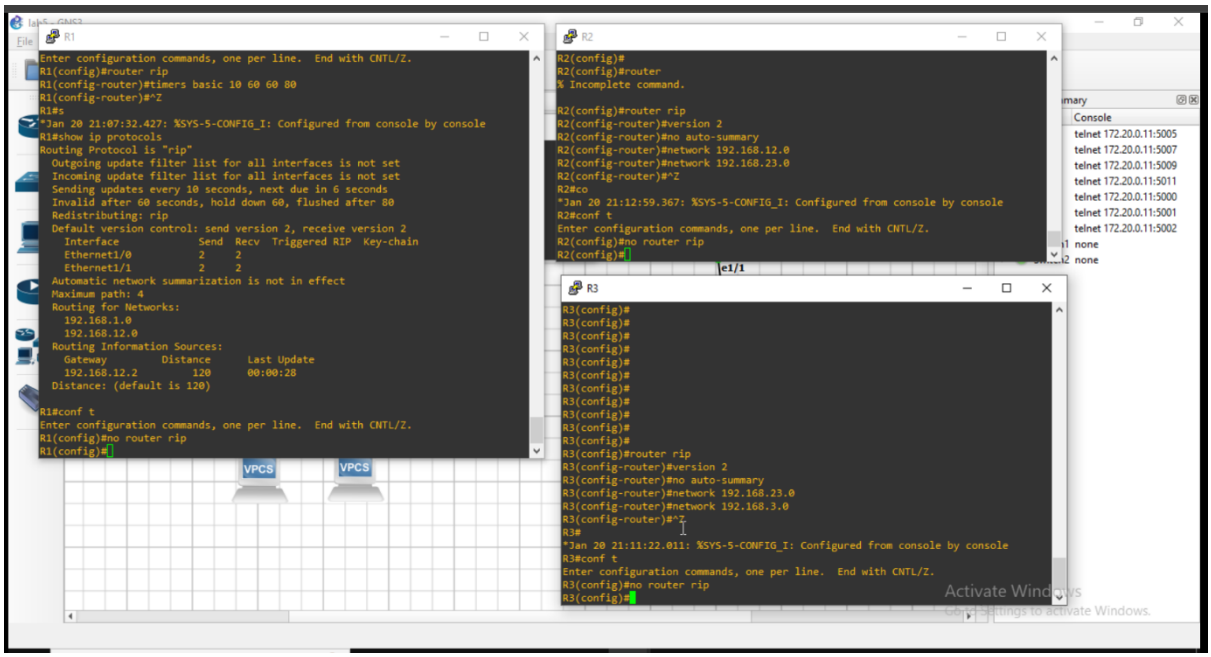
ROUTING



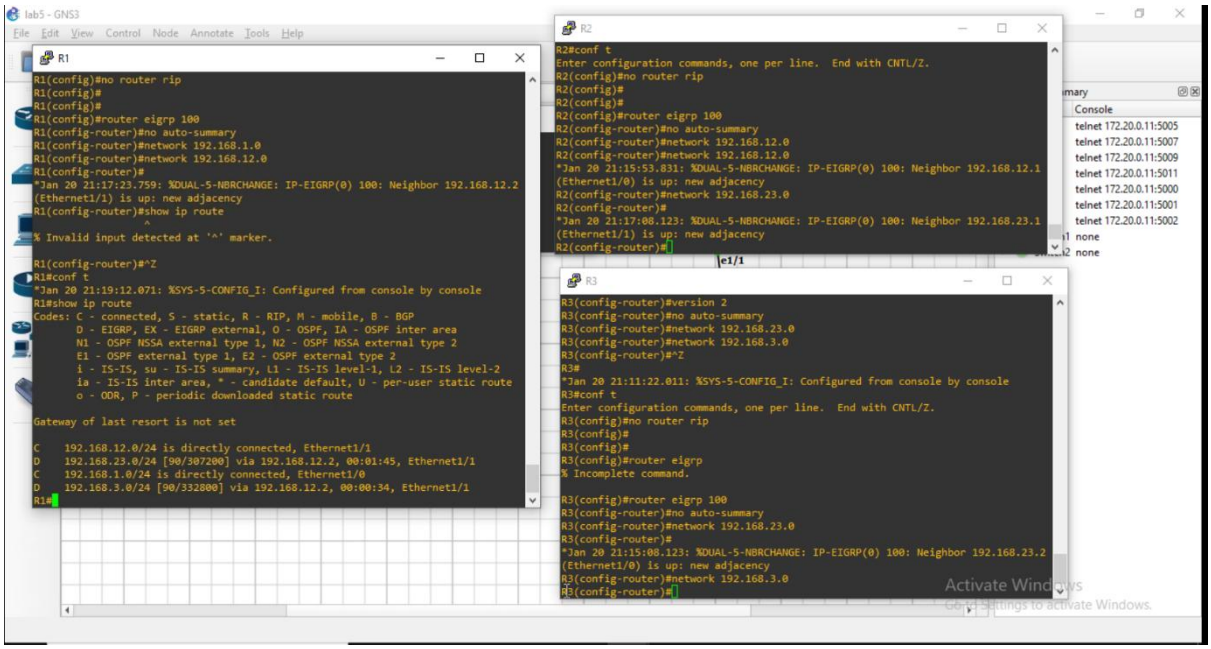
## 5. EIGRP

Router

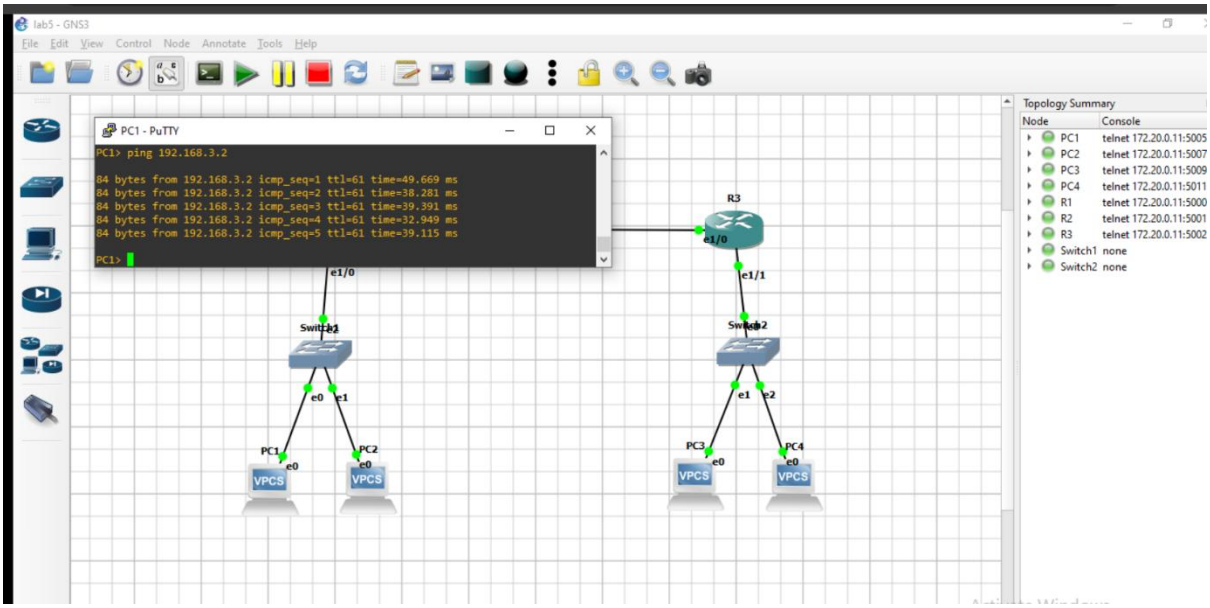
Remove old configuration and then start




Eigrp config



Pc1


lab5 - GNS3
File Edit View Control Node Annotate Tools Help
PC1 - PuTTY
PC1> ping 192.168.3.2
84 bytes from 192.168.3.2 icmp_seq=1 ttl=61 time=49.669 ms
84 bytes from 192.168.3.2 icmp_seq=2 ttl=61 time=38.281 ms
84 bytes from 192.168.3.2 icmp_seq=3 ttl=61 time=39.391 ms
84 bytes from 192.168.3.2 icmp_seq=4 ttl=61 time=32.949 ms
84 bytes from 192.168.3.2 icmp_seq=5 ttl=61 time=39.115 ms
PC1>
Topology Summary
Node Console
PC1 telnet 172.20.0.11:5005
PC2 telnet 172.20.0.11:5007
PC3 telnet 172.20.0.11:5009
PC4 telnet 172.20.0.11:5011
R1 telnet 172.20.0.11:5000
R2 telnet 172.20.0.11:5001
R3 telnet 172.20.0.11:5002
Switch1 none
Switch2 none
R3
e1/0
e1/1
e0
e1
e2
PC1
PC2
PC3
PC4
VPCS