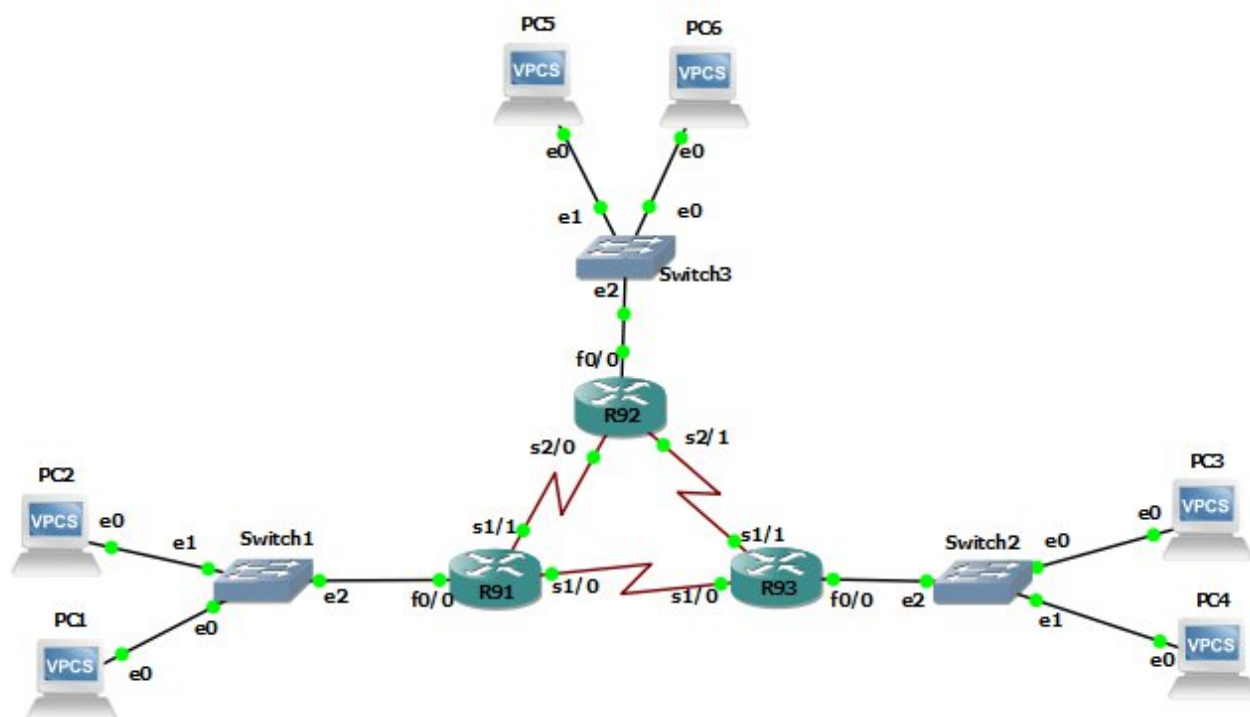


Manual técnico

Practica 2

Diagrama de la configuración de red.

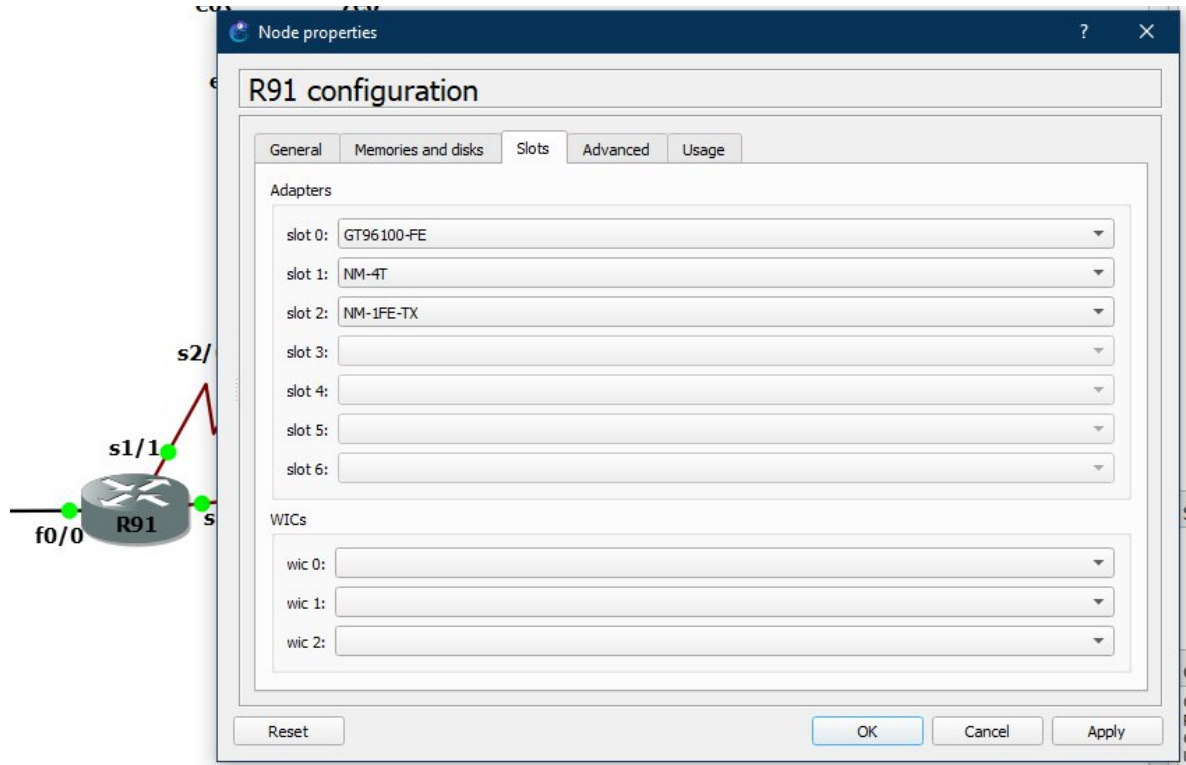


Generar o activar las conexiones seriales de cada switch

Click derecho sobre el switch

Seleccionar "configuración"

Agregar en la ventana de slots, lo indicado en la imagen.



Configuración de VPCs

descripción de asignación de ip

- o Ip <dirección_de_ip> < mascara de sub-red> <gateway>
- o Guardar la ip en cada VPCs
 - save

VPCs	Configuración (asignación de ip)
1	ip 192.168.91.10 255.255.255.0 192.168.91.1
2	ip 192.168.91.20 255.255.255.0 192.168.91.1
3	ip 192.168.93.10 255.255.255.0 192.168.93.1
4	ip 192.168.93.20 255.255.255.0 192.168.93.1
5	ip 192.168.92.10 255.255.255.0 192.168.92.1
6	ip 192.168.92.20 255.255.255.0 192.168.92.1

Configuración de switch hacia VPCs

Switch	Configuración.
R91	Conf t Int f0/0 Ip address 192.168.91.1 255.255.255.0 No shutdown Exit
R92	Conf t Int f0/0 Ip address 192.168.92.1 255.255.255.0 No shutdown exit
R93	Conf t Int f0/0 Ip address 192.168.93.1 255.255.255.0 No shutdown exit

Configuración entre routers

R91

- o R92
 - Conf t
 - Int s1/1
 - Ip address 172.91.0.2 255.255.0.0
 - no shutdown
 - exit
- o R93
 - Conf t
 - Int s1/0
 - Ip address 172.93.0.1 255.255.0.0
 - no shutdown
 - exit

R92

- o R91
 - Conf t
 - Int s2/0
 - Ip address 172.91.0.1 255.255.0.0
 - no shutdown
 - exit
- o R93
 - Conf t
 - Int s2/1
 - Ip address 172.92.0.1 255.255.0.0
 - no shutdown
 - exit

R93

- o R91
 - Conf t
 - Int s1/0
 - Ip address 172.93.0.2 255.255.0.0
 - no shutdown
 - exit
- o R92
 - Conf t
 - Int s1/1
 - Ip address 172.92.0.2 255.255.0.0
 - no shutdown
 - exit

Configuración de Enrutamiento statico.

R91

- o R92
 - Conf t
 - Ip route 192.168.92.0 255.255.255.0 172.91.0.1
 - exit
- o R93
 - Conf t
 - Ip route 192.168.93.0 255.255.255.0 172.93.0.2
 - Exit

R92

- o R91
 - Conf t
 - Ip route 192.168.91.0 255.255.255.0 172.91.0.1
 - exit
- o R93
 - Conf t
 - Ip route 192.168.93.0 255.255.255.0 172.92.0.2
 - Exit

R93

- o R91
 - Conf t
 - Ip route 192.168.91.0 255.255.255.0 172.93.0.1
 - exit
- o R92
 - Conf t
 - Ip route 192.168.92.0 255.255.255.0 172.92.0.1
 - Exit

Captura de paquetes con wireshark

Vpcs 5 -> vpcs 3

The screenshot shows a terminal window on the left (Solar-PuTTY) and a packet capture window on the right (Wireshark). The terminal displays the output of a ping command from VPCS 5 to VPCS 3, showing successful responses with TTL=62 and times around 61ms. The Wireshark window shows a list of captured packets, with the selected packet being an ICMP Echo (ping) request from 192.168.92.10 to 192.168.93.1. The packet details pane shows the configuration test protocol (loopback) and the data field (48 bytes).

```
Checking for duplicate address...
C1 : 192.168.92.10 255.255.255.0 gateway 192.168.92.1

C5> ping 192.168.93.10
192.168.93.10 icmp_seq=1 timeout
192.168.93.10 icmp_seq=2 timeout
4 bytes from 192.168.93.10 icmp_seq=3 ttl=62 time=61.839 ms
4 bytes from 192.168.93.10 icmp_seq=4 ttl=62 time=62.047 ms

C5> ping 192.168.93.10
192.168.93.10 icmp_seq=1 timeout
192.168.93.10 icmp_seq=2 timeout
4 bytes from 192.168.93.10 icmp_seq=3 ttl=62 time=60.020 ms
4 bytes from 192.168.93.10 icmp_seq=4 ttl=62 time=60.176 ms
4 bytes from 192.168.93.10 icmp_seq=5 ttl=62 time=61.474 ms

C5> ping 192.168.93.10
192.168.93.10 icmp_seq=1 timeout
192.168.93.10 icmp_seq=2 timeout
4 bytes from 192.168.93.10 icmp_seq=3 ttl=62 time=61.172 ms
4 bytes from 192.168.93.10 icmp_seq=4 ttl=62 time=61.452 ms
4 bytes from 192.168.93.10 icmp_seq=5 ttl=62 time=60.810 ms

C5> ping 192.168.93.10
4 bytes from 192.168.93.10 icmp_seq=1 ttl=62 time=60.352 ms
4 bytes from 192.168.93.10 icmp_seq=2 ttl=62 time=60.636 ms
4 bytes from 192.168.93.10 icmp_seq=3 ttl=62 time=60.704 ms
4 bytes from 192.168.93.10 icmp_seq=4 ttl=62 time=60.009 ms
4 bytes from 192.168.93.10 icmp_seq=5 ttl=62 time=59.876 ms

C5> sh ip
NAME      : PCS[1]
IP/MASK   : 192.168.92.10/24
GATEWAY   : 192.168.92.1
DNS       :
MAC       : 00:50:79:66:68:04
PORT      : 10048
HOST:PORT : 127.0.0.1:10049
MTU       : 1500

C5> ping 192.168.93.10
192.168.93.10 icmp_seq=1 timeout
192.168.93.10 icmp_seq=2 timeout
4 bytes from 192.168.93.10 icmp_seq=3 ttl=62 time=61.599 ms
4 bytes from 192.168.93.10 icmp_seq=4 ttl=62 time=61.913 ms
4 bytes from 192.168.93.10 icmp_seq=5 ttl=62 time=60.589 ms

C5> []
```

No.	Time	Source	Destination	Protocol	Length	Info
224	3828.466511	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
225	3851.394693	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
226	3874.229303	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
227	3886.020917	c2:02:0f:57:00:00	CDP/VTP/DTN/PagP/UDL	CDP	366	Device ID: R93 Port
228	3896.042090	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
229	3918.294035	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
230	3942.111721	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
231	3965.600344	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
232	3966.810762	c2:02:0f:57:00:00	DEC-NOP-Remote-Cons...	0x6002	77	DEC DNA Remote Conso
233	3989.055218	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
234	4002.691051	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) request
235	4002.692260	Private_66:68:02	Broadcast	ARP	64	Who has 192.168.93.1
236	4002.706416	c2:02:0f:57:00:00	Private_66:68:02	ARP	64	Who has 192.168.93.1 is at c
237	4003.706563	Private_66:68:02	Broadcast	ARP	64	Who has 192.168.93.1
238	4003.722134	c2:02:0f:57:00:00	Private_66:68:02	ARP	60	192.168.93.1 is at c
239	4004.720855	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) request
240	4004.720855	Private_66:68:02	Broadcast	ARP	64	Who has 192.168.93.1
241	4004.736229	c2:02:0f:57:00:00	Private_66:68:02	ARP	60	192.168.93.1 is at c
242	4005.724949	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
243	4005.724949	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
244	4006.736477	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) request
245	4006.730817	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
246	4007.814008	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) request
247	4007.815231	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
248	4008.893334	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) request
249	4008.893334	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
250	4010.695349	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply

Vpcs3 -> vpcs5

The screenshot shows a terminal window on the left (Solar-PuTTY) and a packet capture window on the right (Wireshark). The terminal displays the output of a ping command from VPCS 3 to VPCS 5, showing successful responses with TTL=62 and times around 61ms. The Wireshark window shows a list of captured packets, with the selected packet being an ICMP Echo (ping) request from 192.168.92.10 to 192.168.93.1. The packet details pane shows the configuration test protocol (loopback) and the data field (48 bytes).

```
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.

VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file

Checking for duplicate address...
PC1 : 192.168.93.10 255.255.255.0 gateway 192.168.93.1

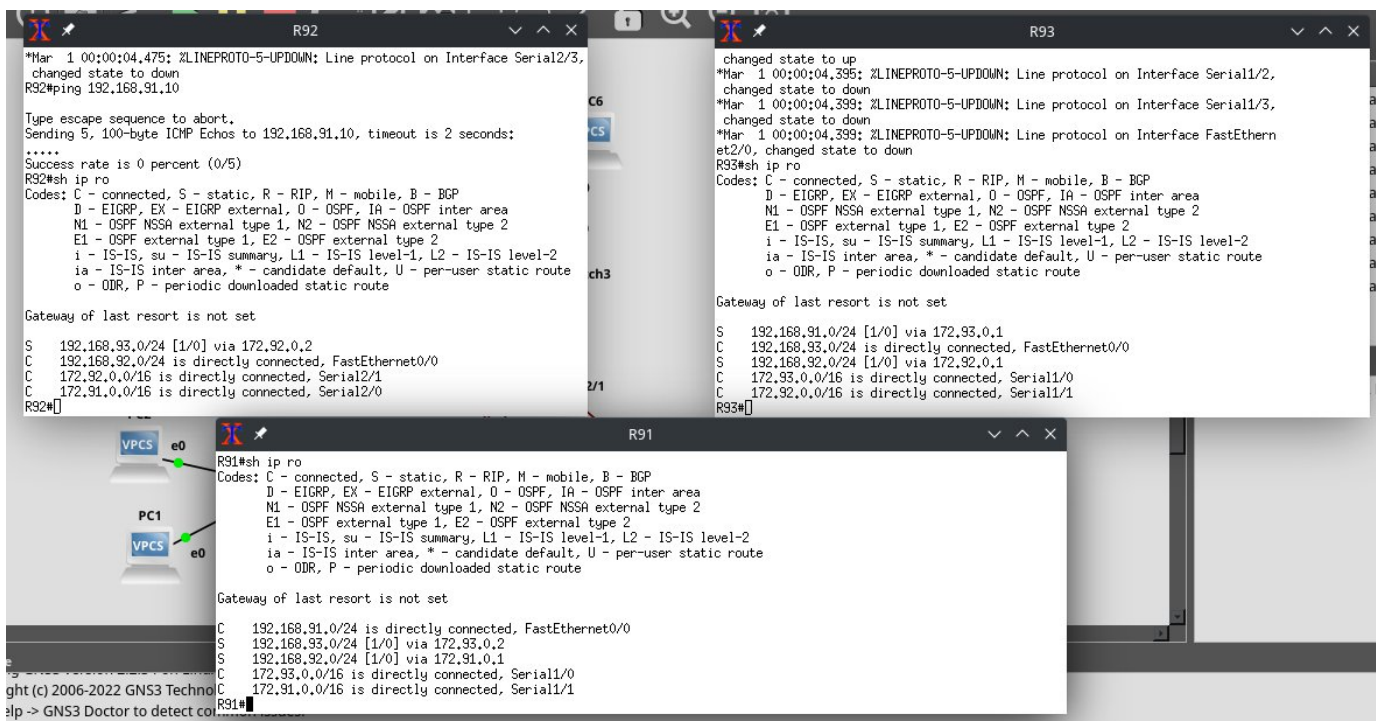
PC3> sh ip
NAME      : PCS[1]
IP/MASK   : 192.168.93.10/24
GATEWAY   : 192.168.93.1
DNS       :
MAC       : 00:50:79:66:68:02
PORT      : 10046
HOST:PORT : 127.0.0.1:10047
MTU       : 1500

PC3> ping 192.168.92.10
84 bytes from 192.168.92.10 icmp_seq=1 ttl=62 time=60.035 ms
84 bytes from 192.168.92.10 icmp_seq=2 ttl=62 time=61.495 ms
84 bytes from 192.168.92.10 icmp_seq=3 ttl=62 time=60.066 ms
84 bytes from 192.168.92.10 icmp_seq=4 ttl=62 time=60.153 ms
84 bytes from 192.168.92.10 icmp_seq=5 ttl=62 time=61.153 ms

PC3> []
```

No.	Time	Source	Destination	Protocol	Length	Info
239	4004.720855	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) request
240	4004.720855	Private_66:68:02	Broadcast	ARP	64	Who has 192.168.93.1
241	4004.736229	c2:02:0f:57:00:00	Private_66:68:02	ARP	60	192.168.93.1 is at c
242	4005.724949	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
243	4005.724949	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
244	4006.736477	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) request
245	4006.730817	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
246	4007.814008	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) request
247	4007.815231	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
248	4008.893334	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) request
249	4008.893334	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) reply
250	4010.695349	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
251	4022.003565	c2:02:0f:57:00:00	CDP/VTP/DTN/PagP/UDL	CDP	366	Device ID: R93 Port
252	4033.000208	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
253	4054.712583	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
254	4077.863302	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
255	4100.006522	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) request
256	4100.865282	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) reply
257	4100.941022	c2:02:0f:57:00:00	c2:02:0f:57:00:00	LOOP	60	Reply
258	4101.882634	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) request
259	4101.943552	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) reply
260	4102.972378	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) request
261	4103.032238	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) reply
262	4104.000802	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) request
263	4104.120602	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) reply
264	4105.141120	192.168.93.10	192.168.92.10	ICMP	98	Echo (ping) request
265	4105.201906	192.168.92.10	192.168.93.10	ICMP	98	Echo (ping) reply

Tabla de ruteo



The screenshot displays the GNS3 network simulation environment with three routers (R92, R93, R91) and a PC1. The routers' command-line interfaces are open, showing their routing tables.

R92 Routing Table:

```

R92#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    192.168.93.0/24 [1/0] via 172.92.0.2
C    192.168.92.0/24 is directly connected, FastEthernet0/0
C    172.92.0.0/16 is directly connected, Serial2/1
C    172.91.0.0/16 is directly connected, Serial2/0
R92#
  
```

R93 Routing Table:

```

R93#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    192.168.91.0/24 [1/0] via 172.93.0.1
C    192.168.93.0/24 is directly connected, FastEthernet0/0
S    192.168.92.0/24 [1/0] via 172.92.0.1
C    172.93.0.0/16 is directly connected, Serial1/0
C    172.92.0.0/16 is directly connected, Serial1/1
R93#
  
```

R91 Routing Table:

```

R91#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    192.168.91.0/24 is directly connected, FastEthernet0/0
S    192.168.93.0/24 [1/0] via 172.93.0.2
S    192.168.92.0/24 [1/0] via 172.91.0.1
C    172.93.0.0/16 is directly connected, Serial1/0
C    172.91.0.0/16 is directly connected, Serial1/1
R91#
  
```

The PC1 is connected to R92 and R93. The GNS3 logo and version information are visible at the bottom left.