



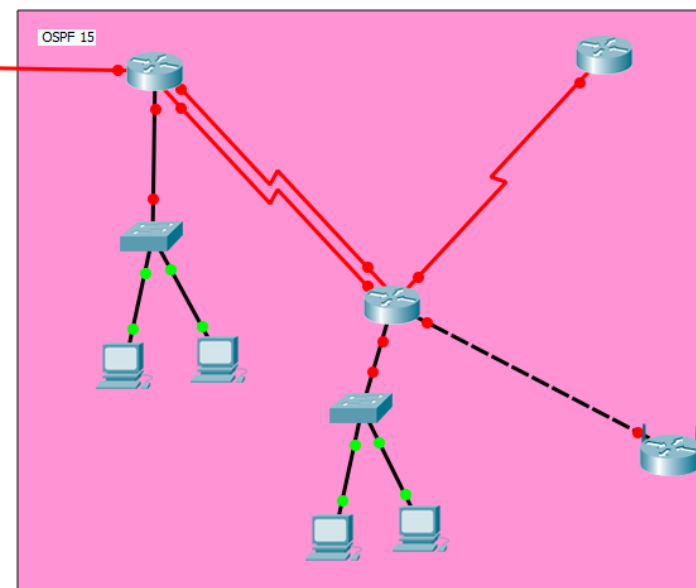
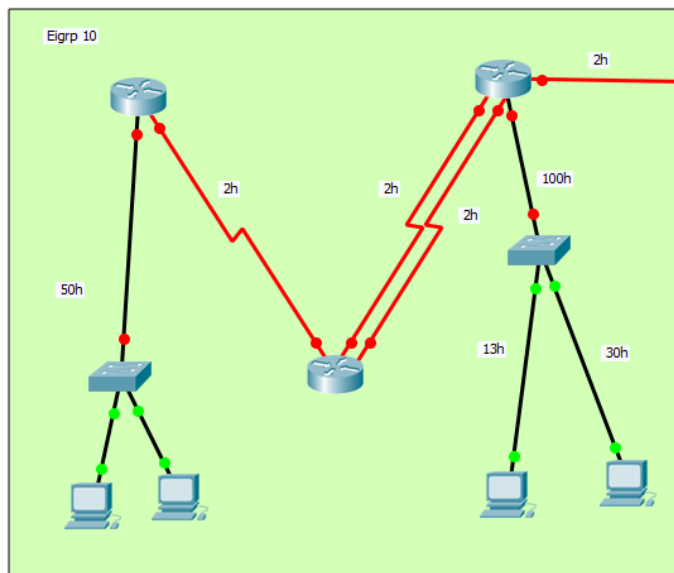
**PAF-Karachi Institute of Economics and Technology**  
**College of Computing and Information Sciences - North Campus**

**Internet & Intranet Architecture**

**Assignment – 1**

**Instructions (READ AND FOLLOW INSTRUCTIONS CAREFULLY):**

- **In case of CHEATING, COPIED material or any unfair means would result in ZERO marks.**
- Mention your name and ID above and write solution in this file and then submit in word or PDF format.
- Late submission will result in mark deduction

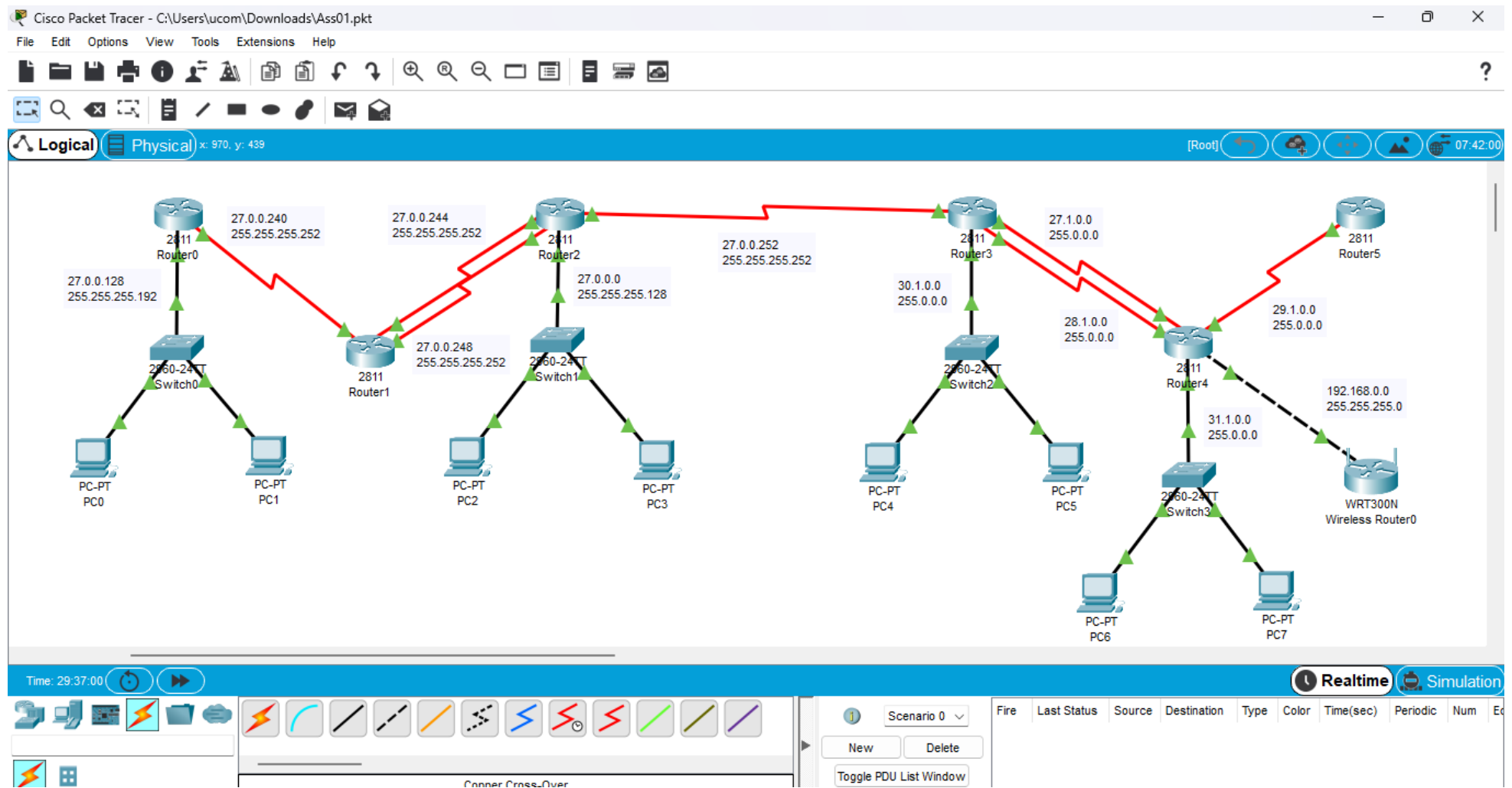


## **Instructions (for Topology Configuration)**

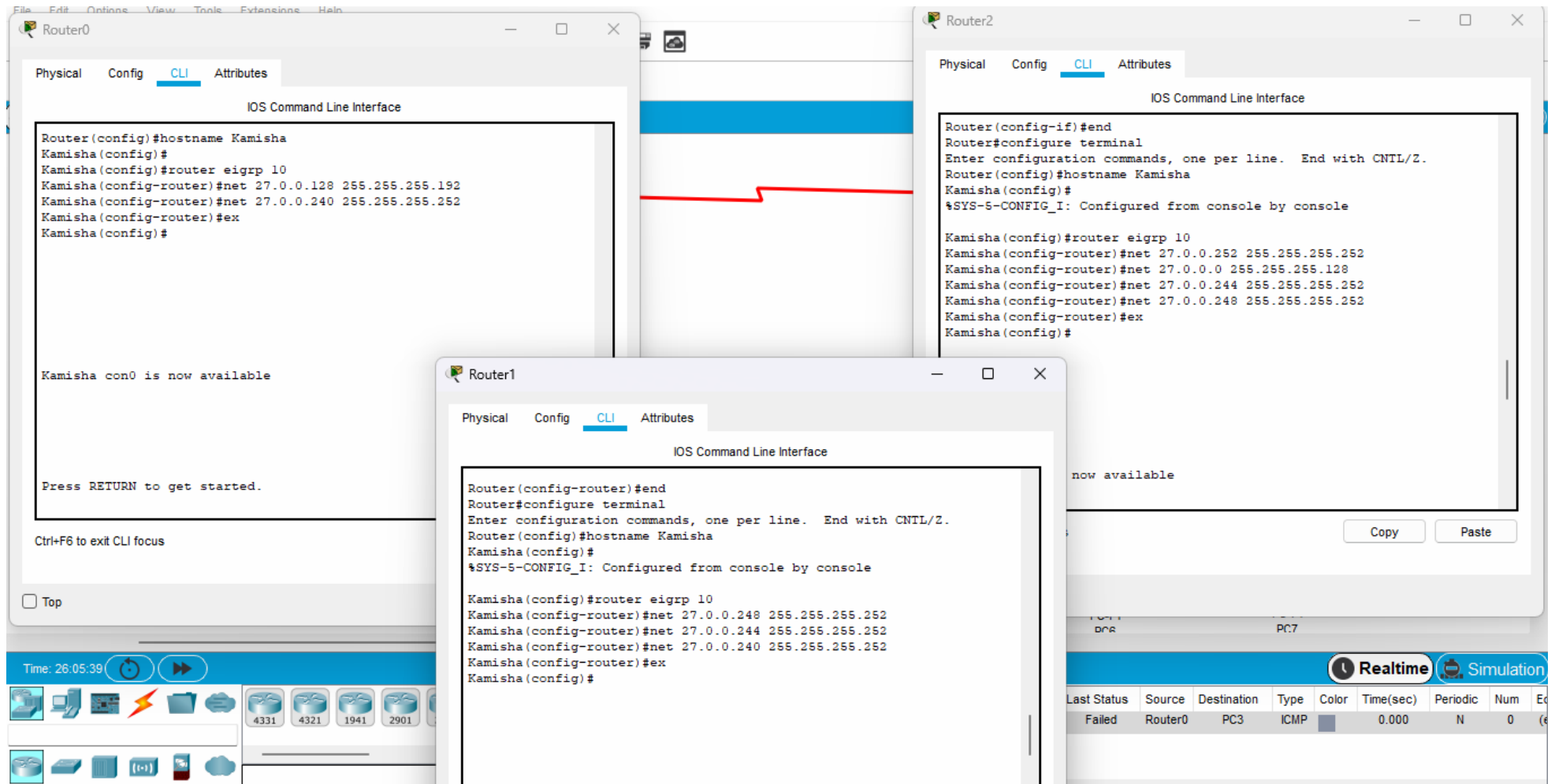
- Change all router hostname with your name
- Use major network which is assigned to you only
- Configure Eigrp on left side.
- Configure the Eigrp part using VLSM.
- Configure DHCP on Wireless Router
- While configuring Eigrp configure summarize route.
- Configure floating routes where necessary.
- All routers should communicate with each other.
- All end devices should communicate within their respective areas
- Submit screenshot of topology with network labels
- Submit screenshots of routing table of all routers
- Submit screenshot of DHCP

**If anyone failed to follow any instruction I will deduct 1 marks for each instruction.**

**[Solution]**



Screenshot of Topology with network labels



Screenshot of EIGRP

The screenshot displays a network simulation environment. A central window titled "Router0" shows the CLI interface with the following text:

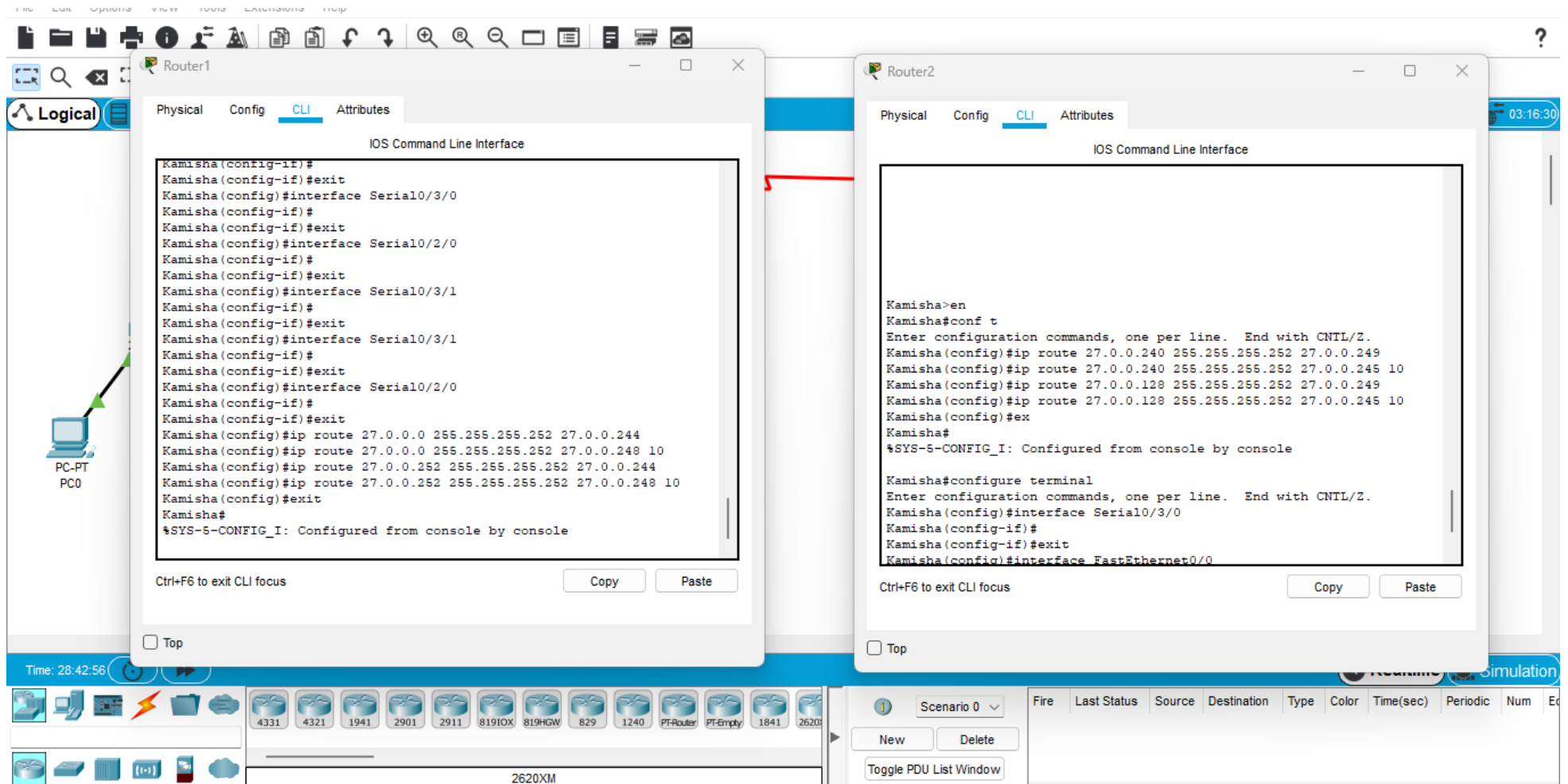
```
state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/3/0, changed
state to up
%DUAL-5-NBRCHANGE: IP-EIGRP 10: Neighbor 27.0.0.242 (Serial0/3/0) is
up: new adjacency

Kamisha>en
Kamisha#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Kamisha(config)#ip route 27.0.0.0 255.255.255.0 27.0.0.242
Kamisha(config)#ip route 27.0.0.0 255.255.255.0 27.0.0.129
%Invalid next hop address (it's this router)
Kamisha(config)#ip route 27.0.0.0 255.255.255.0 27.0.0.128
Kamisha(config)#
```

The background shows a network topology with routers (2811 Router0, 2811 Router1, 2811 Router4, 2811 Router5), switches (2960-24-T Switch0, 2960-24-T Switch3), and PCs (PC0, PC1, PC2, PC7). A status bar at the bottom indicates "Realtime" and "Simulation" modes, along with a table of network events.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Ed
	Successful	Router0	PC3	ICMP	Green	0.000	N	0	(e
	Successful	Router1	PC2	ICMP	Green	0.000	N	1	(e

Screenshot of Route Summarization



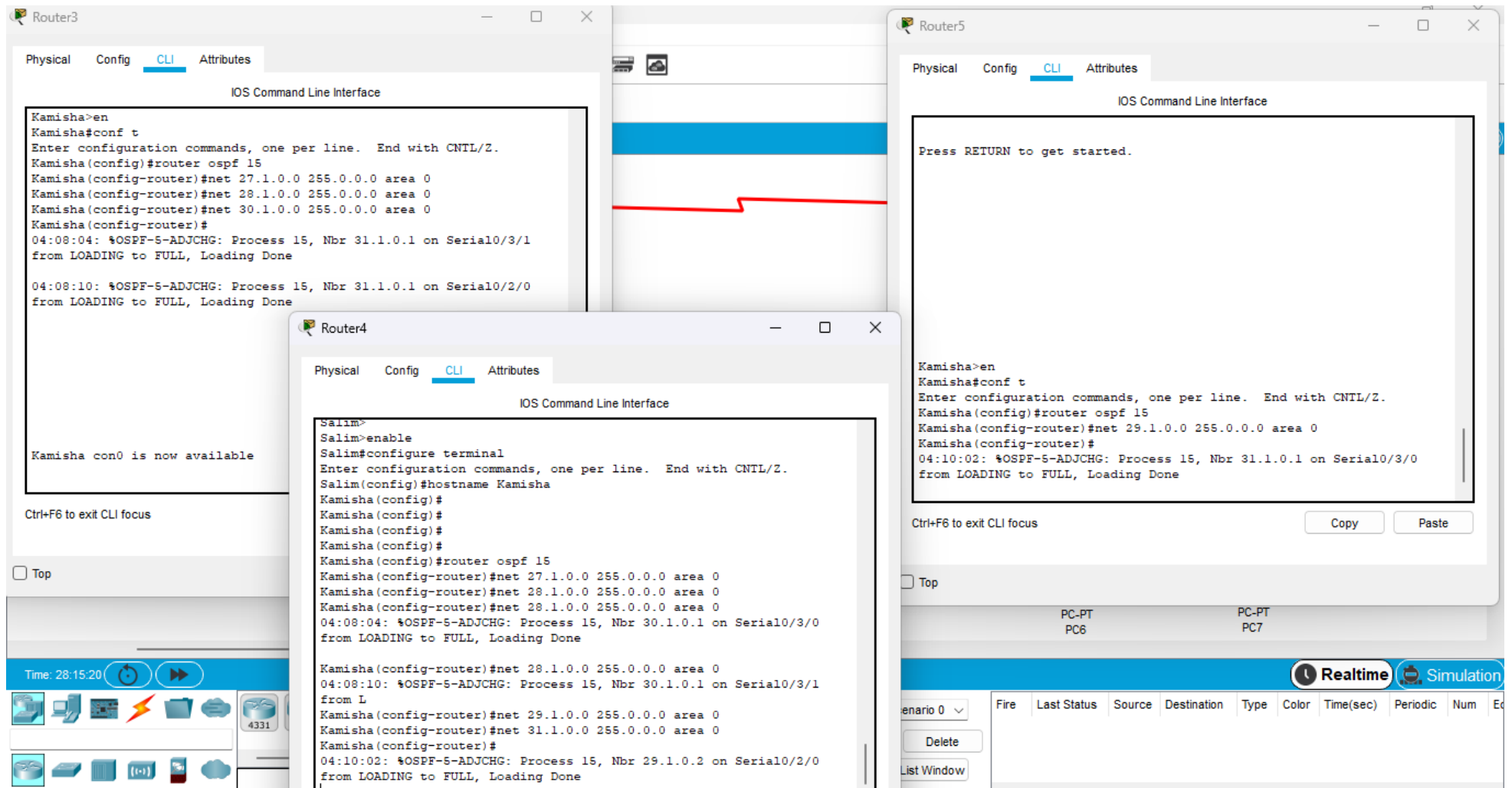
Screenshot of Floating Routing

The screenshot displays a network simulation environment with a central CLI window for Router4. The CLI window shows the following commands and output:

```
Kamisha>enable
Kamisha#
Kamisha#configure terminal
Enter configuration commands, one per line. End with CNIL/Z.
Kamisha(config)#interface FastEthernet0/1
Kamisha(config-if)#no ip address
Kamisha(config-if)#ip address 192.168.0.1 255.255.255.0
Kamisha(config-if)#ip address 192.168.0.1 255.255.255.0
Kamisha(config-if)#no shutdown
Kamisha(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up
Kamisha(config-if)#exit
Kamisha(config)#ip dhcp pool kamisha
Kamisha(dhcp-config)#net 192.168.0.0 255.255.255.0
Kamisha(dhcp-config)#default-router 192.168.0.1
Kamisha(dhcp-config)#exit
Kamisha(config)#
```

The background shows a network topology with several routers (Router0, Router4, Router5, Wireless Router0) and switches (Switch0, Switch3) connected to various PCs (PC0, PC1, PC5, PC6, PC7). The interface includes a toolbar at the top and bottom, and a status bar at the bottom right showing 'Realtime' and 'Simulation' modes.

Screenshot of DHCP



Screenshot of OSPF





**Router3 CLI Output:**

```
Kamisha>en
Kamisha#show ip route
Codes: C - connected, S - static, I - IGRP, 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, E - EGP
       i - IS-IS, 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

 27.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    27.0.0.0/8 is directly connected, Serial0/3/1
C    27.0.0.252/30 is directly connected, Serial0/3/0
C    28.0.0.0/8 is directly connected, Serial0/2/0
O    29.0.0.0/8 [110/128] via 27.1.0.2, 01:32:09, Serial0/3/1
O    30.0.0.0/8 is directly connected, FastEthernet0/0
O    31.0.0.0/8 [110/65] via 27.1.0.2, 01:32:09, Serial0/3/1

Kamisha#
```

**Router5 CLI Output:**

```
Kamisha>en
Kamisha#show ip route
Codes: C - connected, S - static, I - IGRP, 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, E - EGP
       i - IS-IS, 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

 27.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
O    27.0.0.0/8 [110/128] via 29.1.0.1, 01:30:59, Serial0/3/0
O    27.0.0.252/30 [110/192] via 29.1.0.1, 01:30:59, Serial0/3/0
O    28.0.0.0/8 [110/128] via 29.1.0.1, 01:30:59, Serial0/3/0
C    29.0.0.0/8 is directly connected, Serial0/3/0
O    30.0.0.0/8 [110/129] via 29.1.0.1, 01:30:59, Serial0/3/0
O    31.0.0.0/8 [110/65] via 29.1.0.1, 01:30:59, Serial0/3/0

Kamisha#
```

**Simulation Interface:**

Time: 29:41:56

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Ed
0									
delete									
show									

Screenshot of Routing Table