

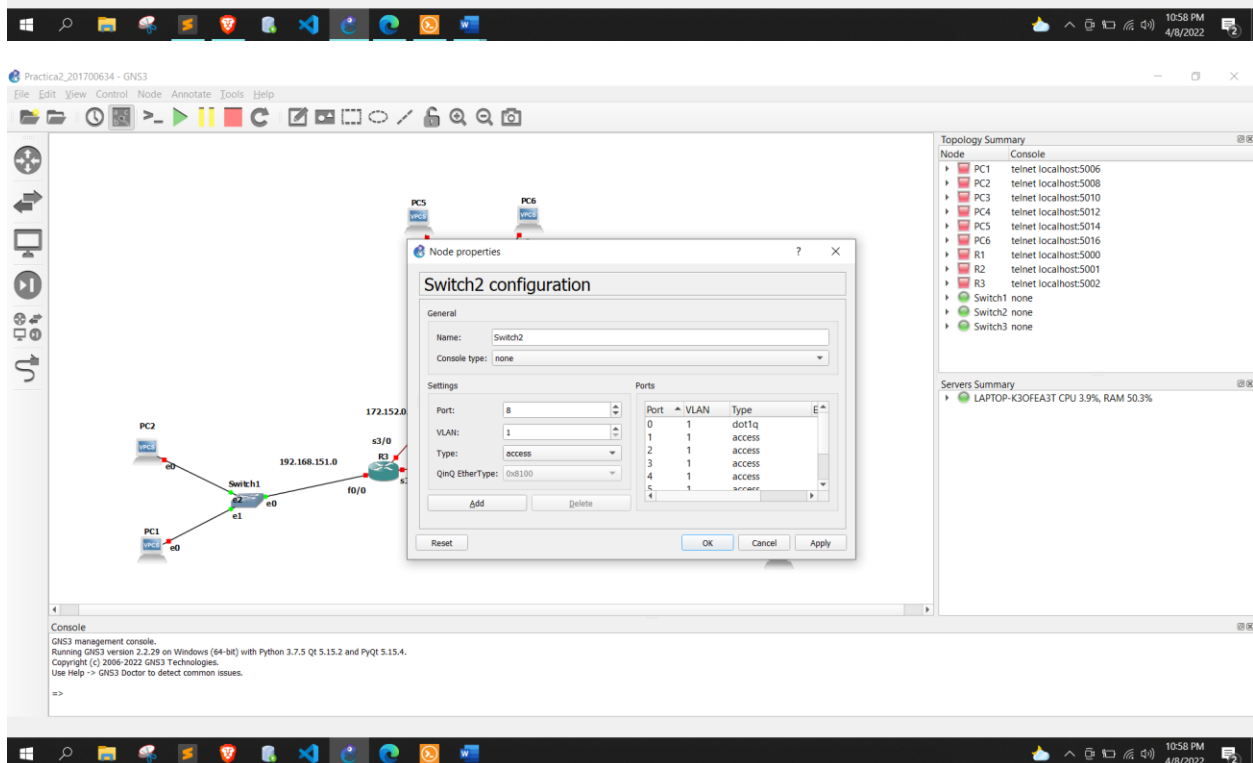
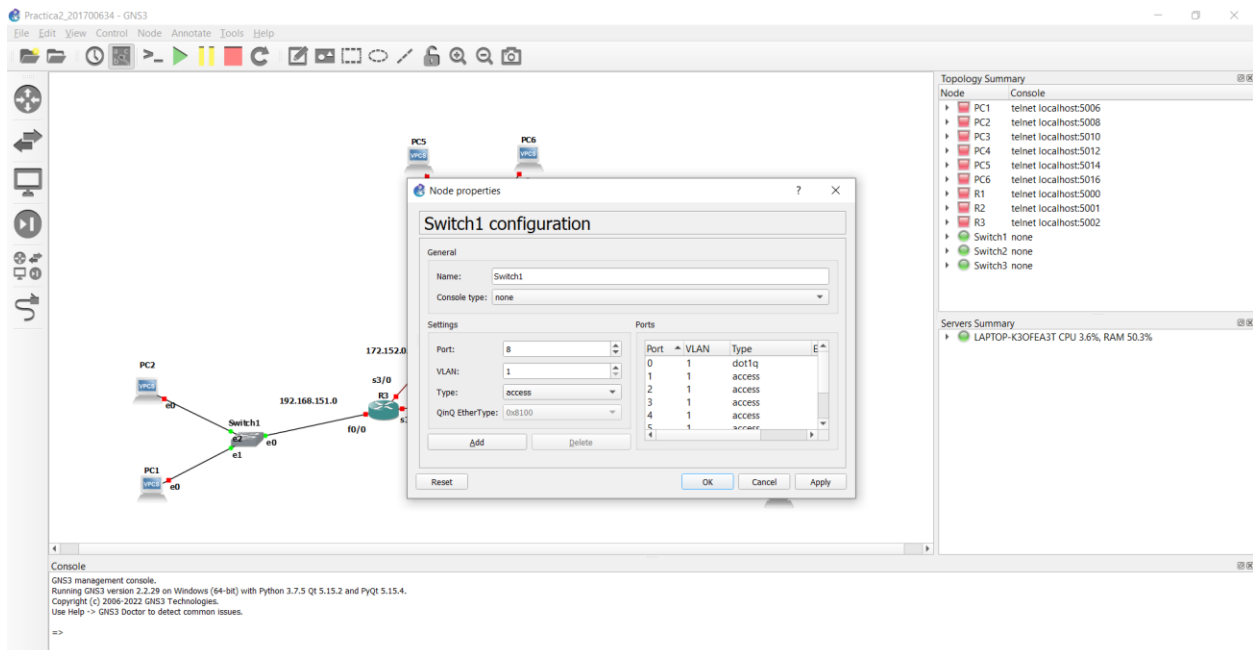
La X significa el [Número de Grupo + 2 Últimos Números de su carnet]

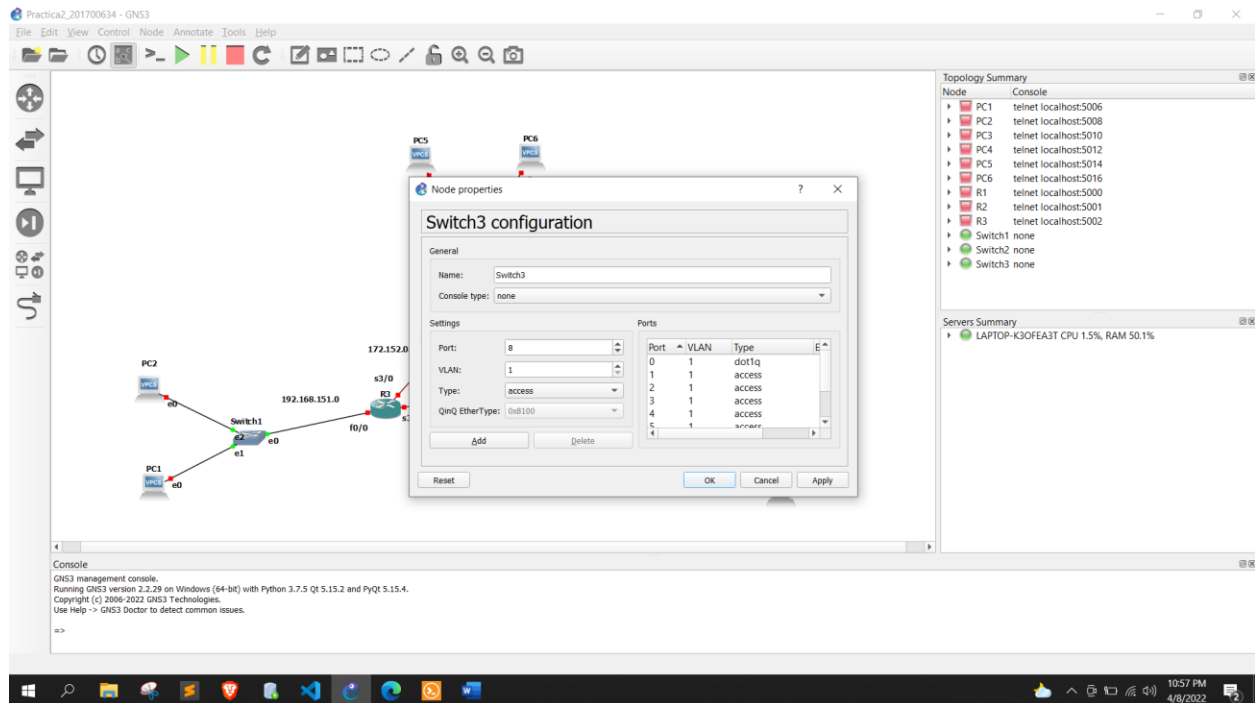
				201700634		
x	=	8	+	3	+	4
x	=	15				

TOPOLOGIA	DIRECCION IP	GATEWAY
1	192.168.151.10/24	192.168.151.1
2	192.168.151.20/24	192.168.151.1
3	192.168.152.10/24	192.168.152.1
4	192.168.152.20/24	192.168.152.1
5	192.168.153.10/24	192.168.153.1
6	192.168.153.20/24	192.168.153.1

TOPOLOGIA	DIRECCION DE RED	PRIMERA DIRECCION ASIGNABLE	GATEWAY
R1-R2	172.151.0.0/16	172.151.0.1	N.A.
R1-R3	172.152.0.0/16	172.152.0.1	N.A.
R3-R2	172.153.0.0/16	172.153.0.1	N.A.

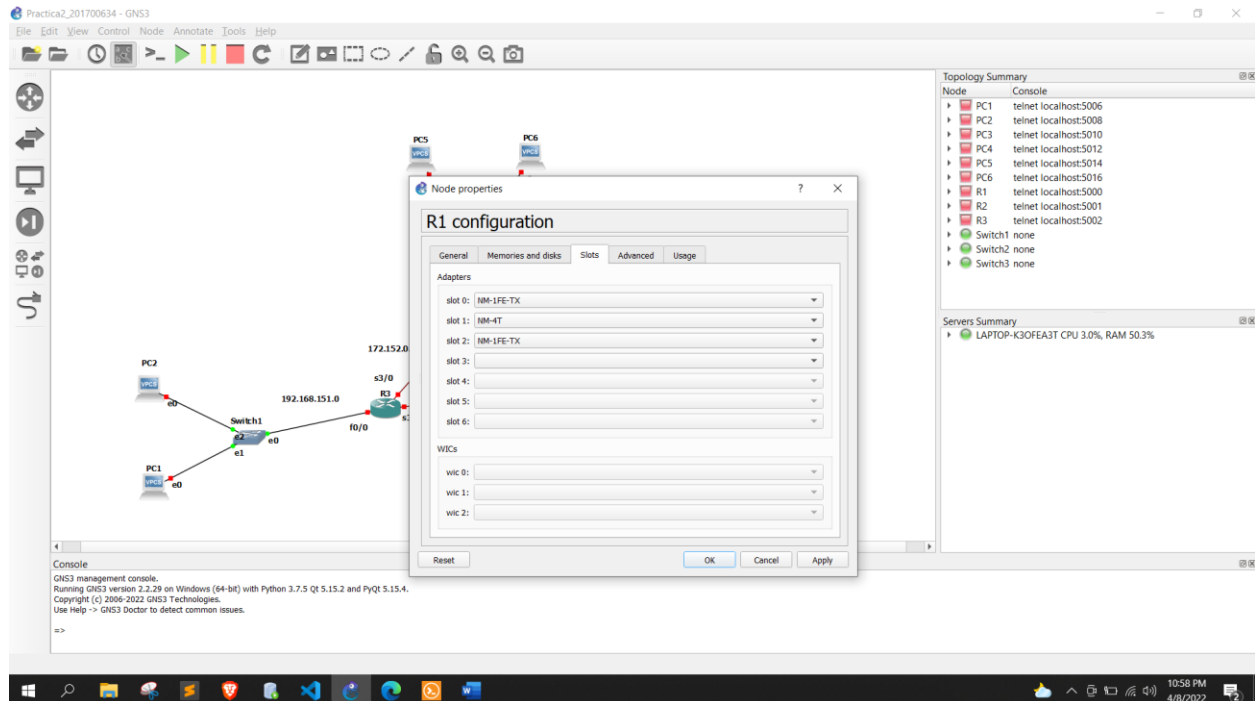
# CONFIGURAMOS EL PUERTO EN LOS SWITCHES PARA PONERLOS EN MODOS TRUNCAL





## CONFIGURAMOS EL MODO DE FASTHETERNET Y PUERTOS SERIAL EN CADA ROUTER

- el Router con Seriales en el Slot 1



## el Router con Seriales en el Slot 2

The screenshot shows the GNS3 management console with a network topology. A central router R2 is connected to a switch (Switch1) and a laptop (LAPTOP-K3OFEA3T). The switch is connected to two PCs (PC1 and PC2). The router R2 has a serial interface (s3/0) connected to a laptop (LAPTOP-K3OFEA3T) with IP 172.152.0. The router R2 has a serial interface (s1/0) connected to a switch (Switch1) with IP 192.168.151.0. The router R2 has a serial interface (s2/0) connected to a switch (Switch1) with IP 192.168.151.0. The router R2 has a serial interface (s3/0) connected to a laptop (LAPTOP-K3OFEA3T) with IP 172.152.0. The router R2 has a serial interface (s4/0) connected to a switch (Switch1) with IP 192.168.151.0. The router R2 has a serial interface (s5/0) connected to a switch (Switch1) with IP 192.168.151.0. The router R2 has a serial interface (s6/0) connected to a switch (Switch1) with IP 192.168.151.0.

The "Node properties" window for R2 is open, showing the "Adapters" tab. The configuration is as follows:

Slot	Adapter
slot 0	NM-1FE-TX
slot 1	NM-1FE-TX
slot 2	NM-4T
slot 3	
slot 4	
slot 5	
slot 6	

The "WICs" tab is also visible, showing the configuration for WIC 0, WIC 1, and WIC 2.

The "Topology Summary" window on the right shows the following nodes:

Node	Console
PC1	telnet localhost:5006
PC2	telnet localhost:5008
PC3	telnet localhost:5010
PC4	telnet localhost:5012
PC5	telnet localhost:5014
PC6	telnet localhost:5016
R1	telnet localhost:5000
R2	telnet localhost:5001
R3	telnet localhost:5002
Switch1	none
Switch2	none
Switch3	none

The "Servers Summary" window on the right shows the following servers:

Servers	CPU	RAM
LAPTOP-K3OFEA3T	2.2%	50.5%

- el Router con Seriales en el Slot 3

The screenshot shows the GNS3 management console with a network topology. A central router R3 is connected to a switch (Switch1) and a laptop (LAPTOP-K3OFEA3T). The switch is connected to two PCs (PC1 and PC2). The router R3 has a serial interface (s3/0) connected to a laptop (LAPTOP-K3OFEA3T) with IP 172.152.0. The router R3 has a serial interface (s1/0) connected to a switch (Switch1) with IP 192.168.151.0. The router R3 has a serial interface (s2/0) connected to a switch (Switch1) with IP 192.168.151.0. The router R3 has a serial interface (s4/0) connected to a switch (Switch1) with IP 192.168.151.0. The router R3 has a serial interface (s5/0) connected to a switch (Switch1) with IP 192.168.151.0. The router R3 has a serial interface (s6/0) connected to a switch (Switch1) with IP 192.168.151.0.

The "Node properties" window for R3 is open, showing the "Adapters" tab. The configuration is as follows:

Slot	Adapter
slot 0	NM-1FE-TX
slot 1	NM-1FE-TX
slot 2	NM-1FE-TX
slot 3	NM-4T
slot 4	
slot 5	
slot 6	

The "WICs" tab is also visible, showing the configuration for WIC 0, WIC 1, and WIC 2.

The "Topology Summary" window on the right shows the following nodes:

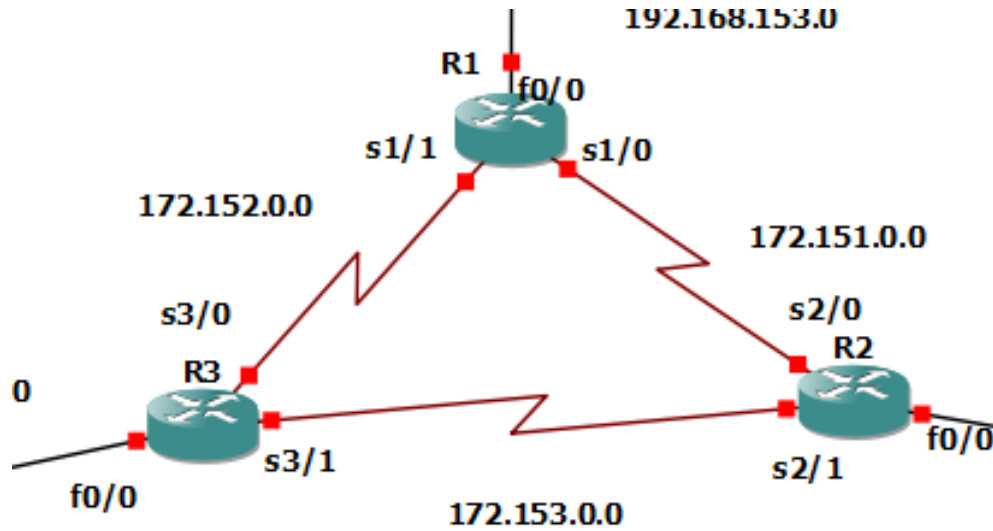
Node	Console
PC1	telnet localhost:5006
PC2	telnet localhost:5008
PC3	telnet localhost:5010
PC4	telnet localhost:5012
PC5	telnet localhost:5014
PC6	telnet localhost:5016
R1	telnet localhost:5000
R2	telnet localhost:5001
R3	telnet localhost:5002
Switch1	none
Switch2	none
Switch3	none

The "Servers Summary" window on the right shows the following servers:

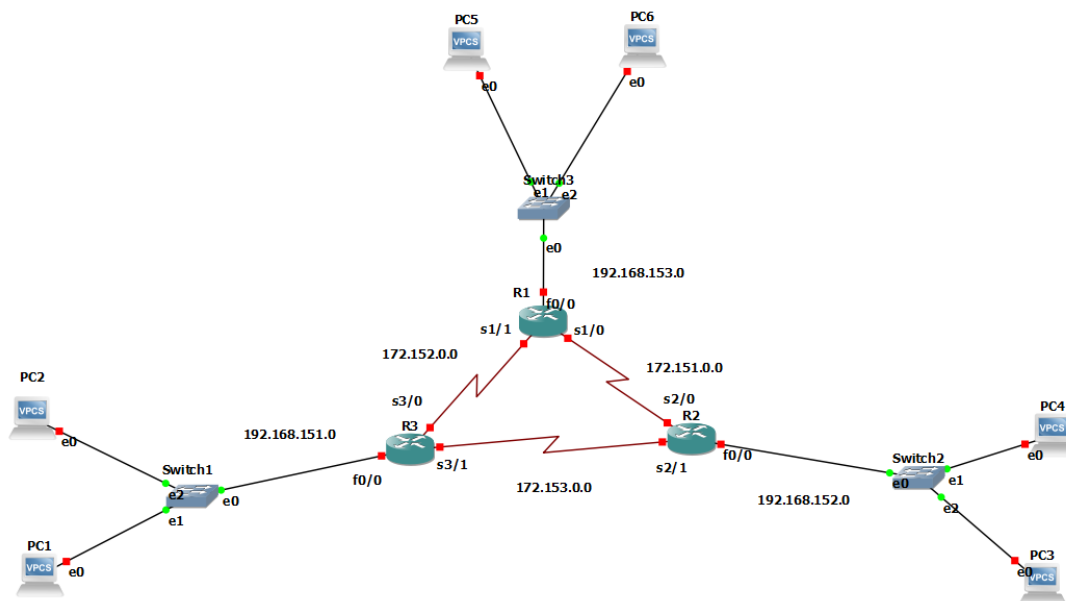
Servers	CPU	RAM
LAPTOP-K3OFEA3T	3.2%	50.6%

conectar los Routers de esta manera:

- R1 – R2 **S1/0 – S2/0**
- R1 – R3 **S1/1 – S3/0**
- R2 – R3 **S2/1 – S3-1**



CONFIGURAMOS TODOS LA CONECCIONES DE LA SIGUIENTE MANERA:



## **COMANDOS:**

### **VPCs**

VPC1

ip 192.168.151.10/24 192.168.151.1

save

VPC 2

ip 192.168.151.20/24 192.168.151.1

save

VPC 3

ip 192.168.152.10/24 192.168.152.1

save

VPC 4

ip 192.168.152.20/24 192.168.152.1

save

VPC 5

ip 192.168.153.10/24 192.168.153.1

save

VPC 6

ip 192.168.153.20/24 192.168.153.1

save

## **Routers (Interfaces de comunicación con SWITCHES)**

### **R1**

configure terminal

int f0/0

ip address 192.168.153.1 255.255.255.0

no shutdown

exit

### **R2**

configure terminal

int f0/0

ip address 192.168.152.1 255.255.255.0

no shutdown

exit

### **R3**

configure terminal

int f0/0

ip address 192.168.151.1 255.255.255.0

no shutdown

exit

## **Routers (Interfaces de comunicación con VPCs)**

### **R1 - R2**

```
configure terminal  
int s1/0  
ip address 172.151.0.1 255.255.0.0  
no shutdown  
exit
```

### **R2 - R1**

```
configure terminal  
int s2/0  
ip address 172.151.0.2 255.255.0.0  
no shutdown  
exit
```

### **R1 - R3**

```
configure terminal  
int s1/1  
ip address 172.152.0.1 255.255.0.0  
no shutdown  
exit
```

### **R3 - R1**

```
configure terminal  
int s3/0  
ip address 172.152.0.2 255.255.0.0  
no shutdown  
exit
```



### **R3 - R2**

configure terminal

int s3/1

ip address 172.153.0.1 255.255.0.0

no shutdown

exit

### **R2 - R3**

configure terminal

int s2/1

ip address 172.153.0.2 255.255.0.0

no shutdown

exit

### **PINGS**

**1**

**ping 192.168.151.10**

**2**

**ping 192.168.151.20**

**3**

**ping 192.168.152.10**

**4**

**ping 192.168.152.20**

**5**

**ping 192.168.153.10**

**6**

**ping 192.168.153.20**

## **Routers (Enrutamiento estático)**

### **R1 - R2**

```
conf t
ip route 192.168.152.0 255.255.255.0 172.151.0.2
exit
```

### **R2 - R1**

```
conf t
ip route 192.168.153.0 255.255.255.0 172.151.0.1
exit
```

### **R1 - R3**

```
conf t
ip route 192.168.151.0 255.255.255.0 172.152.0.2
exit
```

### **R3 - R1**

```
conf t
ip route 192.168.153.0 255.255.255.0 172.152.0.1
exit
```

### **R3 - R2**

```
conf t
ip route 192.168.152.0 255.255.255.0 172.153.0.2
exit
```

### **R2 - R3**

```
conf t
ip route 192.168.151.0 255.255.255.0 172.153.0.1
exit
```

## ROUTER 1

- sh ip int br
- sh ip ro

```
R1#
R1#sh ip ro
Warning: Assumed end-quote for quoted string% Unknown command or computer name, or unable to find computer address
R1#b^@
% Incomplete command.

R1#
R1#sh ip ro
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

S   192.168.151.0/24 [1/0] via 172.152.0.2
C   172.152.0.0/16 is directly connected, Serial1/1
C   172.151.0.0/16 is directly connected, Serial1/0
C   192.168.153.0/24 is directly connected, FastEthernet0/0
S   192.168.152.0/24 [1/0] via 172.151.0.2
R1#sh ip int br
Interface      IP-Address      OK? Method Status      Protocol
FastEthernet0/0 192.168.153.1   YES NVRAM   up          up
Serial1/0       172.151.0.1     YES NVRAM   up          up
Serial1/1       172.152.0.1     YES NVRAM   up          up
Serial1/2       unassigned      YES NVRAM   administratively down down
Serial1/3       unassigned      YES NVRAM   administratively down down
FastEthernet2/0 unassigned      YES NVRAM   administratively down down
R1#sh ip ro
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

S   192.168.151.0/24 [1/0] via 172.152.0.2
C   172.152.0.0/16 is directly connected, Serial1/1
C   172.151.0.0/16 is directly connected, Serial1/0
C   192.168.153.0/24 is directly connected, FastEthernet0/0
S   192.168.152.0/24 [1/0] via 172.151.0.2
R1#
```

## ROUTER 2

- sh ip int br
- sh ip ro

```

R1 R2 R3
*Mar 1 00:00:03.235: %LINK-5-CHANGED: Interface FastEthernet1/0, changed state
to administratively down
*Mar 1 00:00:03.235: %LINK-3-UPDOWN: Interface Serial2/0, changed state to up
*Mar 1 00:00:03.235: %LINK-3-UPDOWN: Interface Serial2/1, changed state to up
*Mar 1 00:00:03.247: %LINK-5-CHANGED: Interface Serial2/2, changed state to adm
inistratively down
*Mar 1 00:00:03.247: %LINK-5-CHANGED: Interface Serial2/3, changed state to adm
inistratively down
*Mar 1 00:00:04.187: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et0/0, changed state to up
*Mar 1 00:00:04.235: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthern
et1/0, changed state to down
*Mar 1 00:00:04.235: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0,
changed state to up
*Mar 1 00:00:04.235: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/1,
changed state to up
*Mar 1 00:00:04.247: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/2,
changed state to down
*Mar 1 00:00:04.247: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/3,
changed state to down
R2#
R2#sh ip int br
Interface IP-Address OK? Method Status Protocol
FastEthernet0/0 192.168.152.1 YES NVRAM up up
FastEthernet1/0 unassigned YES NVRAM administratively down down
Serial2/0 172.151.0.2 YES NVRAM up up
Serial2/1 172.153.0.2 YES NVRAM up up
Serial2/2 unassigned YES NVRAM administratively down down
Serial2/3 unassigned YES NVRAM administratively down down
R2#sh ip ro
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

S 192.168.151.0/24 [1/0] via 172.153.0.1
[1/0] via 172.151.0.1
C 172.153.0.0/16 is directly connected, Serial2/1
C 172.151.0.0/16 is directly connected, Serial2/0
S 192.168.153.0/24 [1/0] via 172.153.0.1
[1/0] via 172.151.0.1
C 192.168.152.0/24 is directly connected, FastEthernet0/0
R2#
```

## ROUTER 3

- sh ip int br
- sh ip ro

```

R1 R2 R3
to administratively down
*Mar 1 00:00:03.259: %LINK-3-UPDOWN: Interface Serial3/0, changed state to up
*Mar 1 00:00:03.263: %LINK-3-UPDOWN: Interface Serial3/1, changed state to up
*Mar 1 00:00:03.267: %LINK-5-CHANGED: Interface Serial3/2, changed state to administratively down
*Mar 1 00:00:03.267: %LINK-5-CHANGED: Interface Serial3/3, changed state to administratively down
*Mar 1 00:00:04.251: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
*Mar 1 00:00:04.251: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to down
*Mar 1 00:00:04.255: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet2/0, changed state to down
*Mar 1 00:00:04.259: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/0, changed state to up
*Mar 1 00:00:04.263: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/1, changed state to up
*Mar 1 00:00:04.267: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/2, changed state to down
*Mar 1 00:00:04.267: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial3/3, changed state to down
R3#
R3#sh ip int br
Interface                IP-Address      OK? Method Status      Protocol
FastEthernet0/0          192.168.151.1   YES NVRAM   up          up
FastEthernet1/0          unassigned      YES NVRAM   administratively down down
FastEthernet2/0          unassigned      YES NVRAM   administratively down down
Serial3/0                 172.152.0.2     YES NVRAM   up          up
Serial3/1                 172.153.0.1     YES NVRAM   up          up
Serial3/2                 unassigned      YES NVRAM   administratively down down
Serial3/3                 unassigned      YES NVRAM   administratively down down
R3#sh ip ro
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    192.168.151.0/24 is directly connected, FastEthernet0/0
C    172.153.0.0/16 is directly connected, Serial3/1
C    172.152.0.0/16 is directly connected, Serial3/0
S    192.168.153.0/24 [1/0] via 172.152.0.1
S    192.168.152.0/24 [1/0] via 172.153.0.2
R3#
```

## PINGS

The screenshot displays a GNS3 virtual network simulation environment. The interface is divided into several sections:

- Top Bar:** Shows the application name "Practica2\_201700634 - GNS3" and standard file editing menus (File, Edit, View, Control, Node, Annotate, Tools, Help).
- Terminal Window (Left):** Displays the command-line interface for PC1. The user has entered the following commands:

```
ip 192.168.153.20/24 192.168.151.10
save
ping 192.168.153.20
PINGS
1
ping 192.168.151.10
2
ping 192.168.151.20
3
ping 192.168.152.10
4
ping 192.168.152.20
5
ping 192.168.153.10
6
ping 192.168.153.20
```

The terminal output shows the execution of these commands, including IP address assignment, saving the configuration, and successful ping results to various destinations. It also shows a "Checking for duplicate address..." message and a "gateway 192.168.151.1" assignment.
- Network Topology Diagram (Center):** A visual representation of the network. It shows three PCs (PC1, PC2, PC3) connected to three switches (S1, S2, S3) and three routers (R1, R2, R3). The connections are color-coded: red for PC1, green for PC2, and blue for PC3. The routers are connected in a mesh topology.
- Console Window (Right):** Displays the GNS3 management console output. It shows the GNS3 version (2.2.29) and the Python version (3.7.5 Qt 5.15.2 and PyQt 5.15.4). It also includes a copyright notice for 2006-2022 GNS3 Technologies and a link to the GNS3 website.

The bottom of the image shows a taskbar with various application icons, including the Windows Start button, File Explorer, and several web browsers. The system clock indicates the time is 11:31 PM on 4/8/2022.