

F29DC 2024 Lab 5

Network Topologies

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Topology A Configuration

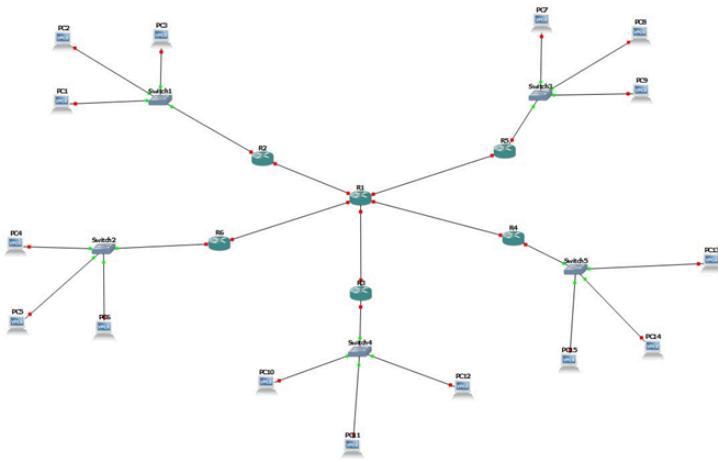


Image 1.1 : Setting up VPC's with respective switches and routers.

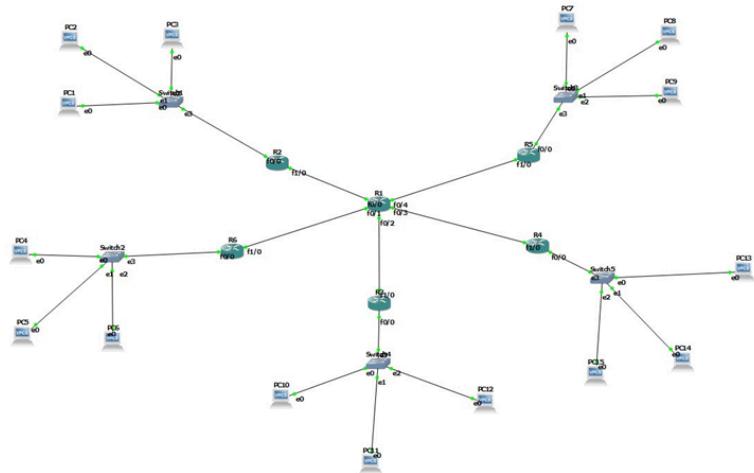


Image 1.2 : Starting the connections.

```
PC1> ip 192.168.1.1 192.168.1.254
Checking for duplicate address...
PC1 : 192.168.1.1 255.255.255.0 gateway 192.168.1.254
```

```
PC2> ip 192.168.1.2 192.168.1.254
Checking for duplicate address...
PC1 : 192.168.1.2 255.255.255.0 gateway 192.168.1.254
```

```
PC3> ip 192.168.1.3 192.168.1.254
Checking for duplicate address...
PC1 : 192.168.1.3 255.255.255.0 gateway 192.168.1.254
```

```
PC4> ip 192.168.2.1 192.168.2.254
Checking for duplicate address...
PC1 : 192.168.2.1 255.255.255.0 gateway 192.168.2.254
```

```
PC5> ip 192.168.2.2 192.168.2.254
Checking for duplicate address...
PC1 : 192.168.2.2 255.255.255.0 gateway 192.168.2.254
```

```
PC6> ip 192.168.2.3 192.168.2.254
Checking for duplicate address...
PC1 : 192.168.2.3 255.255.255.0 gateway 192.168.2.254
```

```
PC7> ip 192.168.5.1 192.168.5.254
Checking for duplicate address...
PC1 : 192.168.5.1 255.255.255.0 gateway 192.168.5.254
```

```
PC8> ip 192.168.5.2 192.168.5.254
Checking for duplicate address...
PC1 : 192.168.5.2 255.255.255.0 gateway 192.168.5.254
```

```
PC9> ip 192.168.5.3 192.168.5.254
Checking for duplicate address...
PC1 : 192.168.5.3 255.255.255.0 gateway 192.168.5.254
```

```
PC10> ip 192.168.3.1 192.168.3.254
Checking for duplicate address...
PC1 : 192.168.3.1 255.255.255.0 gateway 192.168.3.254
```

```
PC11> ip 192.168.3.2 192.168.3.254
Checking for duplicate address...
PC1 : 192.168.3.2 255.255.255.0 gateway 192.168.3.254
```

```
PC12> ip 192.168.3.3 192.168.3.254
Checking for duplicate address...
PC1 : 192.168.3.3 255.255.255.0 gateway 192.168.3.254
```

```
PC13> ip 192.168.4.1 192.168.4.254
Checking for duplicate address...
PC1 : 192.168.4.1 255.255.255.0 gateway 192.168.4.254
```

```
PC14> ip 192.168.4.2 192.168.4.254
Checking for duplicate address...
PC1 : 192.168.4.2 255.255.255.0 gateway 192.168.4.254
```

```
PC15> ip 192.168.4.3 192.168.4.254
Checking for duplicate address...
PC1 : 192.168.4.3 255.255.255.0 gateway 192.168.4.254
```

Image 1.3 : Providing IP's for the VPC's.

```
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#int f0/0
R1(config-if)#no switchport
R1(config-if)#ip address
*Mar  1 00:02:21.703: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#ip address 10.0.1.2
% Incomplete command.

R1(config-if)#ip address 10.0.1.2 255.255.255.0
R1(config-if)#no shutdown
```

```
R1(config-if)#int f0/1
R1(config-if)#no switchport
R1(config-if)#ip address
*Mar  1 00:03:13.755: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
R1(config-if)#ip address 10.0.2.2 255.255.255.0
R1(config-if)#no shutdown
```

```
R1(config-if)#int f0/2
R1(config-if)#no switchport
R1(config-if)#ip address
*Mar  1 00:04:20.011: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
R1(config-if)#ip address 10.0.3.2 255.255.255.0
R1(config-if)#no shutdown
```

```
R1(config-if)#int f0/4
R1(config-if)#no switchport
R1(config-if)#ip address
*Mar  1 00:07:10.479: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to down
R1(config-if)#ip address
*Mar  1 00:07:12.567: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
R1(config-if)#ip address 10.0.5.2 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#end
R1#
*Mar  1 00:07:44.287: %SYS-5-CONFIG_I: Configured from console by console
R1#write
Building configuration...
[OK]
```

Interface	IP-Address	OK?	Method	Status	Prot
FastEthernet0/0	10.0.1.2	YES	manual	up	
FastEthernet0/1	10.0.2.2	YES	manual	up	
FastEthernet0/2	10.0.3.2	YES	manual	up	
FastEthernet0/3	10.0.4.2	YES	manual	up	
FastEthernet0/4	10.0.5.2	YES	manual	up	
FastEthernet0/5	unassigned	YES	unset	up	down
FastEthernet0/6	unassigned	YES	unset	up	down
FastEthernet0/7	unassigned	YES	unset	up	down
FastEthernet0/8	unassigned	YES	unset	up	down
FastEthernet0/9	unassigned	YES	unset	up	down

Image 1.4 : Providing IP's for the R1.

```

R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#int f0/0
R2(config-if)#ip address 192.168.1.254 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#
*Mar 1 00:09:53.315: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:09:54.315: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R2(config-if)#int f1/0
R2(config-if)#ip address 10.0.1.1 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#
*Mar 1 00:10:33.607: %LINK-3-UPDOWN: Interface FastEthernet1/0, changed state to up
*Mar 1 00:10:34.607: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
R2(config-if)#end

```

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	192.168.1.254	YES	manual	up	up
FastEthernet1/0	10.0.1.1	YES	manual	up	up
FastEthernet2/0	unassigned	YES	unset	administratively down	down
FastEthernet3/0	unassigned	YES	unset	administratively down	down

Image 1.5 : Providing IP's for the R2.

```

R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#int f0/0
R3(config-if)#ip address 192.168.3.254 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#
*Mar 1 00:12:21.067: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 00:12:22.067: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R3(config-if)#int f1/0
R3(config-if)#ip address 10.0.3.1 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#end
R3#
*Mar 1 00:13:01.459: %SYS-5-CONFIG_I: Configured from console by console
R3#
*Mar 1 00:13:02.023: %LINK-3-UPDOWN: Interface FastEthernet1/0, changed state to up
*Mar 1 00:13:03.023: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
R3#write
Building configuration...
[OK]

```

Interface	IP-Address	OK?	Method	Status	Prot
FastEthernet0/0	192.168.3.254	YES	manual	up	up
FastEthernet1/0	10.0.3.1	YES	manual	up	up
FastEthernet2/0	unassigned	YES	unset	administratively down	down
FastEthernet3/0	unassigned	YES	unset	administratively down	down

Image 1.6 : Providing IP's for the R3.

```

R4#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R4(config)#interface fastEthernet 0/0
R4(config-if)#ip address 192.168.4.254 255.255.255.0
R4(config-if)#no shutdown
R4(config-if)#
*Mar 1 02:04:16.331: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 02:04:17.331: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R4(config-if)#interface fastEthernet 1/0
R4(config-if)#ip address 10.0.4.1 255.255.255.0
R4(config-if)#no shutdown
R4(config-if)#
*Mar 1 02:05:05.591: %LINK-3-UPDOWN: Interface FastEthernet1/0, changed state to up
*Mar 1 02:05:06.591: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
R4(config-if)#^Z
R4#wri
*Mar 1 02:05:12.435: %SYS-5-CONFIG_I: Configured from console by console
R4#write
Building configuration...
[OK]

```

Interface	IP-Address	OK?	Method	Status	Prot
FastEthernet0/0	192.168.4.254	YES	manual	up	up
FastEthernet1/0	10.0.4.1	YES	manual	up	up
FastEthernet2/0	unassigned	YES	unset	administratively down	down
FastEthernet3/0	unassigned	YES	unset	administratively down	down

Image 1.7 : Providing the IP's for the R4.

```

R5#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R5(config)#interface fastEthernet 0/0
R5(config-if)#ip address 192.168.5.254 255.255.255.0
R5(config-if)#no shutdown
R5(config-if)#
*Mar 1 02:07:22.723: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 02:07:23.723: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R5(config-if)#interface fastEthernet 1/0
R5(config-if)#ip address 10.0.5.1 255.255.255.0
R5(config-if)#no shutdown
R5(config-if)#{^Z
R5#
*Mar 1 02:07:53.187: %SYS-5-CONFIG_I: Configured from console by console
R5#
*Mar 1 02:07:53.951: %LINK-3-UPDOWN: Interface FastEthernet1/0, changed state to up
*Mar 1 02:07:54.951: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
R5#write
Building configuration...
[OK]

```

Interface	IP-Address	OK? Method	Status	Prot
FastEthernet0/0	192.168.5.254	YES manual	up	
FastEthernet1/0	10.0.5.1	YES manual	up	
FastEthernet2/0	unassigned	YES unset	administratively down	down
FastEthernet3/0	unassigned	YES unset	administratively down	down

Image 1.8 : Providing IP's for the R5.

```

R6#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R6(config)#interface fastEthernet 0/0
R6(config-if)#ip address 192.168.2.254 255.255.255.0
R6(config-if)#no shutdown
R6(config-if)#
*Mar 1 02:18:44.867: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Mar 1 02:18:45.867: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R6(config-if)#interface fastEthernet 1/0
R6(config-if)#ip address 10.0.2.1 255.255.255.0
R6(config-if)#no shutdown
R6(config-if)#{^Z
R6#
*Mar 1 02:19:40.615: %SYS-5-CONFIG_I: Configured from console by console
R6#w
*Mar 1 02:19:41.719: %LINK-3-UPDOWN: Interface FastEthernet1/0, changed state to up
*Mar 1 02:19:42.719: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up
R6#write
Building configuration...
[OK]

```

```

R6#
*Mar 1 02:20:11.815: %SYS-5-CONFIG_I: Configured from console by console
R6#show ip interface brief
Interface          IP-Address      OK? Method Status      Prot
oool
FastEthernet0/0      192.168.2.254  YES manual up           up
FastEthernet1/0      10.0.2.1       YES manual up           up
FastEthernet2/0      unassigned     YES unset administratively down down
FastEthernet3/0      unassigned     YES unset administratively down down
R6#

```

Image 1.9 : Providing IP's for the R6.

```
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#router rip
R1(config-router)#version 2
R1(config-router)#network 10.0.1.2
R1(config-router)#network 10.0.2.2
R1(config-router)#network 10.0.3.2
R1(config-router)#network 10.0.4.2
R1(config-router)#network 10.0.5.2
R1(config-router)#^Z
R1#
```

Image 1.10 : RIP configuration for R1.

```
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#router rip
R2(config-router)#version 2
R2(config-router)#network 192.168.1.254
R2(config-router)#network 10.0.1.1
R2(config-router)#^Z
R2#
*Mar 1 00:11:16.811: %SYS-5-CONFIG_I: Configured from console by console
R2#write\
% Unknown command or computer name, or unable to find computer address
R2#write
Building configuration...
[OK]
```

Image 1.11 : RIP configuration for R2.

```
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#router rip
R3(config-router)#version 2
R3(config-router)#network 192.168.3.254
R3(config-router)#network 10.0.3.1
R3(config-router)#^Z
R3#
```

Image 1.12 : RIP configuration for R3.

```
R4#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R4(config)#router rip
R4(config-router)#version 2
R4(config-router)#network 192.168.4.1
R4(config-router)#network 10.0.4.1
R4(config-router)#^Z
R4#
```

Image 1.13 : RIP configuration for R4.

```
R5#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R5(config)#router rip
R5(config-router)#version 2
R5(config-router)#network 192.168.5.254
R5(config-router)#network 10.0.5.1
R5(config-router)#^Z
R5#
```

Image 1.14 : RIP configuration for R5.

```
R6#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R6(config)#router RIP
R6(config-router)#version 2
R6(config-router)#network 192.168.2.254
R6(config-router)#network 10.0.2.1
R6(config-router)#^Z
R6#
```

Image 1.15 : RIP configuration for R6.

```
PC13> ping 192.168.1.1 -3
Connect 7@192.168.1.1 seq=1 ttl=61 time=106.822 ms
SendData 7@192.168.1.1 seq=1 ttl=61 time=91.245 ms
Close 7@192.168.1.1 seq=1 ttl=61 time=107.620 ms
Connect 7@192.168.1.1 seq=2 ttl=61 time=78.540 ms
SendData 7@192.168.1.1 seq=2 ttl=61 time=75.000 ms
Close 7@192.168.1.1 seq=2 ttl=61 time=124.496 ms
Connect 7@192.168.1.1 seq=3 ttl=61 time=94.977 ms
SendData 7@192.168.1.1 seq=3 ttl=61 time=92.345 ms
Close 7@192.168.1.1 seq=3 ttl=61 time=92.188 ms
Connect 7@192.168.1.1 seq=4 ttl=61 time=90.475 ms
SendData 7@192.168.1.1 seq=4 ttl=61 time=107.661 ms
Close 7@192.168.1.1 seq=4 ttl=61 time=107.152 ms
Connect 7@192.168.1.1 seq=5 ttl=61 time=108.894 ms
SendData 7@192.168.1.1 seq=5 ttl=61 time=76.871 ms
Close 7@192.168.1.1 seq=5 ttl=61 time=121.568 ms

PC13> ping 192.168.1.1 -2
84 bytes from 192.168.1.1 udp_seq=1 ttl=61 time=79.851 ms
84 bytes from 192.168.1.1 udp_seq=2 ttl=61 time=94.971 ms
84 bytes from 192.168.1.1 udp_seq=3 ttl=61 time=90.695 ms
84 bytes from 192.168.1.1 udp_seq=4 ttl=61 time=62.815 ms
84 bytes from 192.168.1.1 udp_seq=5 ttl=61 time=87.864 ms

PC13> ping 192.168.1.1 -1
84 bytes from 192.168.1.1 icmp_seq=1 ttl=61 time=78.150 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=61 time=92.127 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=61 time=78.054 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=61 time=78.517 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=61 time=92.902 ms

PC13> ping 192.168.1.1
84 bytes from 192.168.1.1 icmp_seq=1 ttl=61 time=78.744 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=61 time=75.456 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=61 time=93.662 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=61 time=90.400 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=61 time=95.631 ms
```

Image 1.16 : Pinging PC1 - PC13 using ICMP, TCP, UDP & normal ping.

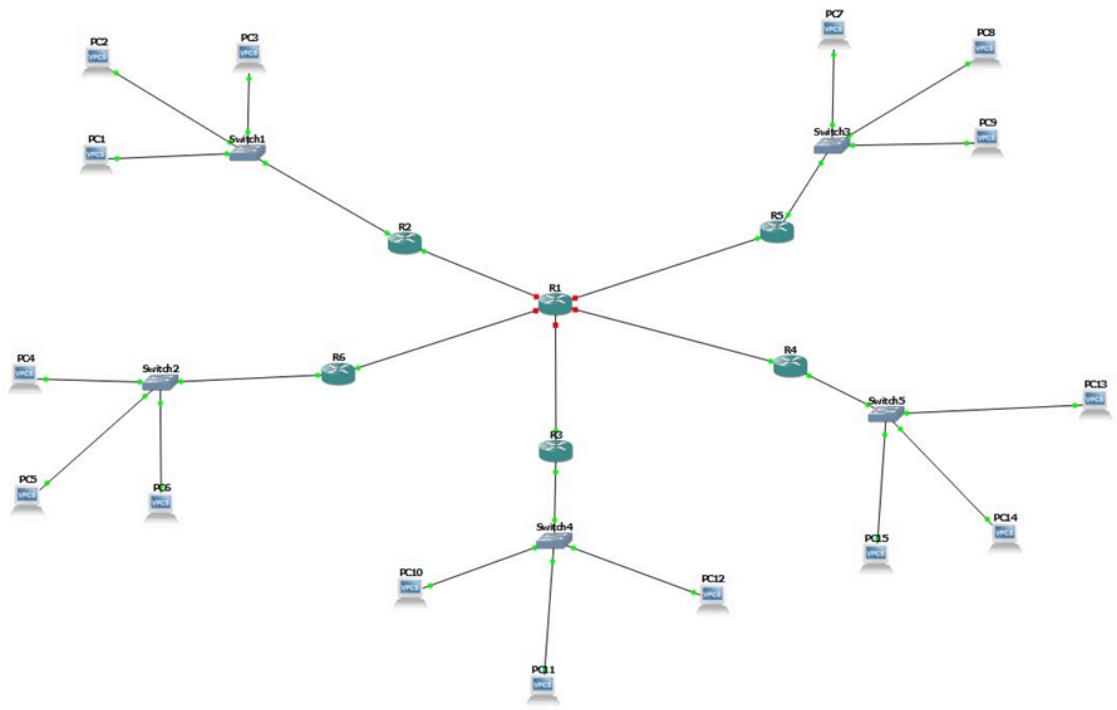


Image 1.17 : Stopping the R1 router.

```
PC13> ping 192.168.1.1 -3
Connect 7@192.168.1.1 timeout

PC13> ping 192.168.1.1 -2
192.168.1.1 udp_seq=1 timeout
192.168.1.1 udp_seq=2 timeout
192.168.1.1 udp_seq=3 timeout
192.168.1.1 udp_seq=4 timeout
192.168.1.1 udp_seq=5 timeout

PC13> ping 192.168.1.1 -1
192.168.1.1 icmp_seq=1 timeout
192.168.1.1 icmp_seq=2 timeout
192.168.1.1 icmp_seq=3 timeout
192.168.1.1 icmp_seq=4 timeout
192.168.1.1 icmp_seq=5 timeout

PC13> ping 192.168.1.1
192.168.1.1 icmp_seq=1 timeout
192.168.1.1 icmp_seq=2 timeout
192.168.1.1 icmp_seq=3 timeout
192.168.1.1 icmp_seq=4 timeout
192.168.1.1 icmp_seq=5 timeout

PC13> █
```

Image 1.18 : Pinging PC1 - PC13 using ICMP, TCP, UDP & normal ping.

Topology B Configuration

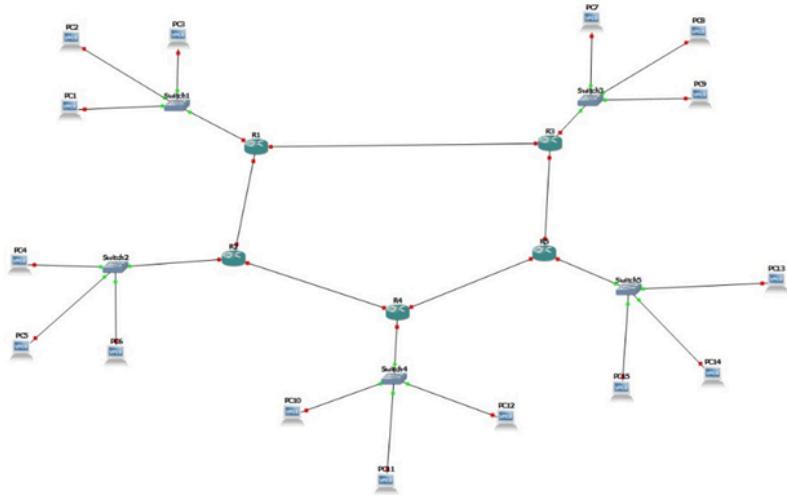


Image 2.1 : Setting up VPC's with respective switches and routers.

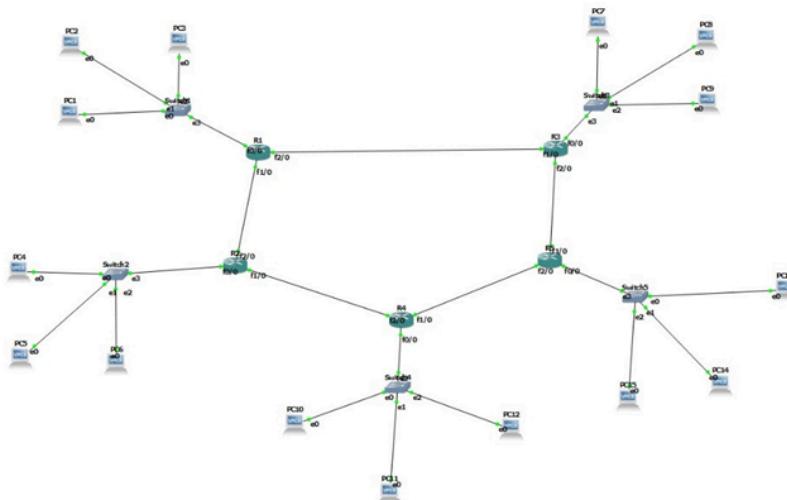


Image 2.2 : Starting the connections.

```

R1(config)#interface fastEthernet 0/0
R1(config-if)#no switchport
      ^
% Invalid input detected at '^' marker.

R1(config-if)#ip address 192.168.1.254 255.255.255.0
R1(config-if)#no shutdown

R1(config)#interface fastEthernet 2/0
R1(config-if)#ip address 10.0.3.2 255.255.255.0
R1(config-if)#no shutdown

R1(config-if)#interface fastEthernet 1/0
R1(config-if)#ip address 10.0.1.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#^Z

R1#
*Mar 1 00:04:00.975: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip interface brief
Interface          IP-Address      OK? Method Status      Prot
ocol
FastEthernet0/0    192.168.1.254  YES NVRAM up           up
FastEthernet1/0    10.0.1.1       YES manual up        up
FastEthernet2/0    10.0.3.2       YES manual up        up
FastEthernet3/0    unassigned     YES NVRAM administratively down down

R1#write
Building configuration...
[OK]

```

Image 2.3 : Providing IP's for the R1.

```
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#interface fastEthernet 0/0
R2(config-if)#ip address 192.168.2.254 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#

```

```
R2(config)#interface fastEthernet 2/0
R2(config-if)#ip address 10.0.1.2 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#

```

```
R2(config-if)#interface fastEthernet 1/0
R2(config-if)#ip address 10.0.2.1 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#^Z

```

```
R2#
*Mar 1 00:06:19.003: %SYS-5-CONFIG_I: Configured from console by console
R2#show ip interface brief
Interface          IP-Address      OK? Method Status      Prot
ocol
FastEthernet0/0    192.168.2.254  YES NVRAM up           up
FastEthernet1/0    10.0.2.1       YES manual up        up
FastEthernet2/0    10.0.1.2       YES manual up        up
FastEthernet3/0    unassigned     YES NVRAM administratively down down

R2#write
Building configuration...
[OK]

```

Image 2.4 : Providing IP's for the R2.

```
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#interface fastEthernet 0/0
R3(config-if)#ip address 192.168.3.254 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#
```

```
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#interface fastEthernet 2/0
R3(config-if)#ip address 10.0.5.2 255.255.255.0
R3(config-if)#no shutdown
```

```
R3(config-if)#interface fastEthernet 1/0
R3(config-if)#ip address 10.0.3.1 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#^Z
```

```
R3#
*Mar 1 00:06:46.115: %SYS-5-CONFIG_I: Configured from console by console
R3#show ip interface brief
Interface          IP-Address      OK? Method Status      Prot
ocol
FastEthernet0/0    192.168.3.254  YES NVRAM  up           up
FastEthernet1/0    10.0.3.1       YES manual up           up
FastEthernet2/0    10.0.5.2       YES manual up           up
FastEthernet3/0    unassigned     YES NVRAM  administratively down down
R3#
```

Image 2.5 : Providing IP's for the R3.

```
R4#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R4(config)#interface fastEthernet 0/0
R4(config-if)#ip address 192.168.4.254 255.255.255.0
R4(config-if)#no shutdown
R4(config-if)#

```

```
R4#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R4(config)#interface fastEthernet 2/0
R4(config-if)#ip address 10.0.2.2 255.255.255.0
R4(config-if)#no shutdown

```

```
R4(config-if)#interface fastEthernet 1/0
R4(config-if)#ip address 10.0.4.1 255.255.255.0
R4(config-if)#no shutdown
R4(config-if)#^Z

```

```
R4#show ip interface brief
+-----+-----+-----+-----+
| Interface | IP-Address | OK? Method | Status | Prot |
+-----+-----+-----+-----+
| FastEthernet0/0 | 192.168.4.254 | YES NVRAM | up | up |
| FastEthernet1/0 | 10.0.4.1 | YES manual | up | up |
| FastEthernet2/0 | 10.0.2.2 | YES manual | up | up |
| FastEthernet3/0 | unassigned | YES NVRAM | administratively down | down |
+-----+-----+-----+-----+
R4#write

```

Image 2.6 : Providing IP's for the R4.

```
R5#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R5(config)#interface fastEthernet 0/0
R5(config-if)#ip address 192.168.5.254
% Incomplete command.
```

```
R5(config-if)#ip address 192.168.5.254 255.255.255.0
R5(config-if)#no shutdown
```

```
R5(config-if)#interface fastEthernet 2/0
R5(config-if)#ip address 10.0.4.2 255.255.255.0
R5(config-if)#no shutdown
```

```
R5(config-if)#interface fastEthernet 1/0
R5(config-if)#ip address 10.0.5.1 255.255.255.0
R5(config-if)#no shutdown
R5(config-if)#^Z
R5#
```

```
R5#
*Mar 1 00:12:13.791: %SYS-5-CONFIG_I: Configured from console by console
R5#show ip interface brief
Interface          IP-Address      OK? Method Status      Prot
ocel
FastEthernet0/0    192.168.5.254  YES NVRAM   up           up
FastEthernet1/0    10.0.5.1       YES manual  up           up
FastEthernet2/0    10.0.4.2       YES manual  up           up
FastEthernet3/0    unassigned     YES NVRAM   administratively down down
R5#write
```

Image 2.7 : Providing IP's for the R5.

```
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#router RIP
R1(config-router)#version 2
R1(config-router)#network 192.168.1.254
R1(config-router)#network 10.0.3.2
R1(config-router)#network 10.0.1.1
R1(config-router)#^Z
R1#
```

Image 2.8 : RIP configuration for R1.

```
R2#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#router RIP
R2(config-router)#version 2
R2(config-router)#network 192.168.2.254
R2(config-router)#network 10.0.1.2
R2(config-router)#network 10.0.2.1
R2(config-router)#^Z
R2#
```

Image 2.9 : RIP configuration for R2.

```
R3#
*Mar 1 00:06:17.623: %SYS-5-CONFIG_I: Configured from console by console
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#router RIP
R3(config-router)#version 2
R3(config-router)#network 192.168.3.254
R3(config-router)#network 10.0.5.2
R3(config-router)#network 10.0.3.1
R3(config-router)#^Z
R3#
```

Image 2.10 : RIP configuration for R3.

```
R4#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R4(config)#router RIP
R4(config-router)#version 2
R4(config-router)#network 192.168.4.254
R4(config-router)#network 10.0.4.1
R4(config-router)#network 10.0.2.2
R4(config-router)#^Z
R4#
```

Image 2.11 : RIP configuration for R4.

```
R5#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R5(config)#router RIP
R5(config-router)#version 2
R5(config-router)#network 192.168.5.254
R5(config-router)#network 10.0.4.2
R5(config-router)#network 10.0.5.1
R5(config-router)#^Z
R5#
```

Image 2.12 : RIP configuration for R5.

```
SHYAM - PuTTY
PC13> ping 192.168.1.1 -3
Connect 7@192.168.1.1 timeout
Connect 7@192.168.1.1 seq=2 ttl=60 time=123.713 ms
SendData 7@192.168.1.1 seq=2 ttl=60 time=107.527 ms
Close 7@192.168.1.1 seq=2 ttl=60 time=138.091 ms
Connect 7@192.168.1.1 seq=3 ttl=60 time=122.472 ms
SendData 7@192.168.1.1 seq=3 ttl=60 time=121.318 ms
Close 7@192.168.1.1 seq=3 ttl=60 time=121.249 ms
Connect 7@192.168.1.1 seq=4 ttl=60 time=123.435 ms
SendData 7@192.168.1.1 seq=4 ttl=60 time=123.077 ms
Close 7@192.168.1.1 seq=4 ttl=60 time=152.480 ms
Connect 7@192.168.1.1 seq=5 ttl=60 time=138.406 ms
SendData 7@192.168.1.1 seq=5 ttl=60 time=122.081 ms
Close 7@192.168.1.1 seq=5 ttl=60 time=153.653 ms

PC13> ping 192.168.2.1 -3
Connect 7@192.168.2.1 timeout
Connect 7@192.168.2.1 seq=2 ttl=61 time=93.038 ms
SendData 7@192.168.2.1 seq=2 ttl=61 time=90.738 ms
Close 7@192.168.2.1 seq=2 ttl=61 time=127.231 ms
Connect 7@192.168.2.1 seq=3 ttl=61 time=91.646 ms
SendData 7@192.168.2.1 seq=3 ttl=61 time=107.015 ms
Close 7@192.168.2.1 seq=3 ttl=61 time=138.161 ms
Connect 7@192.168.2.1 seq=4 ttl=61 time=106.504 ms
SendData 7@192.168.2.1 seq=4 ttl=61 time=107.248 ms
Close 7@192.168.2.1 seq=4 ttl=61 time=89.945 ms
Connect 7@192.168.2.1 seq=5 ttl=61 time=122.469 ms
SendData 7@192.168.2.1 seq=5 ttl=61 time=110.838 ms
Close 7@192.168.2.1 seq=5 ttl=61 time=121.766 ms

PC13> ping 192.168.3.1 -3
Connect 7@192.168.3.1 seq=1 ttl=62 time=1086.795 ms
SendData 7@192.168.3.1 seq=1 ttl=62 time=151.549 ms
Close 7@192.168.3.1 seq=1 ttl=62 time=62.487 ms
Connect 7@192.168.3.1 seq=2 ttl=62 time=76.971 ms
SendData 7@192.168.3.1 seq=2 ttl=62 time=58.422 ms
Close 7@192.168.3.1 seq=2 ttl=62 time=93.211 ms
Connect 7@192.168.3.1 seq=3 ttl=62 time=64.546 ms
SendData 7@192.168.3.1 seq=3 ttl=62 time=239.614 ms
Close 7@192.168.3.1 seq=3 ttl=62 time=113.671 ms
Connect 7@192.168.3.1 seq=4 ttl=62 time=60.691 ms
SendData 7@192.168.3.1 seq=4 ttl=62 time=64.397 ms
Close 7@192.168.3.1 seq=4 ttl=62 time=94.484 ms
Connect 7@192.168.3.1 seq=5 ttl=62 time=103.429 ms
SendData 7@192.168.3.1 seq=5 ttl=62 time=77.205 ms
Close 7@192.168.3.1 seq=5 ttl=62 time=80.435 ms

PC13> ping 192.168.4.1 -3
Connect 7@192.168.4.1 timeout
Connect 7@192.168.4.1 seq=2 ttl=62 time=77.380 ms
SendData 7@192.168.4.1 seq=2 ttl=62 time=77.293 ms
Close 7@192.168.4.1 seq=2 ttl=62 time=63.107 ms
Connect 7@192.168.4.1 seq=3 ttl=62 time=62.342 ms
SendData 7@192.168.4.1 seq=3 ttl=62 time=46.630 ms
Close 7@192.168.4.1 seq=3 ttl=62 time=90.912 ms
Connect 7@192.168.4.1 seq=4 ttl=62 time=78.117 ms
SendData 7@192.168.4.1 seq=4 ttl=62 time=76.750 ms
Close 7@192.168.4.1 seq=4 ttl=62 time=92.214 ms
Connect 7@192.168.4.1 seq=5 ttl=62 time=76.884 ms
SendData 7@192.168.4.1 seq=5 ttl=62 time=45.500 ms
Close 7@192.168.4.1 seq=5 ttl=62 time=92.043 ms

PC13> ping 192.168.5.1 -3
192.168.5.1 icmp_seq=1 ttl=64 time=0.001 ms
192.168.5.1 icmp_seq=2 ttl=64 time=0.001 ms
192.168.5.1 icmp_seq=3 ttl=64 time=0.001 ms
192.168.5.1 icmp_seq=4 ttl=64 time=0.001 ms
192.168.5.1 icmp_seq=5 ttl=64 time=0.001 ms
```

Image 2.13 : Pinging PC13 with other PC's connected via different routers.

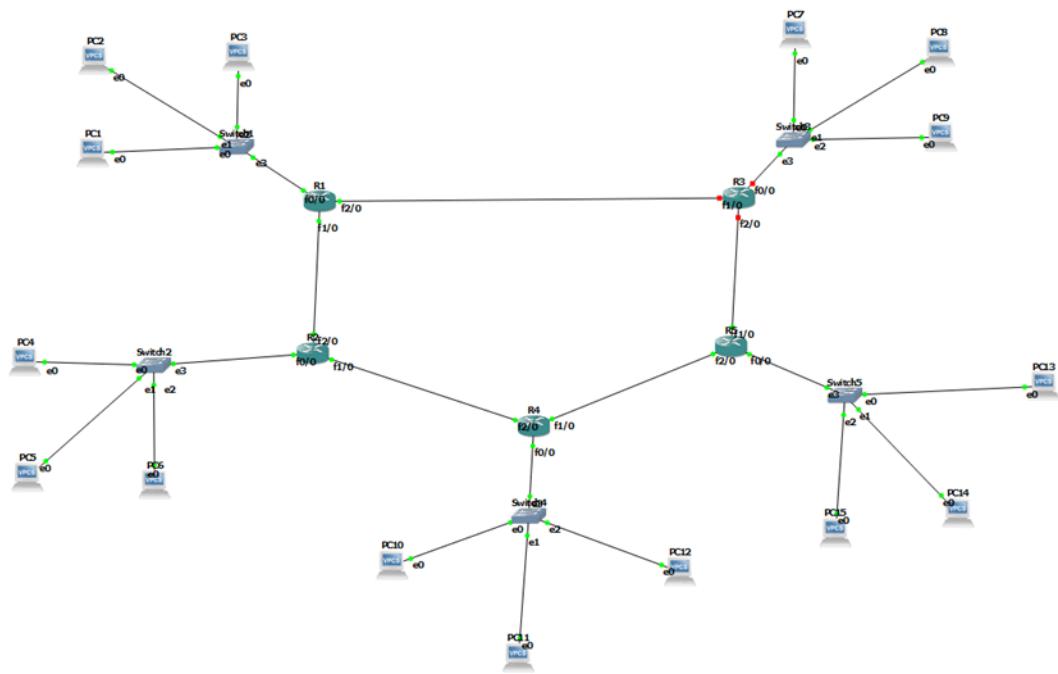


Image 2.14 : Stopping the R3 router.

```

PC13> ping 192.168.1.1 -3
Connect 7@192.168.1.1 timeout
Connect 7@192.168.1.1 seq=2 ttl=60 time=138.481 ms
SendData 7@192.168.1.1 seq=2 ttl=60 time=137.397 ms
Close 7@192.168.1.1 seq=2 ttl=60 time=153.171 ms
Connect 7@192.168.1.1 seq=3 ttl=60 time=138.979 ms
SendData 7@192.168.1.1 seq=3 ttl=60 time=124.693 ms
Close 7@192.168.1.1 seq=3 ttl=60 time=153.436 ms
Connect 7@192.168.1.1 seq=4 ttl=60 time=122.940 ms
SendData 7@192.168.1.1 seq=4 ttl=60 time=106.831 ms
Close 7@192.168.1.1 seq=4 ttl=60 time=139.490 ms
Connect 7@192.168.1.1 seq=5 ttl=60 time=122.208 ms
SendData 7@192.168.1.1 seq=5 ttl=60 time=136.223 ms
Close 7@192.168.1.1 seq=5 ttl=60 time=136.233 ms

PC13> ping 192.168.2.1 -3
Connect 7@192.168.2.1 timeout
Connect 7@192.168.2.1 seq=2 ttl=61 time=110.557 ms
SendData 7@192.168.2.1 seq=2 ttl=61 time=93.968 ms
Close 7@192.168.2.1 seq=2 ttl=61 time=139.771 ms
Connect 7@192.168.2.1 seq=3 ttl=61 time=224.560 ms
SendData 7@192.168.2.1 seq=3 ttl=61 time=109.560 ms
Close 7@192.168.2.1 seq=3 ttl=61 time=119.032 ms
Connect 7@192.168.2.1 seq=4 ttl=61 time=157.702 ms
SendData 7@192.168.2.1 seq=4 ttl=61 time=109.529 ms
Close 7@192.168.2.1 seq=4 ttl=61 time=119.733 ms
Connect 7@192.168.2.1 seq=5 ttl=61 time=118.713 ms
SendData 7@192.168.2.1 seq=5 ttl=61 time=93.269 ms
Close 7@192.168.2.1 seq=5 ttl=61 time=107.424 ms

PC13> ping 192.168.3.1 -3
Connect 7@192.168.3.1 timeout

PC13> ping 192.168.4.1 -3
Connect 7@192.168.4.1 timeout
Connect 7@192.168.4.1 seq=2 ttl=62 time=78.289 ms
SendData 7@192.168.4.1 seq=2 ttl=62 time=77.244 ms
Close 7@192.168.4.1 seq=2 ttl=62 time=93.324 ms
Connect 7@192.168.4.1 seq=3 ttl=62 time=73.880 ms
SendData 7@192.168.4.1 seq=3 ttl=62 time=75.931 ms
Close 7@192.168.4.1 seq=3 ttl=62 time=91.913 ms
Connect 7@192.168.4.1 seq=4 ttl=62 time=75.930 ms
SendData 7@192.168.4.1 seq=4 ttl=62 time=76.011 ms
Close 7@192.168.4.1 seq=4 ttl=62 time=90.422 ms
Connect 7@192.168.4.1 seq=5 ttl=62 time=78.025 ms
SendData 7@192.168.4.1 seq=5 ttl=62 time=85.481 ms
Close 7@192.168.4.1 seq=5 ttl=62 time=77.187 ms

PC13> ping 192.168.5.1 -3
192.168.5.1 icmp_seq=1 ttl=64 time=0.001 ms
192.168.5.1 icmp_seq=2 ttl=64 time=0.001 ms
192.168.5.1 icmp_seq=3 ttl=64 time=0.001 ms
192.168.5.1 icmp_seq=4 ttl=64 time=0.001 ms
192.168.5.1 icmp_seq=5 ttl=64 time=0.001 ms

```

Image 2.15 : Pinging PC13 with other PC's connected via different routers.

Connects with every PC except PC7, connected with R3.
