

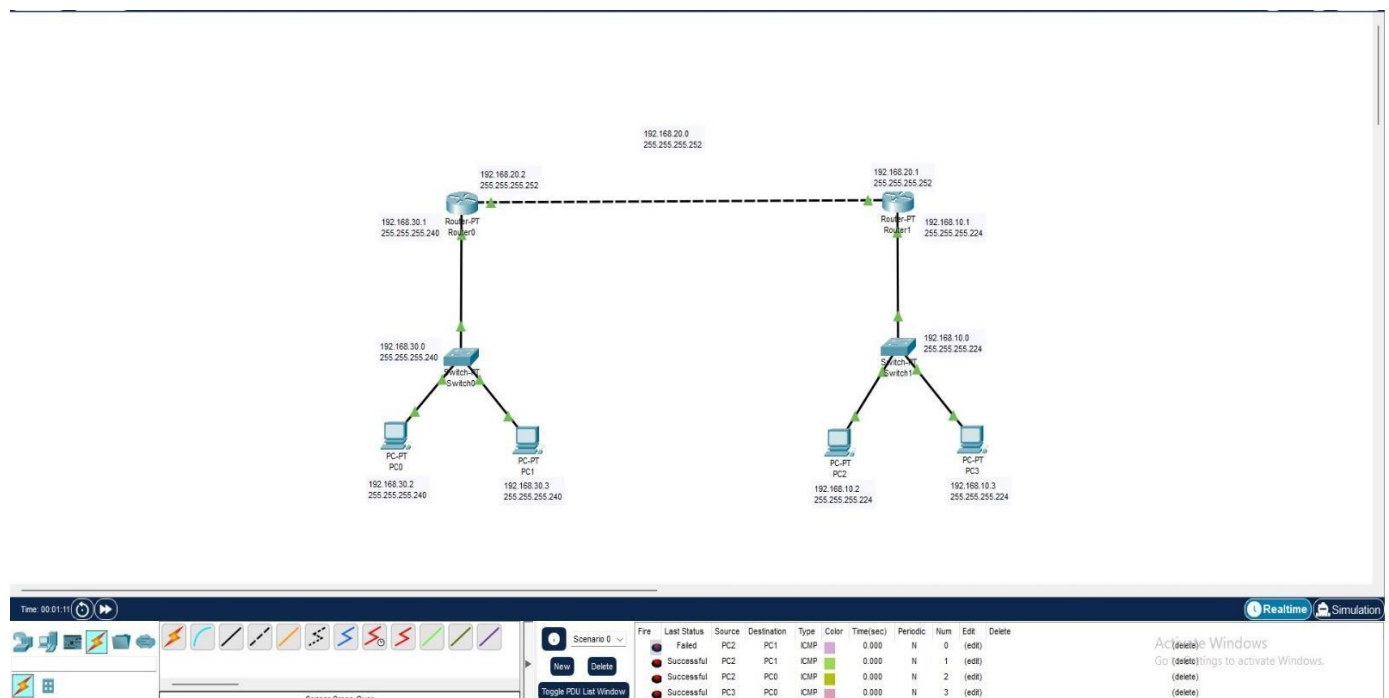
CN LAB Detailed Procedures

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Lab 7: Implementation of RIP Version 1

● Procedure:

1. Open Packet Tracer:
 - Launch Cisco Packet Tracer on your computer.
2. Create a Network:
 - Drag three routers onto the workspace and connect them in a linear topology.
 - Connect a computer to each router using Ethernet cables.
3. Configure IP Addresses:
 - Assign IP addresses to each interface on the routers and computers.
4. Enable RIP Version 1:
 - Access the CLI of each router.
 - Enable RIP routing: `router rip, version 1.`
 - Advertise connected networks: `network <network address>.`
5. Test Connectivity:
 - Use the ping command to test connectivity between the computers



Logical Physical 128 y 200

Router0

Physical Config CLI Attributes

IOS Command Line Interface

Press RETURN to get started.

```
Router>en
Router>conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip address 192.168.30.1 255.255.255.240
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#int fa1/0
Router(config-if)#ip address 192.168.20.1 255.255.255.252
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#network 192.168.30.0
Router(config-router)#network 192.168.20.0
Router(config-router)#exit
Router(config)#exit
Router#
$SYS-S-CONFIG_1: Configured from console by console
Router#
```

Copy Paste

Top

Time: 00:05:06

Scenario 0

Fire

Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Failed	PC2	PC1	ICMP		0.000	N	0	(edit)	
Successful	PC2	PC1	ICMP		0.000	N	1	(edit)	
Successful	PC2	PC3	ICMP		0.000	N	2	(edit)	
Successful	PC3	PC3	ICMP		0.000	N	3	(edit)	

Activate Windows
Go to Settings to activate Windows.
(delete)
(delete)

Router1

Physical Config CLI Attributes

IOS Command Line Interface

Press RETURN to get started!

```
Processor Board ID: PT0123 (0123)
PT200S processor: part number 0, mask 01
Bridding software.
Z.25 software, Version 3.0.0.
4 FastEthernet/IEEE 802.3 interface(s)
2 Down-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
69488K bytes of ATA CompactFlash (Read/Write)

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet1/0, changed state to up

Router>en
Router>conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.224
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#int fa1/0
Router(config-if)#ip address 192.168.20.2 255.255.255.252
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.20.0
Router(config-router)#exit
Router(config)#exit
Router#
$SYS-S-CONFIG_1: Configured from console by console
Router#
```

Copy Paste

Top

Time: 00:03:15

Scenario 0

Fire

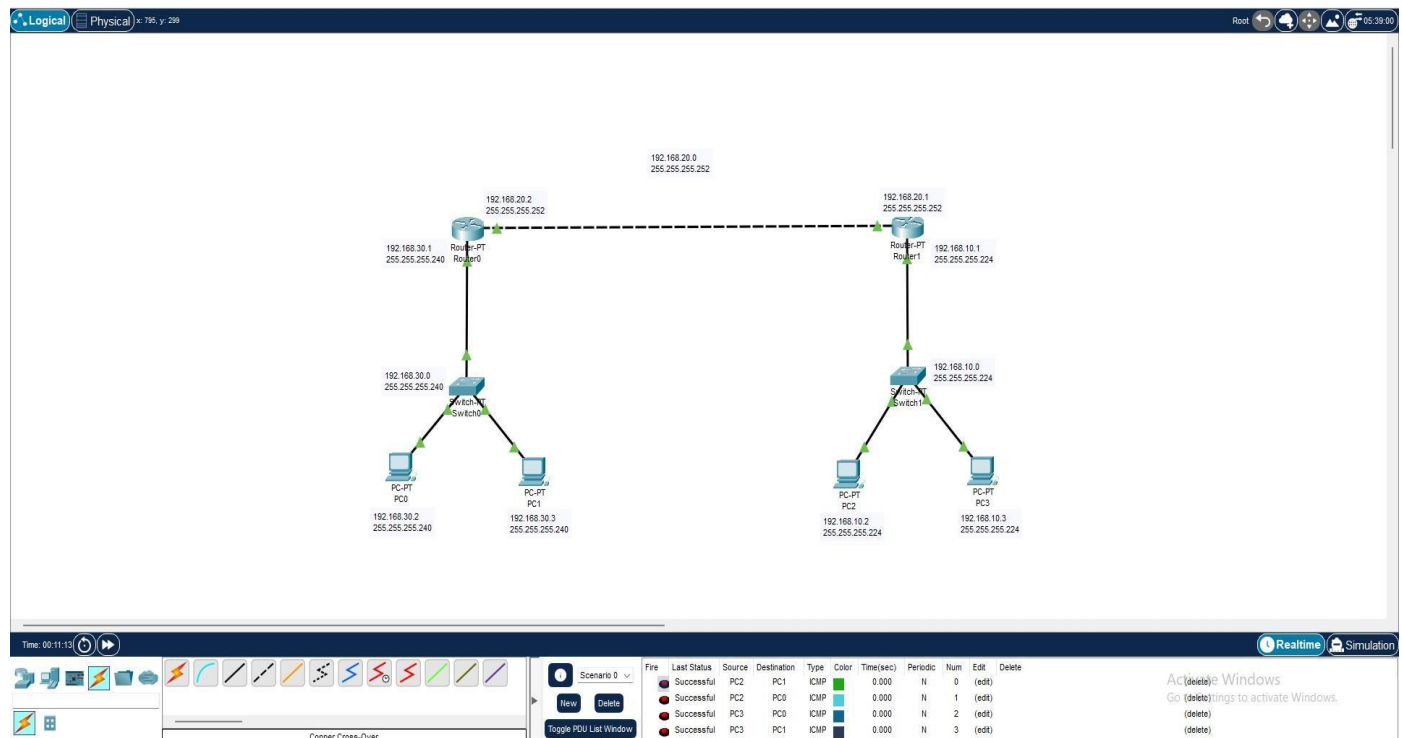
Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Failed	PC2	PC1	ICMP		0.000	N	0	(edit)	
Successful	PC2	PC1	ICMP		0.000	N	1	(edit)	
Successful	PC2	PC3	ICMP		0.000	N	2	(edit)	
Successful	PC3	PC3	ICMP		0.000	N	3	(edit)	

Activate Windows
Go to Settings to activate Windows.
(delete)
(delete)

Lab 8: Implementation of RIP Version 2

● Procedure:

1. Open Packet Tracer:
 - Launch Cisco Packet Tracer on your computer.
2. Create a Network:
 - Drag three routers onto the workspace and connect them in a linear topology.
 - Connect a computer to each router using Ethernet cables.
3. Configure IP Addresses:
 - Assign IP addresses to each interface on the routers and computers.
4. Enable RIP Version 2:
 - Access the CLI of each router.
 - Enable RIP routing: `router rip, version 2.`
 - Advertise connected networks: `network <network address>.`
5. Test Connectivity:
 - Use the ping command to test connectivity between the computers



Logical Physical x 565 y 305

Router0

IOS Command Line Interface

```
Press RETURN to get started.

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip address 192.168.30.1 255.255.255.240
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#int fa1/0
Router(config-if)#ip address 192.168.20.1 255.255.255.252
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 192.168.30.0
Router(config-router)#network 192.168.20.0
Router(config-router)#no auto summary
Router(config-router)#exit
Router#
*STP-S-CFGIG_1: Configured from console by console
Router#
```

Time: 00:10:04

Scenario 0

Fire

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	PC2	PC0	ICMP	0.000	N	0	(edit)			
Successful	PC3	PC0	ICMP	0.000	N	2	(edit)			
Successful	PC3	PC1	ICMP	0.000	N	3	(edit)			

Active Windows

Go (delete) links to activate Windows.

(delete)

(delete)

(delete)

Copper Cross-Over

Toggle PDU List Window

Realtime Simulation

Logical Physical x 1213 y 609

Router1

IOS Command Line Interface

```
Press RETURN to get started.

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip address 192.168.10.1 255.255.255.224
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#int fa1/0
Router(config-if)#ip address 192.168.20.2 255.255.255.252
Router(config-if)#no shut
Router(config-if)#exit
Router(config)#router rip
Router(config-router)#version 2
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.20.0
Router(config-router)#no auto summary
Router(config-router)#exit
Router#
*STP-S-CFGIG_1: Configured from console by console
Router#
```

Time: 00:10:33

Scenario 0

Fire

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	PC2	PC1	ICMP	0.000	N	0	(edit)			
Successful	PC2	PC0	ICMP	0.000	N	1	(edit)			
Successful	PC3	PC0	ICMP	0.000	N	2	(edit)			
Successful	PC3	PC1	ICMP	0.000	N	3	(edit)			

Active Windows

Go (delete) links to activate Windows.

(delete)

(delete)

(delete)

Copper Cross-Over

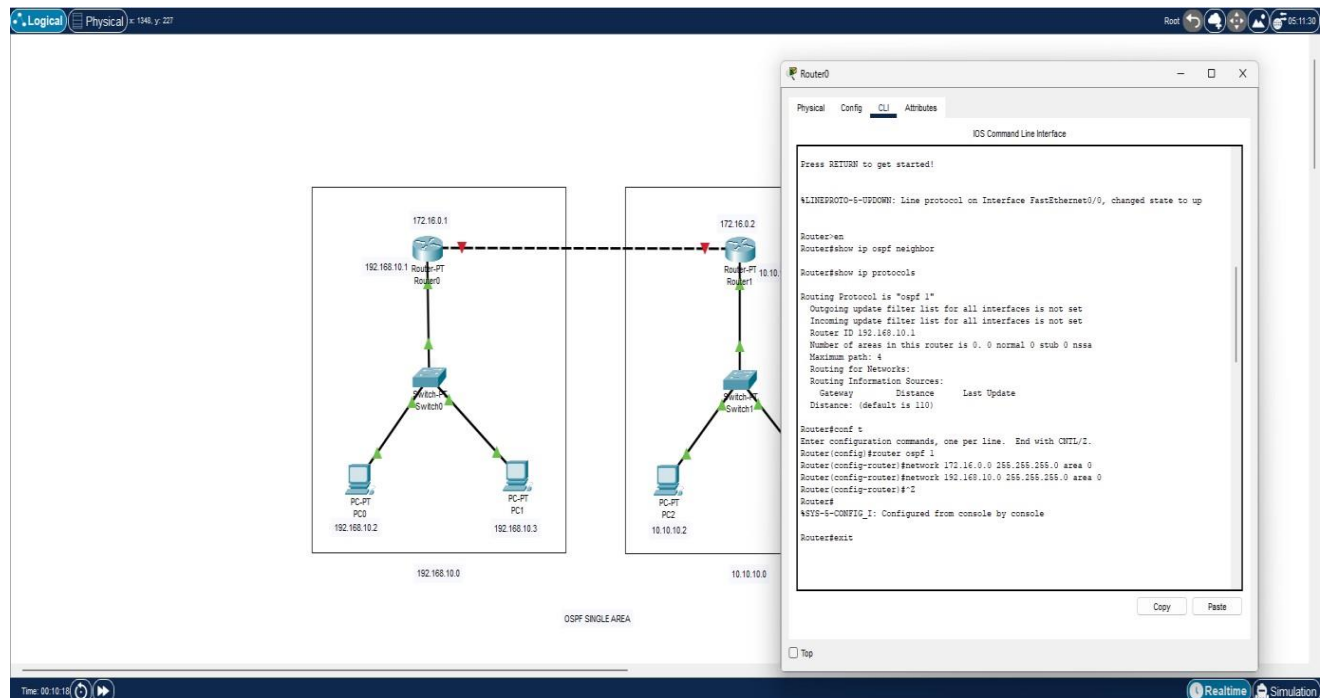
Toggle PDU List Window

Realtime Simulation

Lab 9: Implementation of Single Area OSPF

● Procedure:

1. Open Packet Tracer:
 - Launch Cisco Packet Tracer on your computer.
2. Create a Network:
 - Drag three routers onto the workspace and connect them in a triangular topology.
 - Connect a computer to each router using Ethernet cables.
3. Configure IP Addresses:
 - Assign IP addresses to each interface on the routers and computers.
4. Enable OSPF:
 - Access the CLI of each router.
 - Enable OSPF: `router ospf 1`.
 - Advertise connected networks: `network <network address> area 0`.
5. Test Connectivity:
 - Use the ping command to test connectivity between the computers



Logical Physical c: 665, y: 330 Root 07:32:30

Router0

Physical Config CLI Attributes

IOS Command Line Interface

Press RETURN to get started.

```
Router>en
Router>show ip ospf neighbor
Router>show ip protocols

Routing Protocol is "ospf 1"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 192.169.10.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    172.16.0.0 0.0.0.255 area 0
    192.168.10.0 0.0.0.255 area 0
  Routing Information Sources:
    Gateway         Distance      Last Update
    192.169.10.1    110          00:13:42
  Distance: (default is 110)

Router#
```

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Time: 00:15:05 Realtime Simulation

Logical Physical c: 108, y: 766 Root 08:54:30

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>en
Router>show ip ospf neighbor
Router>show ip protocols

Routing Protocol is "ospf 1"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 10.10.10.1
  Number of areas in this router is 0. 0 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
  Routing Information Sources:
    Gateway         Distance      Last Update
    Distance: (default is 110)

Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 1
Router(config-router)#network 172.16.0.0 255.255.255.0 area 0
Router(config-router)#network 10.10.10.0 255.255.255.0 area 0
Router(config-router)#^Z
Router#
%SYS-5-CONF10_1: Configured from console by console
Router#exit
```

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Time: 00:13:42 Realtime Simulation

Logical Physical x: 410, y: 823

Root

Time: 00:14:05

Router1

Physical Config CLI Attributes

IOS Command Line Interface

Press RETURN to get started.

```

Router>en
Router#show ip protocols
Routing Protocol is "ospf 1"
  Outgoing update filter list for all interfaces is not set
  Incoming update filter list for all interfaces is not set
  Router ID 10.10.10.1
  Number of areas in this router is 1. 1 normal 0 stub 0 nssa
  Maximum path: 4
  Routing for Networks:
    172.16.0.0 0.0.0.255 area 0
    10.10.10.0 0.0.0.255 area 0
  Routing Information Sources:
    Gateway         Distance      Last Update
    10.10.10.1       110           00:06:16
  Distance: (default is 110)

Router#
  
```

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Top

Router-PT Router1

Switch-PT Switch1

PC-PT PC2

PC-PT PC3

10.10.10.0

OSPF SINGLE AREA

Realtime Simulation

Logical Physical x: 1440, y: 507

Root

Time: 00:20:33

Router-PT Router0

Switch-PT Switch0

PC-PT PC0

PC-PT PC1

192.168.10.0

Router-PT Router1

Switch-PT Switch1

PC-PT PC2

PC-PT PC3

10.10.10.0

Scenario 0

New Delete

Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
Successful	PC0	PC2	ICMP		0.000	N	0	(edit)	(delete)	
Successful	PC1	PC2	ICMP		0.000	N	1	(edit)	(delete)	
Successful	PC3	PC1	ICMP		0.000	N	2	(edit)	(delete)	
Successful	PC2	PC0	ICMP		0.000	N	3	(edit)	(delete)	

Activate Windows
Go to Settings to activate Windows.

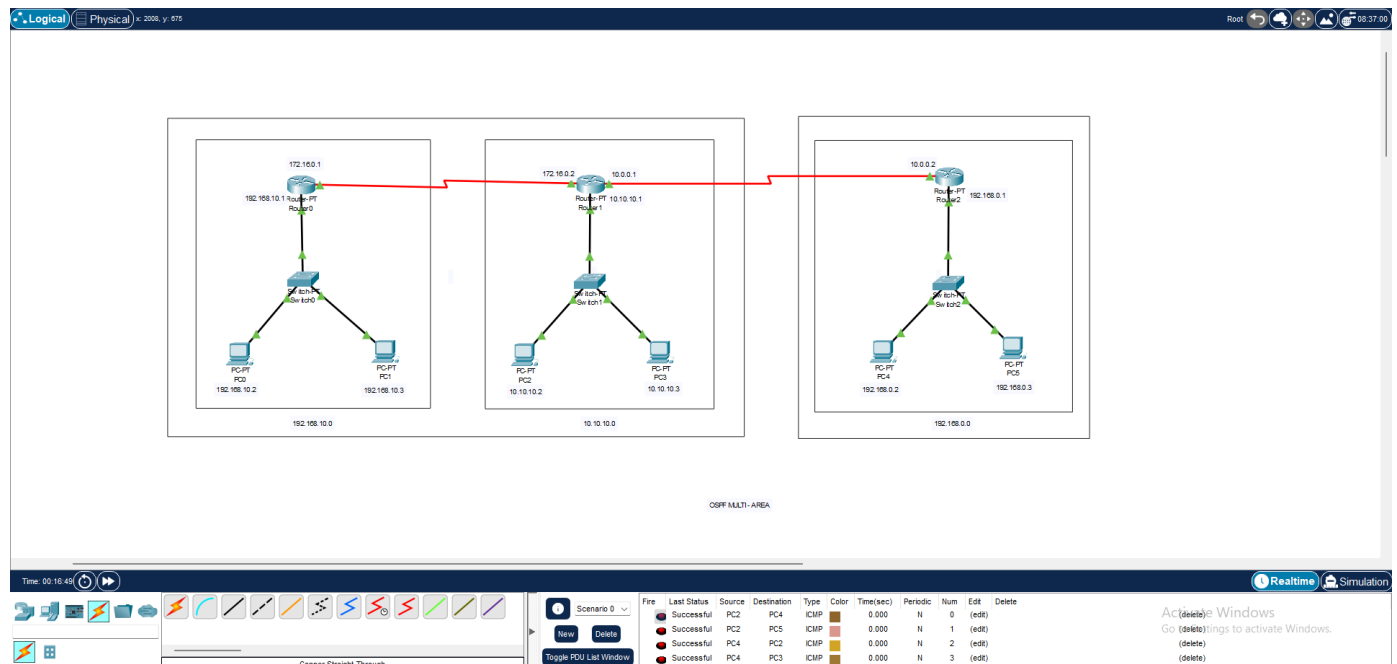
Copper Cross-Over

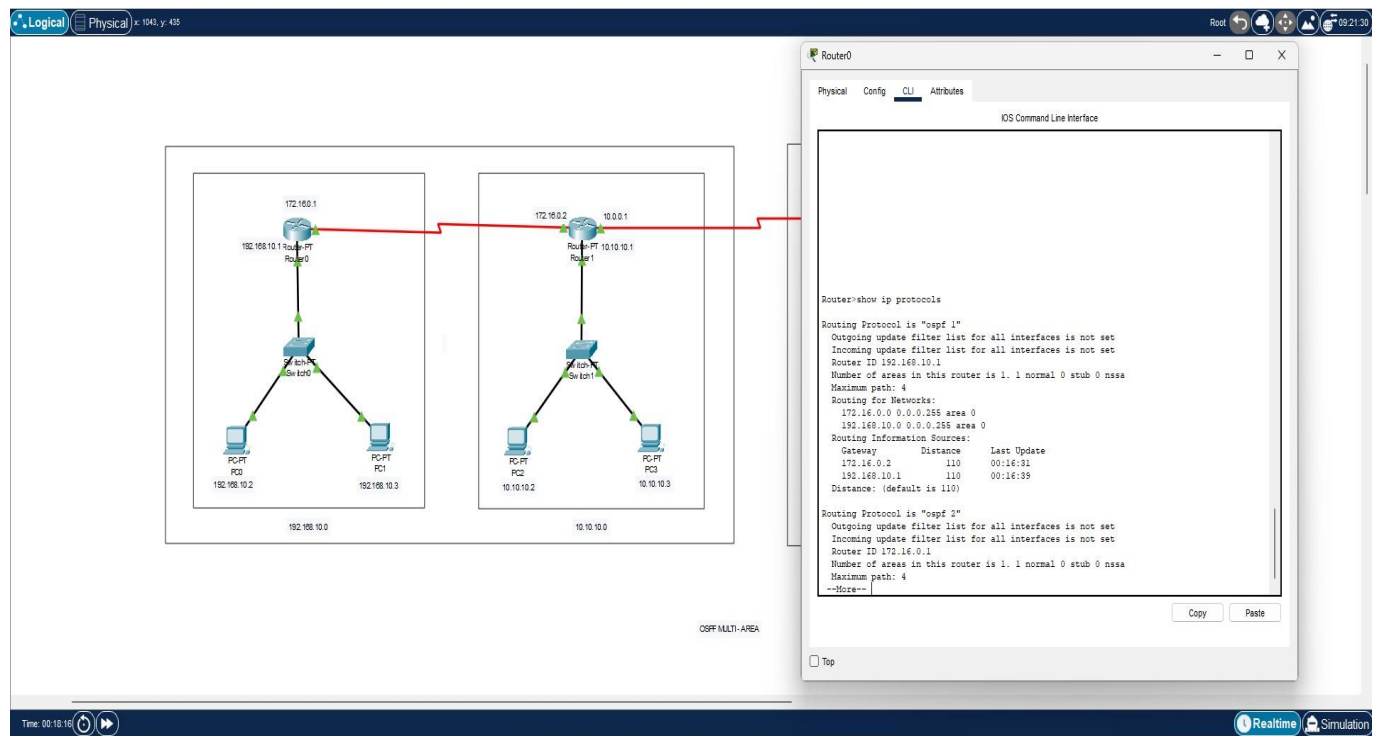
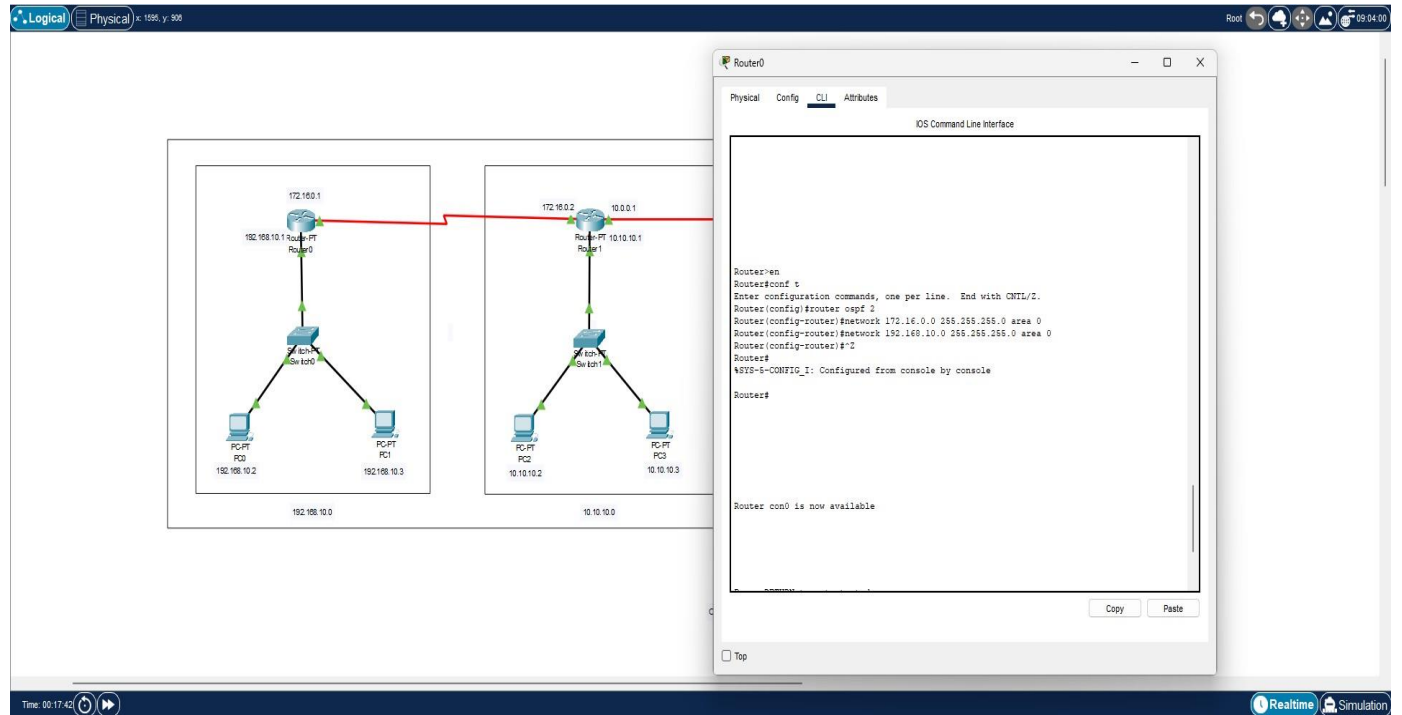
Realtime Simulation

Lab 10: Implementation of Multi Area OSPF

● Procedure:

1. Open Packet Tracer:
 - Launch Cisco Packet Tracer on your computer.
2. Create a Network:
 - Drag four routers onto the workspace and connect them to form two separate OSPF areas with an Area 0 backbone.
 - Connect a computer to each router using Ethernet cables.
3. Configure IP Addresses:
 - Assign IP addresses to each interface on the routers and computers.
4. Enable OSPF:
 - Access the CLI of each router.
 - Enable OSPF on Area 0 routers: `router ospf 1`.
 - Advertise connected networks: `network <network address> area 0`.
 - Enable OSPF on Area 1 routers: `router ospf 1`.
 - Advertise connected networks: `network <network address> area 1`.
5. Test Connectivity:
 - Use the ping command to test connectivity between the computers.





Logical Physical x: 230, y: 717

Root

Time: 00:19:00

Realtime Simulation

OSPF MULTI-AREA

Router1

Physical Config CLI Attributes

IOS Command Line Interface

Router con0 is now available.

Press RETURN to get started.

Router>en
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#router ospf 2
Router(config-router)#network 172.16.0.0 255.255.255.0 area 0
Router(config-router)#network 10.10.10.0 255.255.255.0 area 1
Router(config-router)#
Router#
\$SYS-S-CONFIG_I: Configured from console by console
00:10:17: *OSPF-6-ADJCHG: Process 2, Nbr 192.168.0.1 on Serial3/0 from LOADING to FULL, Loading Done

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Top

Logical Physical x: 175, y: 571

Root

Time: 00:19:44

Realtime Simulation

OSPF MULTI-AREA

Router1

Physical Config CLI Attributes

IOS Command Line Interface

Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface FastEthernet0/0
Router(config-if)#exit
Router(config)#exit
Router#
\$SYS-S-CONFIG_I: Configured from console by console
Router#show ip protocols
Routing Protocol is "ospf 1"
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Router ID 172.16.0.2
Number of areas in this router is 1. 1 normal 0 stub 0 nssa
Maximum path: 4
Routing for Networks:
172.16.0.0 0.0.0.255 area 0
10.10.10.0 0.0.0.255 area 1
Routing Information Sources:
Gateway Distance Last Update
172.16.0.2 110 00:19:02
192.168.10.1 110 00:19:10
Distance: (default is 110)
Routing Protocol is "ospf 2"
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Router ID 10.10.10.1
Number of areas in this router is 2. 2 normal 0 stub 0 nssa
Maximum path: 4
--More--

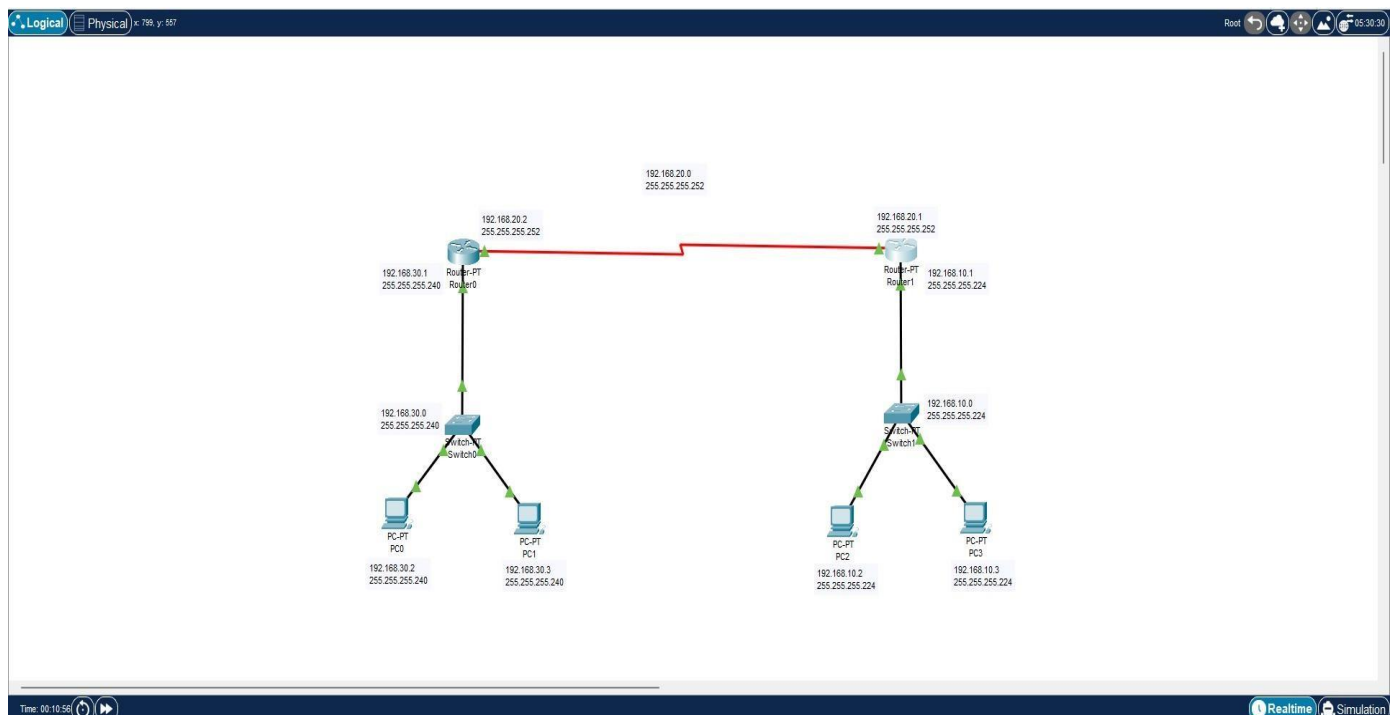
Copy Paste

Top

Lab 11: PPP Configuration

● Procedure:

1. Open Packet Tracer:
 - Launch Cisco Packet Tracer on your computer.
2. Create a Network:
 - Drag two routers onto the workspace and connect them using a serial connection.
 - Connect a computer to each router using Ethernet cables.
3. Configure IP Addresses:
 - Assign IP addresses to each interface on the routers and computers.
4. Configure PPP:
 - Access the CLI of each router.
 - Enter interface configuration mode for the serial interface: interface serial 0/0/0.
 - Enable PPP encapsulation: encapsulation ppp.
5. Test Connectivity:
 - Use the ping command to test connectivity between the computers.



Logical Physical x 1440 y 41

Router0

IOS Command Line Interface

```
Press RETURN to get started.

Router>en
Router(config)#
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int serial 2/0
Router(config-if)#clock rate 115200
This command applies only to DCE interfaces
Router(config-if)#encapsulation ppp
Router(config-if)#ppp ?
authentication Set PPP link authentication method
chap Set CHAP authentication parameters
pap Set PAP authentication parameters
Router(config-if)#ppp authentication chap
Router(config-if)#ip address 192.168.20.2 255.255.255.252
Router(config-if)#no shut
Router(config-if)#end
Router#
$SYS-6-CONFIG_I: Configured from console by console

Router#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

Time: 00:04:34

Scenario 0

File Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

Serial DTE

Activate Windows
Go to Settings to activate Windows.

Logical Physical x 1440 y 410

Router0

IOS Command Line Interface

```
chap Set CHAP authentication parameters
pap Set PAP authentication parameters
Router(config-if)#ppp authentication chap
Router(config-if)#ip address 192.168.20.2 255.255.255.252
Router(config-if)#no shut
Router(config-if)#end
Router#
$SYS-6-CONFIG_I: Configured from console by console

Router#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router#show interface serial 2/0
Serial2/0 is up, line protocol is down (disabled)
Hardware is HD44870
Internet address is 192.168.20.2/30
MTU 1500 bytes, BW 128 Kbit, DLY 300000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set, keepalive set (10 sec)
LCP Closed
Closed: L2TP, BRIDGE, IPsec, CDP, CDP, LLC, BACP
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0 (size/max/drops); Total output drops: 0
Queueing strategy: weighted fair
Output queue: 0/1000/64/0 (size/max total/threshold/drops)
Conversations 0/0/256 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 94 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
0 packets input, 0 bytes, 0 no buffer
Received 0 broadcasts, 0 runs, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
0 packets output, 0 bytes, 0 underruns
--More--
```

Time: 00:09:52

Scenario 0

File Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

Serial DTE

Activate Windows
Go to Settings to activate Windows.

Logical Physical x 400 y 20

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Low-speed serial(sync/async) network interface(s)
32K bytes of non-volatile configuration memory.
63490K bytes of ATA CompactFlash (Read/Write)

Press RETURN to get started!

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
%LINE-5-CHANGED: Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Serial2/0, changed state to down

Router>en
Router>conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#int serial 2/0
Router(config-if)#encapsulation ppp
Router(config-if)#ppp ?
    authentication Set PPP link authentication method
    chap           Set CHAP authentication parameters
    pap           Set PAP authentication parameters
Router(config-if)#ppp authentication chap
Router(config-if)#ip address 192.168.20.1 255.255.255.252
Router(config-if)#no shut
Router(config-if)#end
Router#
MSTP-8-CONFIG_1: Configured from console by console

Router#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
Router#
```

Copy Paste

Time: 00:07:37

Scenario 0

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

Activate Windows
Go to Settings to activate Windows.

```
graph TD
    Router1[Router1] --- S20[Serial2/0]
    S20 --- Remote[192.168.20.1/255.255.255.252]
    Router1 --- F0/0[FastEthernet0/0]
    F0/0 --- Switch1[Switch1]
    Switch1 --- E0/20[Ethernet0/20]
    E0/20 --- PC2[PC-PT PC2]
    Switch1 --- E0/24[Ethernet0/24]
    E0/24 --- PC3[PC-PT PC3]
```

Logical Physical x 400 y 400

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router#show interface serial 2/0
Serial2/0 is up, line protocol is down (disabled)
Hardware is HD44570
Internet address is 192.168.20.1/30
MTU 1500 bytes, BW 128 Kbit, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set, keepalive set (10 sec)
LCP Closed
Closed: LENCAP, BRIDGECP, IPCP, CCP, CDPCP, LLC2, BACP
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0 (size/max/drops); Total output drops: 0
Queueing strategy: weighted fair
Output queue: 0/1000/64/0 (size/max total/threshold/drops)
    Conversations 0/0/256 (active/max active/max total)
    Reserved Conversations 0/0 (allocated/max allocated)
    Available Bandwidth 56 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    0 packets output, 0 bytes, 0 underruns
--More--
```

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Time: 00:10:26

Scenario 0

Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete

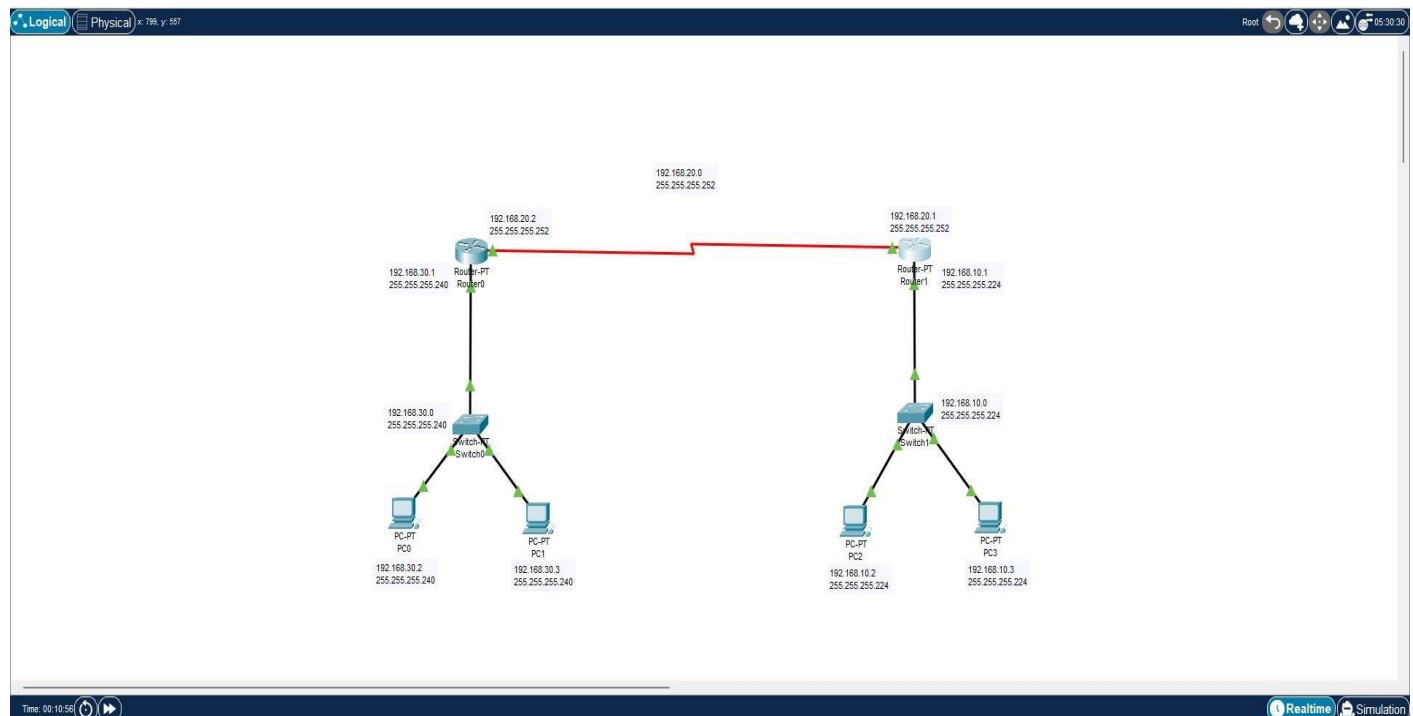
Activate Windows
Go to Settings to activate Windows.

```
graph TD
    Router1[Router1] --- S20[Serial2/0]
    S20 --- Remote[192.168.20.1/255.255.255.252]
    Router1 --- F0/0[FastEthernet0/0]
    F0/0 --- Switch1[Switch1]
    Switch1 --- E0/20[Ethernet0/20]
    E0/20 --- PC2[PC-PT PC2]
    Switch1 --- E0/24[Ethernet0/24]
    E0/24 --- PC3[PC-PT PC3]
```

Lab 12: HDLC Configuration

- **Procedure:**

1. Open Packet Tracer:
 - Launch Cisco Packet Tracer on your computer.
2. Create a Network:
 - Drag two routers onto the workspace and connect them using a serial connection.
 - Connect a computer to each router using Ethernet cables.
3. Configure IP Addresses:
 - Assign IP addresses to each interface on the routers and computers.
4. Configure HDLC:
 - Access the CLI of each router.
 - Enter interface configuration mode for the serial interface: interface serial 0/0/0.
 - Enable HDLC encapsulation: encapsulation hdlc.
5. Test Connectivity:
 - Use the ping command to test connectivity between the computers.



Logical Physical x 335, y 541

Time: 00:15:19

Router0

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>en
Router>conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial 2/0
Router(config-if)#encapsulation hdlc
Router(config-if)#clock rate 120000
This command applies only to DCE interfaces
Router(config-if)#ip address 192.168.20.2 255.255.255.252
Router(config-if)#no shut
Router(config-if)#end
Router#
*NSX-S-CONFIG-I: Configured from console by console

Router#show interface serial 2/0
Serial2/0 is up, line protocol is down (disabled)
Hardware is HD64570
Internet address is 192.168.20.2/30
MTU 1500 bytes, BW 128 Kbit, DLY 20000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set, keepalive set (10 sec)
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0 (size/max/drops); Total output drops: 0
Queueing strategy: weighted fair
Output queue: 0/1000/44/0 (size/max total/threshold/drops)
Conversations 0/0/256 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 96 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts, 0 runs, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 0 interface resets
  0 output buffer failures, 0 output buffers swapped out
--More--
```

Copy Paste

Time: 00:15:19

Realtime Simulation

```
graph TD
    Router0[Router0] --- Switch0[Switch0]
    Switch0 --- PC1[PC1]
    Switch0 --- PC2[PC2]
```

Logical Physical x 154, y 352

Time: 00:18:45

Router1

Physical Config CLI Attributes

IOS Command Line Interface

```
Router>en
Router>conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface serial 2/0
Router(config-if)#encapsulation hdlc
Router(config-if)#
*LINEPROTO-S-UPDOWN: Line protocol on Interface Serial2/0, changed state to up
Router(config-if)#ip address 192.168.20.1 255.255.255.252
Router(config-if)#no shut
Router(config-if)#end
Router#
*NSX-S-CONFIG-I: Configured from console by console

Router#show interface serial 2/0
Serial2/0 is up, line protocol is up (connected)
Hardware is HD64570
Internet address is 192.168.20.1/30
MTU 1500 bytes, BW 128 Kbit, DLY 20000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation HDLC, loopback not set, keepalive set (10 sec)
Last input never, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0 (size/max/drops); Total output drops: 0
Queueing strategy: weighted fair
Output queue: 0/1000/44/0 (size/max total/threshold/drops)
Conversations 0/0/256 (active/max active/max total)
Reserved Conversations 0/0 (allocated/max allocated)
Available Bandwidth 96 kilobits/sec
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts, 0 runs, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
  0 packets output, 0 bytes, 0 underruns
  0 output errors, 0 collisions, 0 interface resets
  0 output buffer failures, 0 output buffers swapped out
--More--
```

Copy Paste

Time: 00:18:45

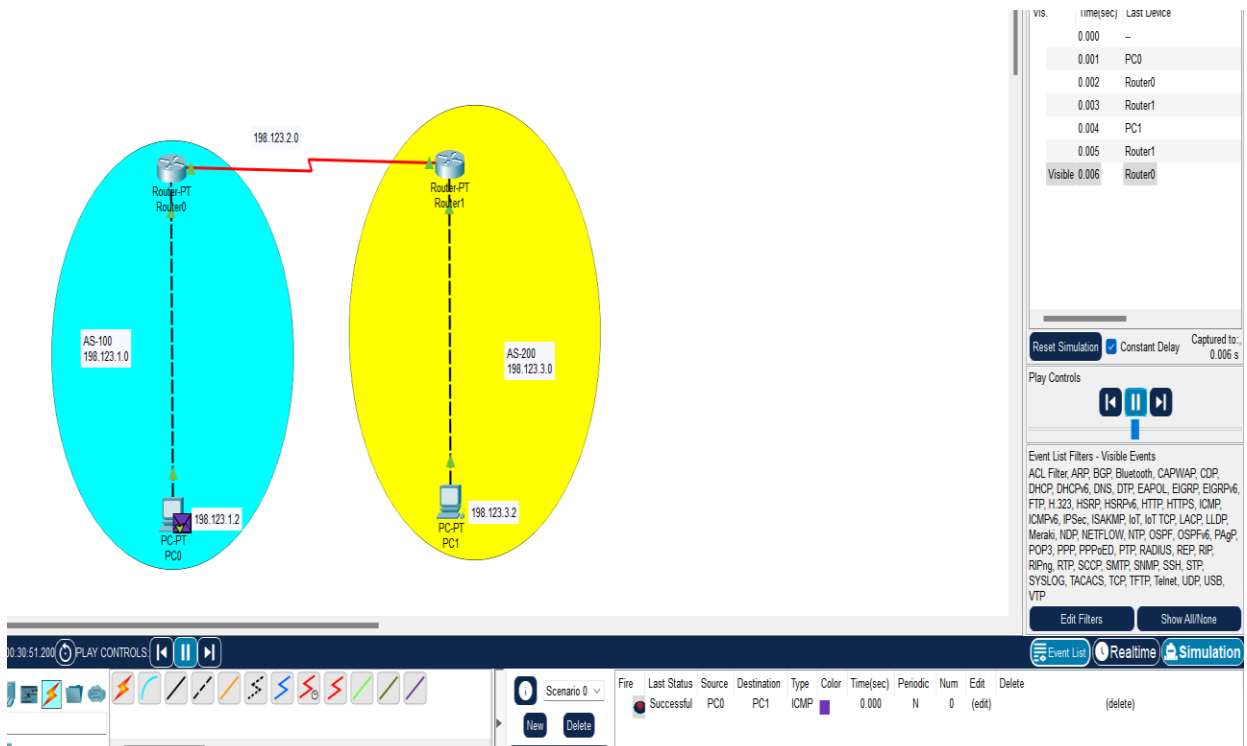
Realtime Simulation

```
graph TD
    Router1[Router1] --- Switch1[Switch1]
    Switch1 --- PC2[PC2]
    Switch1 --- PC3[PC3]
```


Lab 13: Implementation of BGP

● Procedure:

1. Open Packet Tracer:
 - Launch Cisco Packet Tracer on your computer.
2. Create a Network:
 - Drag two routers onto the workspace and connect them to form separate autonomous systems (AS).
 - Connect a computer to each router using Ethernet cables.
3. Configure IP Addresses:
 - Assign IP addresses to each interface on the routers and computers.
4. Enable BGP:
 - Access the CLI of each router.
 - Enable BGP on each router: `router bgp <AS number>`.
 - Establish BGP peering: `neighbor <IP address> remote-as <AS number>`.
 - Advertise connected networks: `network <network address>`.
5. Test Connectivity:
 - Use the ping command to test connectivity between the computers.



Lab 14: Implementation of EIGRP

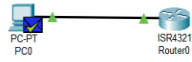
● Procedure:

1. Open Packet Tracer:
 - Launch Cisco Packet Tracer on your computer.
2. Create a Network:
 - Drag three routers onto the workspace and connect them in a triangular topology.
 - Connect a computer to each router using Ethernet cables.
3. Configure IP Addresses:
 - Assign IP addresses to each interface on the routers and computers.
4. Enable EIGRP:
 - Access the CLI of each router.
 - Enable EIGRP: `router eigrp 1`.
 - Advertise connected networks: `network <network address>`.
5. Test Connectivity:
 - Use the ping command to test connectivity between the computers.

Lab 15: Telnet Configuration

● Procedure:

1. Open Packet Tracer:
 - Launch Cisco Packet Tracer on your computer.
2. Create a Network:
 - Drag a router and a computer onto the workspace.
 - Connect the computer to the router using an Ethernet cable.
3. Configure IP Addresses:
 - Assign IP addresses to the router and computer.
4. Enable Telnet:
 - Access the CLI of the router.
 - Enter global configuration mode: `enable`, `configure terminal`.
 - Enable Telnet: `line vty 0 4`, `password cisco`, `login`.
5. Test Telnet Connectivity:
 - Use the Command Prompt on the computer to connect to the router using Telnet: `telnet <router IP address>`.



0.000

--

0.001	PC0
Visible 0.002	Router0

Reset Simulation ☒ Constant Delay Captured to: 0.002 s

Play Controls

◀

⏸

▶

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPsec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIP, RIPv2, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Event List Realtime Simulation

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	Router0	ICMP		0.000	N	0	(edit)	(delete)

0:10:33.251 PLAY CONTROLS



Scenario 0

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	Router0	ICMP		0.000	N	0	(edit)	(delete)