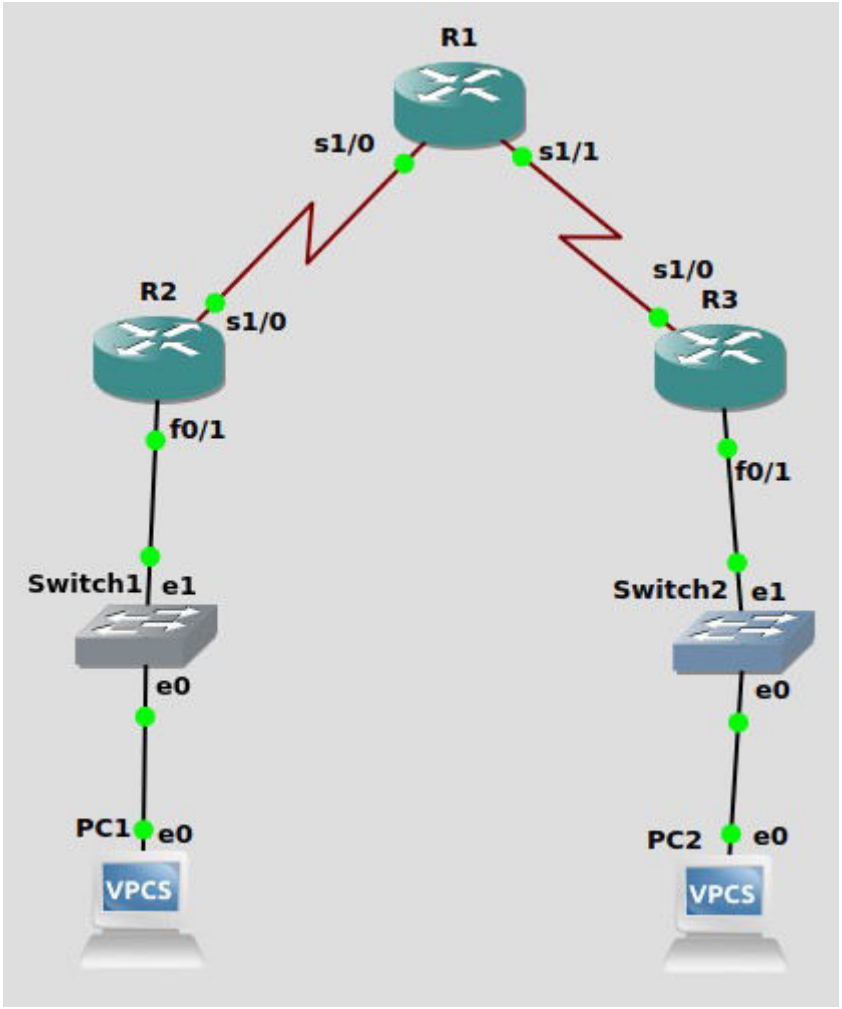
CN LAB 10
STUDY OF DYNAMIC ROUTING PROTOCOLS IN GNS3

Name: Siri Reddy
Reg. No.: 210905015
Roll No.: 4
CSE B

RIP:




```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int s1/0
R1(config-if)#ip add 100.1.1.2 255.255.255.0
R1(config-if)#no shut
R1(config-if)#int s1/1
R1(config-if)#ip address 20.1.1.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#exit
R1(config)#router rip
R1(config-router)#version 2
R1(config-router)#network 20.1.1.0
R1(config-router)#network 100.1.1.0
R1(config-router)#
```

```
R2#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#int f0/1
R2(config-if)#ip address 172.16.2.1 255.255.0.0
R2(config-if)#no shut
R2(config-if)#int s1/0
R2(config-if)#ip address 100.1.1.1 255.255.255.0
R2(config-if)#no shut
R2(config-if)#exit
R2(config)#router rip
R2(config-router)#version 2
R2(config-router)#network 172.16.0.0
R2(config-router)#network 100.1.1.0
R2(config-router)#
```

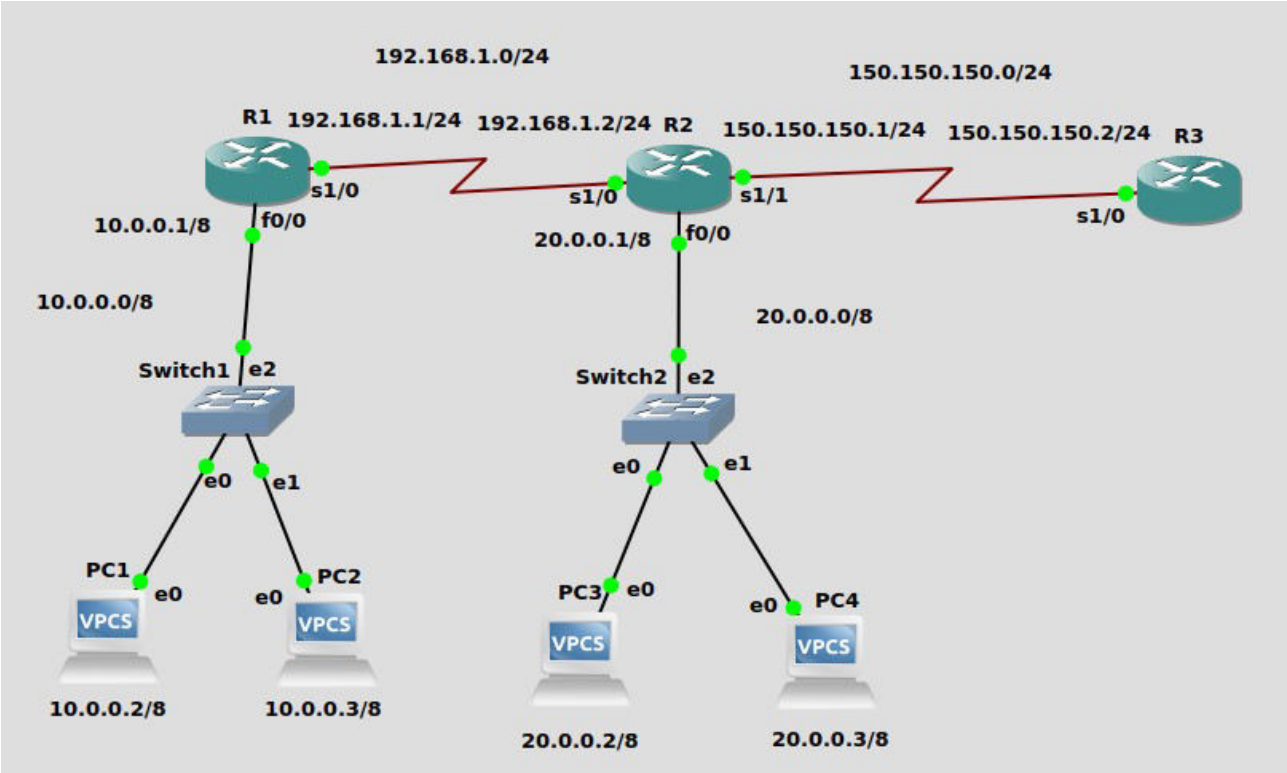
```
R3#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#int s1/0
R3(config-if)#ip add 20.1.1.2 255.255.255.0
R3(config-if)#no shut
R3(config-if)#int f0/1
R3(config-if)#ip add 10.2.2.1 255.255.255.0
R3(config-if)#no shut
R3(config-if)#exit
R3(config)#router rip
R3(config-router)#ver 2
R3(config-router)#network 10.2.2.0
R3(config-router)#network 20.1.1.0
R3(config-router)#
```

```
PC1> ip 172.16.2.10 255.255.0.0 172.16.2.1
Checking for duplicate address...
PC1 : 172.16.2.10 255.255.0.0 gateway 172.16.2.1

PC1> ping 10.2.2.20

10.2.2.20 icmp_seq=1 timeout
84 bytes from 10.2.2.20 icmp_seq=2 ttl=61 time=37.385 ms
84 bytes from 10.2.2.20 icmp_seq=3 ttl=61 time=39.191 ms
84 bytes from 10.2.2.20 icmp_seq=4 ttl=61 time=38.778 ms
84 bytes from 10.2.2.20 icmp_seq=5 ttl=61 time=39.561 ms
```

```
PC2> ip 10.2.2.20 255.255.255.0 20.1.1.2
not same subnet

PC2> ip 10.2.2.20 255.255.255.0 10.2.2.1
Checking for duplicate address...
PC2 : 10.2.2.20 255.255.255.0 gateway 10.2.2.1
```

OSPF

1.



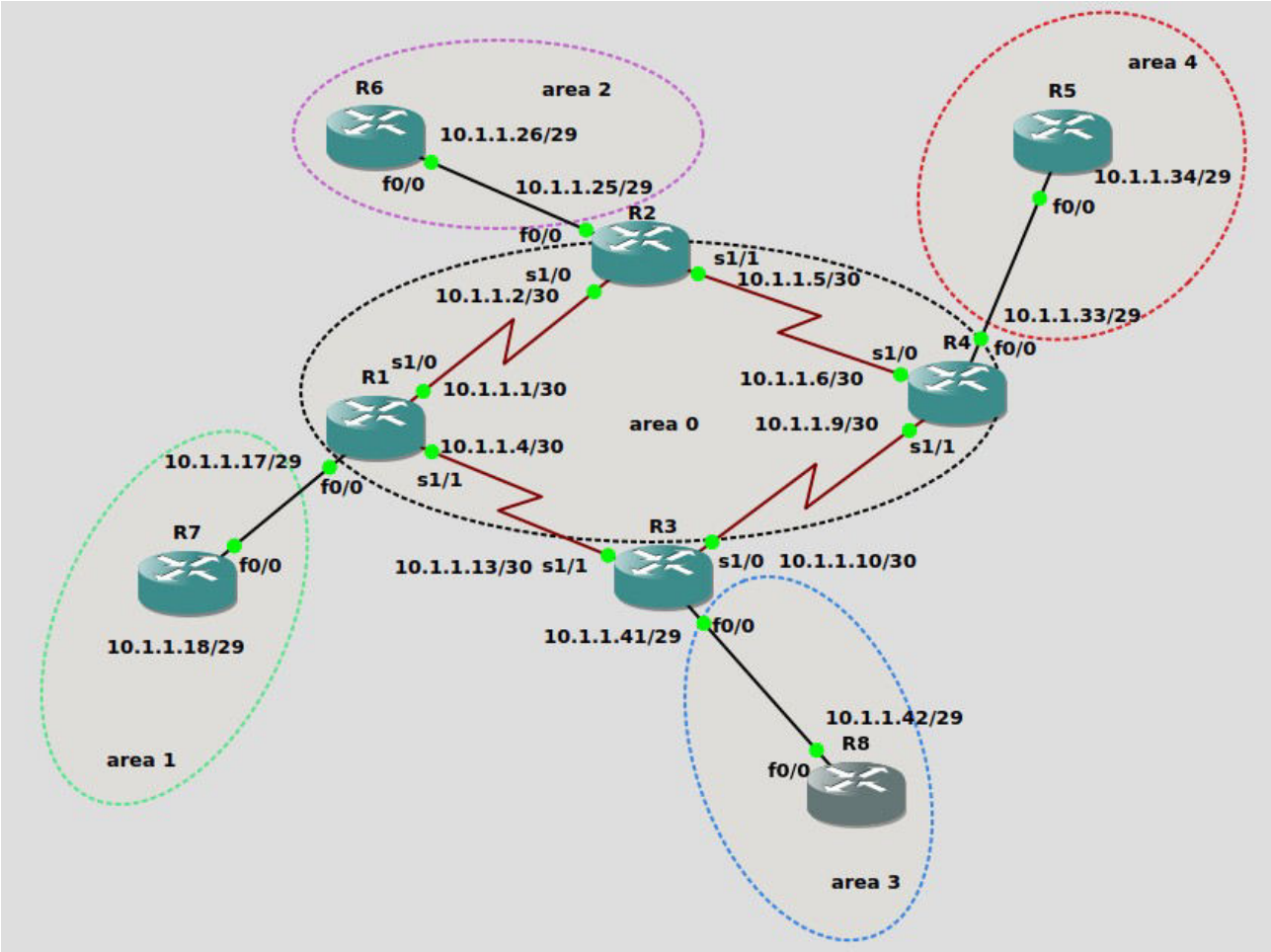

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#inter f0/0
R1(config-if)#ip address 10.0.0.1 255.0.0.0
R1(config-if)#no shut
R1(config-if)#exit
R1(config)#inter s1/0
R1(config-if)#ip address 192.168.1.1 255.255.255.0
R1(config-if)#no shut
R1(config-if)#exit
R1(config)#router ospf 200
R1(config-router)#network 10.0.0.0 0.255.255.255 area 0
R1(config-router)#network 192.168.1.0 0.0.0.255 area 0
R1(config-router)#exit
```

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#inter s1/0
R2(config-if)#ip address 192.168.1.2 255.255.255.0
R2(config-if)#no shut
R2(config-if)#exit
R2(config)#inter f0/0
R2(config-if)#ip address 20.0.0.1 255.0.0.0
R2(config-if)#no shut
R2(config-if)#exit
R2(config)#inter s1/1
R2(config-if)#ip address 150.150.150.1 255.255.255.0
R2(config-if)#no shut
R2(config-if)#exit
R2(config)#router ospf 200
R2(config-router)#network 20.0.0.0 0.255.255.255 area 0
R2(config-router)#network 192.168.1.0 0.0.0.255 area 0
R2(config-router)#network 150.150.150.0 0.0.0.255 area 1
R2(config-router)#exit
```

```
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#inter s1/0
R3(config-if)#ip address 150.150.150.2 255.255.255.0
R3(config-if)#no shut
R3(config-if)#exit
R3(config)#router ospf 200
R3(config-router)#network 150.150.150.0 0.0.0.255 area 1
R3(config-router)#exit
*Mar  1 00:01:10.743: %LINK-3-UPDOWN: Interface Serial1/0, changed state to up
R3(config-router)#exit
```

```
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

O IA 20.0.0.0/8 [110/74] via 150.150.150.1, 00:00:36, Serial1/0
O IA 10.0.0.0/8 [110/138] via 150.150.150.1, 00:00:36, Serial1/0
O IA 192.168.1.0/24 [110/128] via 150.150.150.1, 00:00:36, Serial1/0
     150.150.0.0/24 is subnetted, 1 subnets
C       150.150.150.0 is directly connected, Serial1/0
R3#show ip ospf neighbor

Neighbor ID     Pri   State           Dead Time   Address         Interface
192.168.1.2       0   FULL/  -        00:00:33    150.150.150.1   Serial1/0
R3#show ip ospf database

            OSPF Router with ID (150.150.150.2) (Process ID 200)

                Router Link States (Area 1)

Link ID         ADV Router      Age         Seq#       Checksum Link count
150.150.150.2   150.150.150.2   92          0x80000003 0x00130E 2
192.168.1.2     192.168.1.2     93          0x80000004 0x000C6D 2

                Summary Net Link States (Area 1)

Link ID         ADV Router      Age         Seq#       Checksum
10.0.0.0        192.168.1.2     94          0x80000001 0x00CEAD
20.0.0.0        192.168.1.2     94          0x80000001 0x00C9E8
192.168.1.0     192.168.1.2     94          0x80000001 0x0030F5
```

2.




```
R5:
conf t
inter f0/0
ip address 10.1.1.34 255.255.255.248
no shut
exit
router ospf 100
network 10.1.1.32 0.0.0.7 area 4
exit

R6:
conf t
inter f0/0
ip address 10.1.1.26 255.255.255.248
no shut
exit
router ospf 100
network 10.1.1.24 0.0.0.7 area 2
exit
```

```
R7:
conf t
inter f0/0
ip address 10.1.1.18 255.255.255.248
no shut
exit
router ospf 100
network 10.1.1.16 0.0.0.7 area 1
exit

R8:
conf t
inter f0/0
ip address 10.1.1.42 255.255.255.248
no shut
exit
router ospf 100
network 10.1.1.40 0.0.0.7 area 3
exit
```

```
R1:
conf t
inter f0/0
ip address 10.1.1.17 255.255.255.248
no shut
exit
inter s1/0
ip address 10.1.1.1 255.255.255.252
no shut
exit
int s1/1
ip address 10.1.1.14 255.255.255.252
no shut
exit
router ospf 100
network 10.1.1.16 0.0.0.7 area 1
network 10.1.1.0 0.0.0.3 area 0
network 10.1.1.12 0.0.0.3 area 0
exit
```

```
R2:
conf t
int f0/0
ip address 10.1.1.25 255.255.255.248
no shut
exit
int s1/0
ip address 10.1.1.2 255.255.255.252
no shut
exit
int s1/1
ip address 10.1.1.5 255.255.255.252
no shut
exit
router ospf 100
network 10.1.1.24 0.0.0.7 area 2
network 10.1.1.0 0.0.0.3 area 0
network 10.1.1.4 0.0.0.3 area 0
exit
```

```
R3:
config t
int f0/0
ip address 10.1.1.41 255.255.255.248
no shut
exit
int s1/1
ip address 10.1.1.13 255.255.255.252
no shut
exit
int s1/0
ip address 10.1.1.10 255.255.255.252
no shut
exit
router ospf 100
network 10.1.1.40 0.0.0.7 area 3
network 10.1.1.8 0.0.0.3 area 0
network 10.1.1.4 0.0.0.3 area 0
exit
```

```
R4:
config t
int f0/0
ip address 10.1.1.33 255.255.255.248
no shut
exit
int s1/0
ip address 10.1.1.6 255.255.255.252
no shut
exit
int s1/1
ip address 10.1.1.9 255.255.255.252
no shut
exit
router ospf 100
network 10.1.1.32 0.0.0.7 area 4
network 10.1.1.4 0.0.0.3 area 0
network 10.1.1.8 0.0.0.3 area 0
exit
```

```
R5#ping 10.1.1.42

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.42, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 28/48/68 ms
R5#ping 10.1.1.18

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.18, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 56/70/80 ms
R5#ping 10.1.1.26

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.26, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 28/38/44 ms
```