

MALIK ZOHAIB MUSTAFA

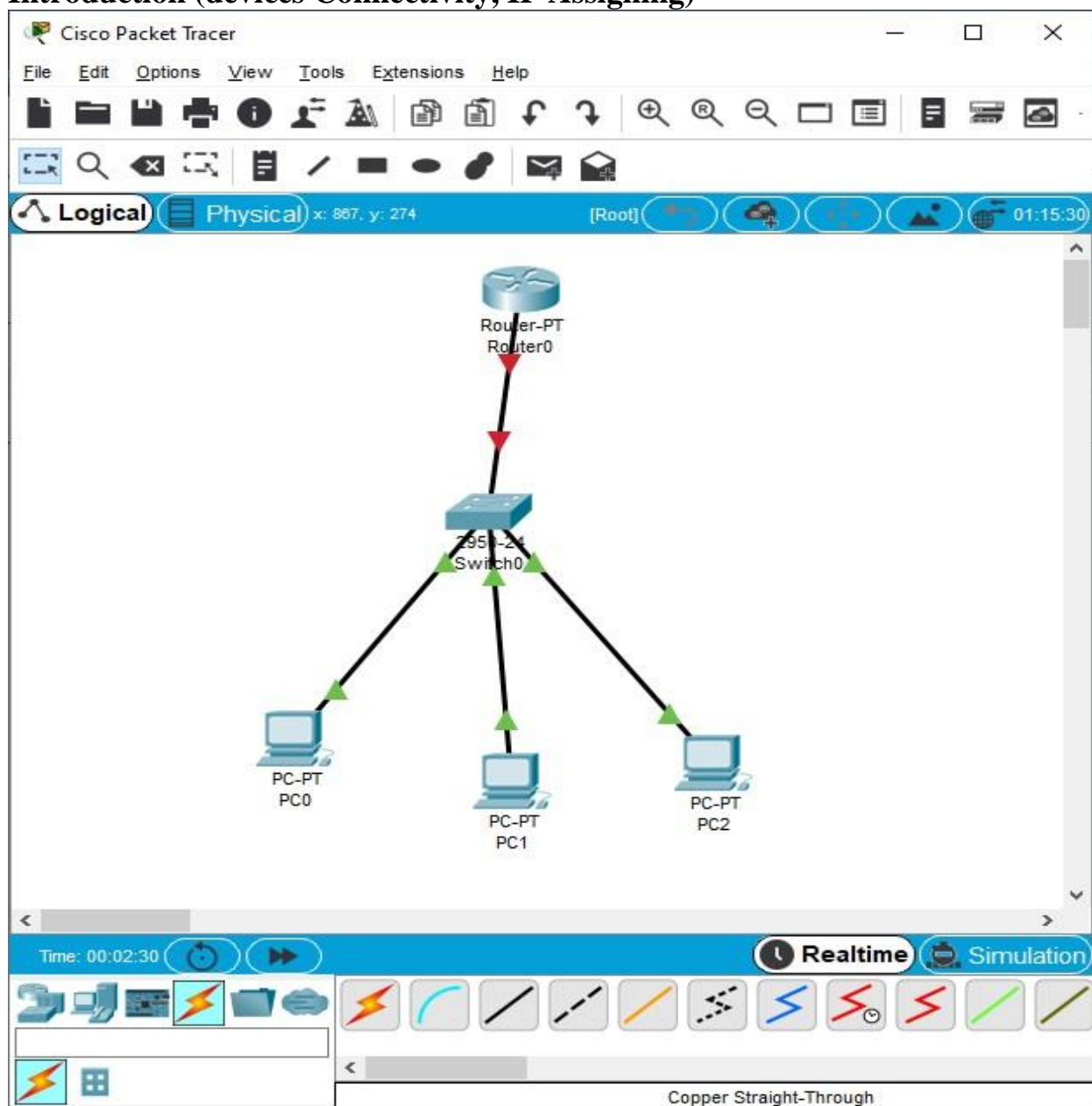
01-134192-030

BSCS-4B

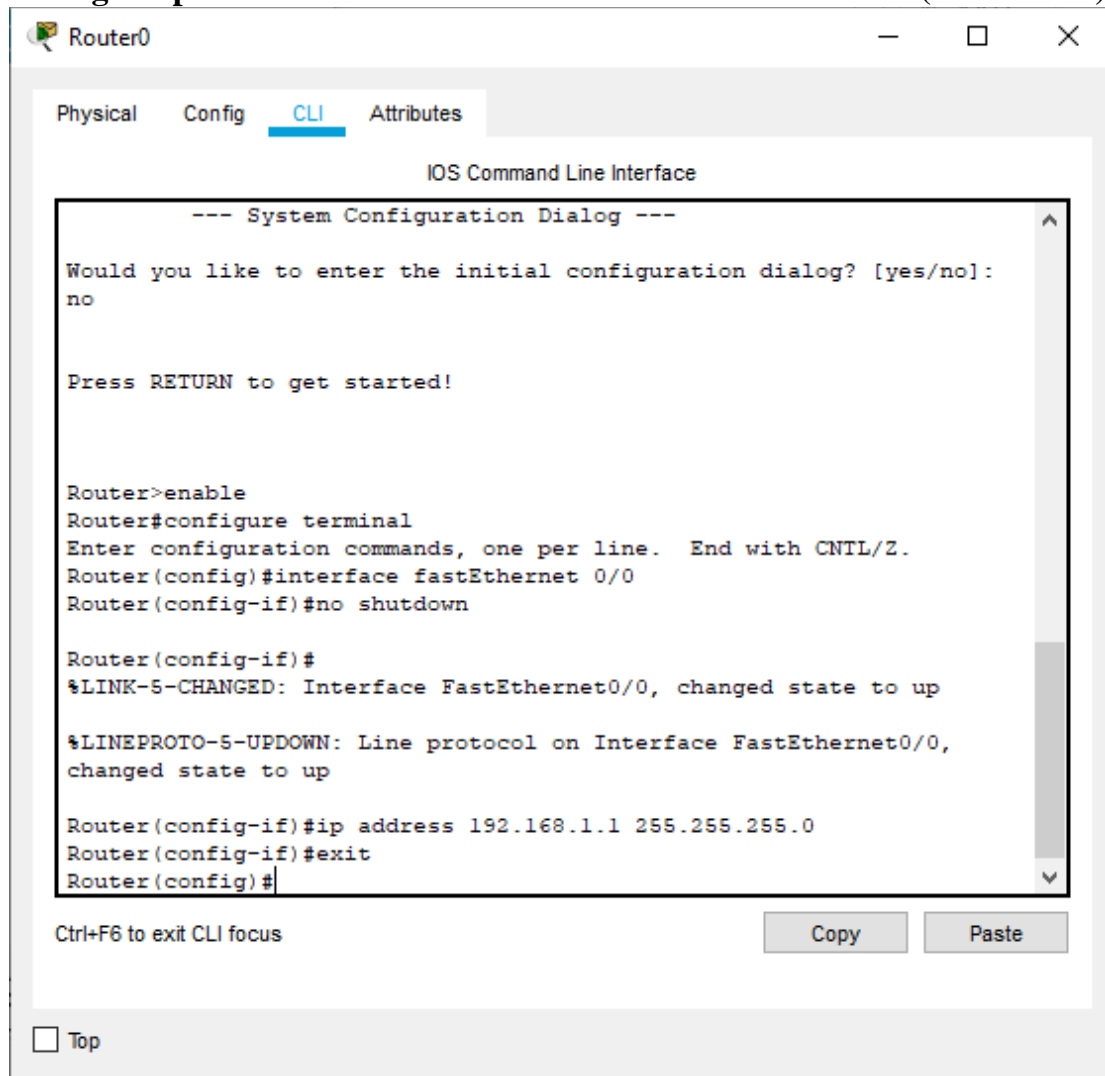
Q1: Configuration of Dynamic Host Configuration Protocol (DHCP)

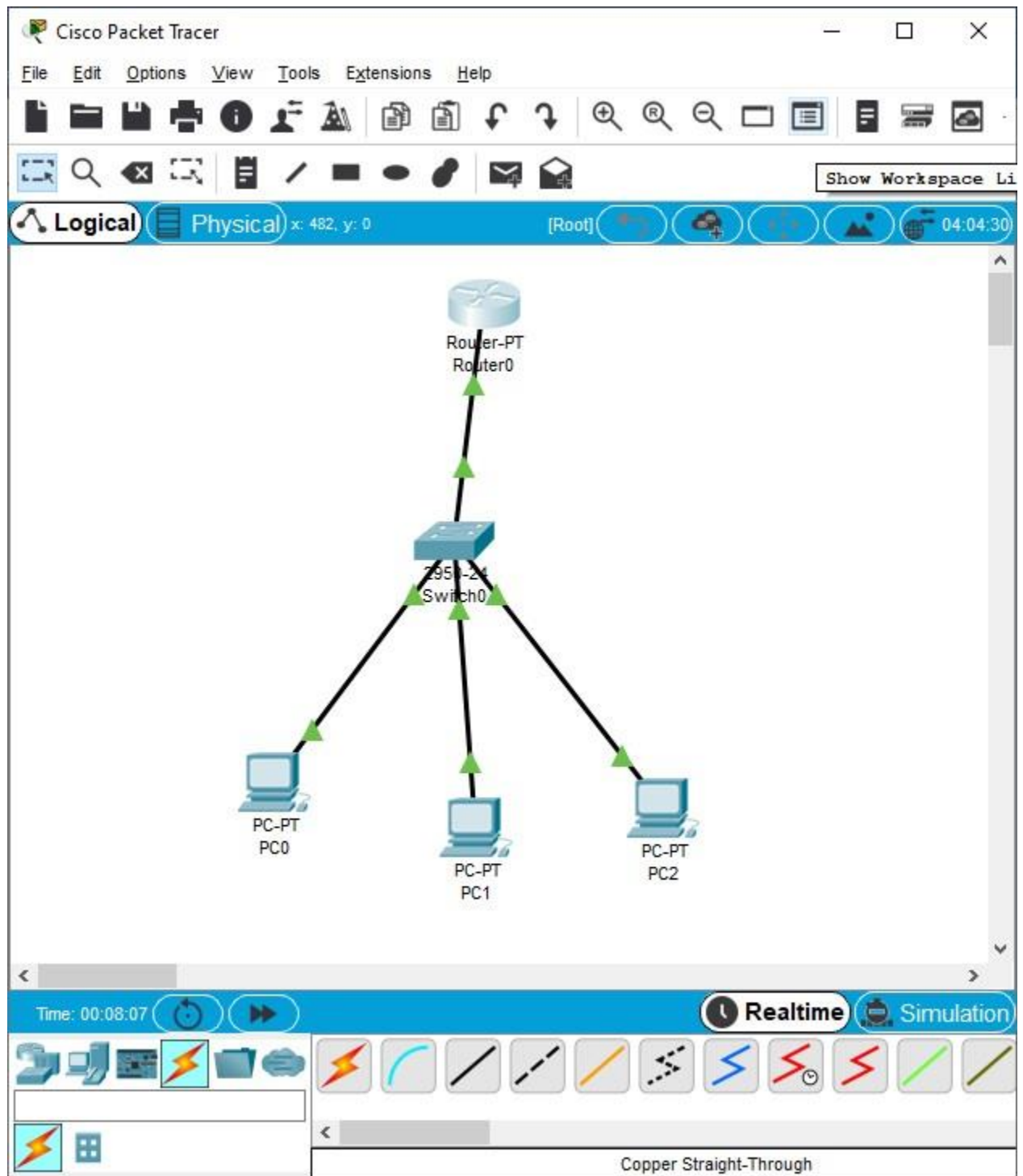
Tasks:

Introduction (devices Connectivity, IP Assigning)

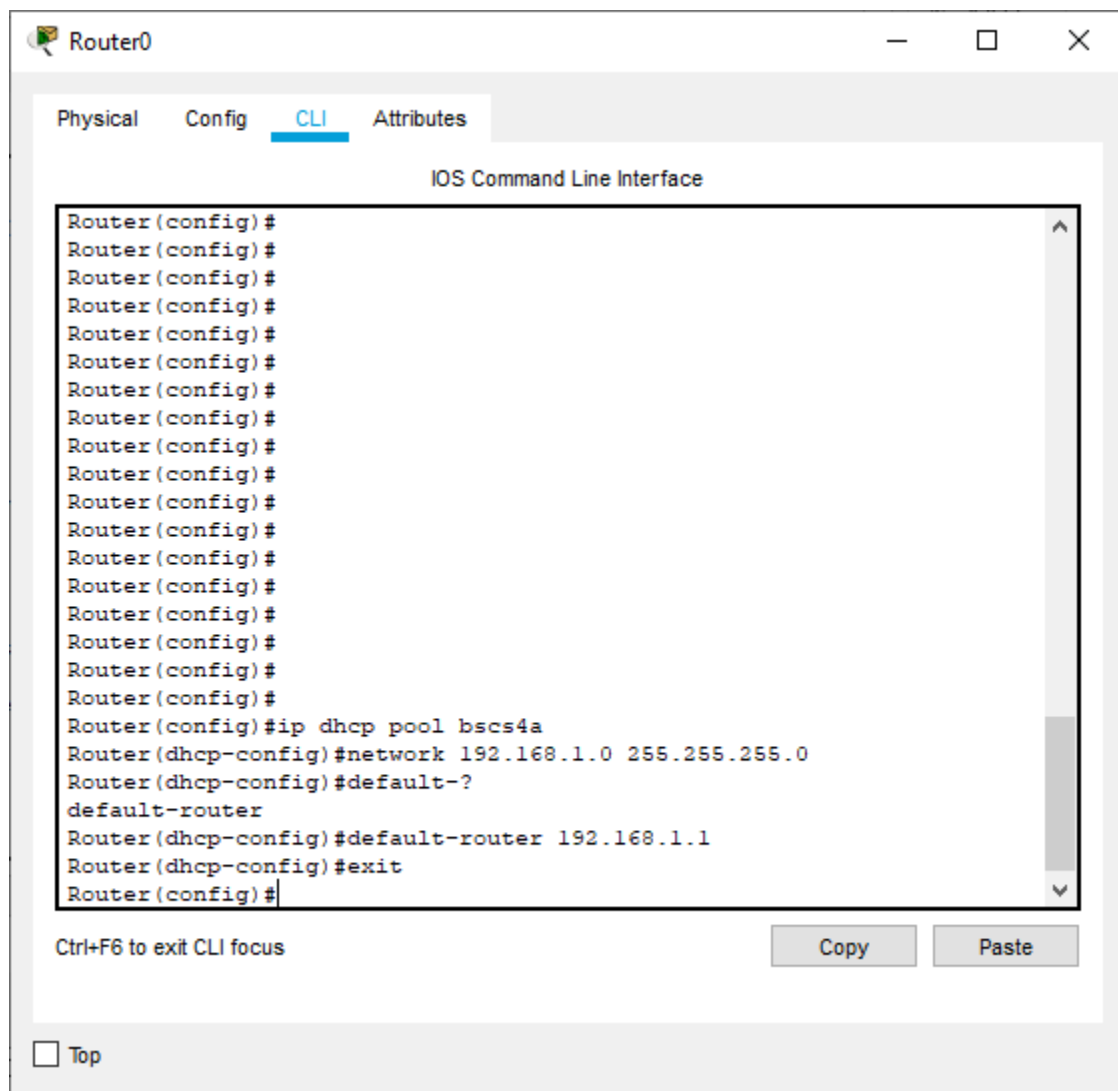


Giving the port Fa0/0 no shutdown command and IP address (192.168.1.1)





Now creating a DHCP pool named (bscs4a) to automatically assign IPs to PCs connected to the router.



Now we will assign the IPs to computer by DHCP pool. Assigning IP to PC0.

PC0

Physical Config **Desktop** Programming Attributes

☒ DHCP ☐ Static DHCP request successful.

IP Address 192.168.1.2

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::260:47FF:FE81:2BCE

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

Similarly, assigning IP to PC1, PC2.

PC1

Physical Config **Desktop** Programming Attributes

☒ DHCP ☐ Static DHCP request successful.

IP Address 192.168.1.3

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::2E0:F9FF:FEC4:9DA0

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

Physical CDn fig E'eskcjz' PrDgrammin g Attributes

☒ DHCP

☐ Static

DHCP request successful.

IP Address

192.168.1.4

SubMdlH&st

255.255.255.0

Default Gateway

192.168.1.1

DNS Server

0.0.0.0

IPv6 Configuration

☐ DHCP

☐ AutoCr g

☐ Static

Link Local Address

FE80::250:FFF:FE83:3E4B

IPv6 Gateway

IPv6 DNS Server

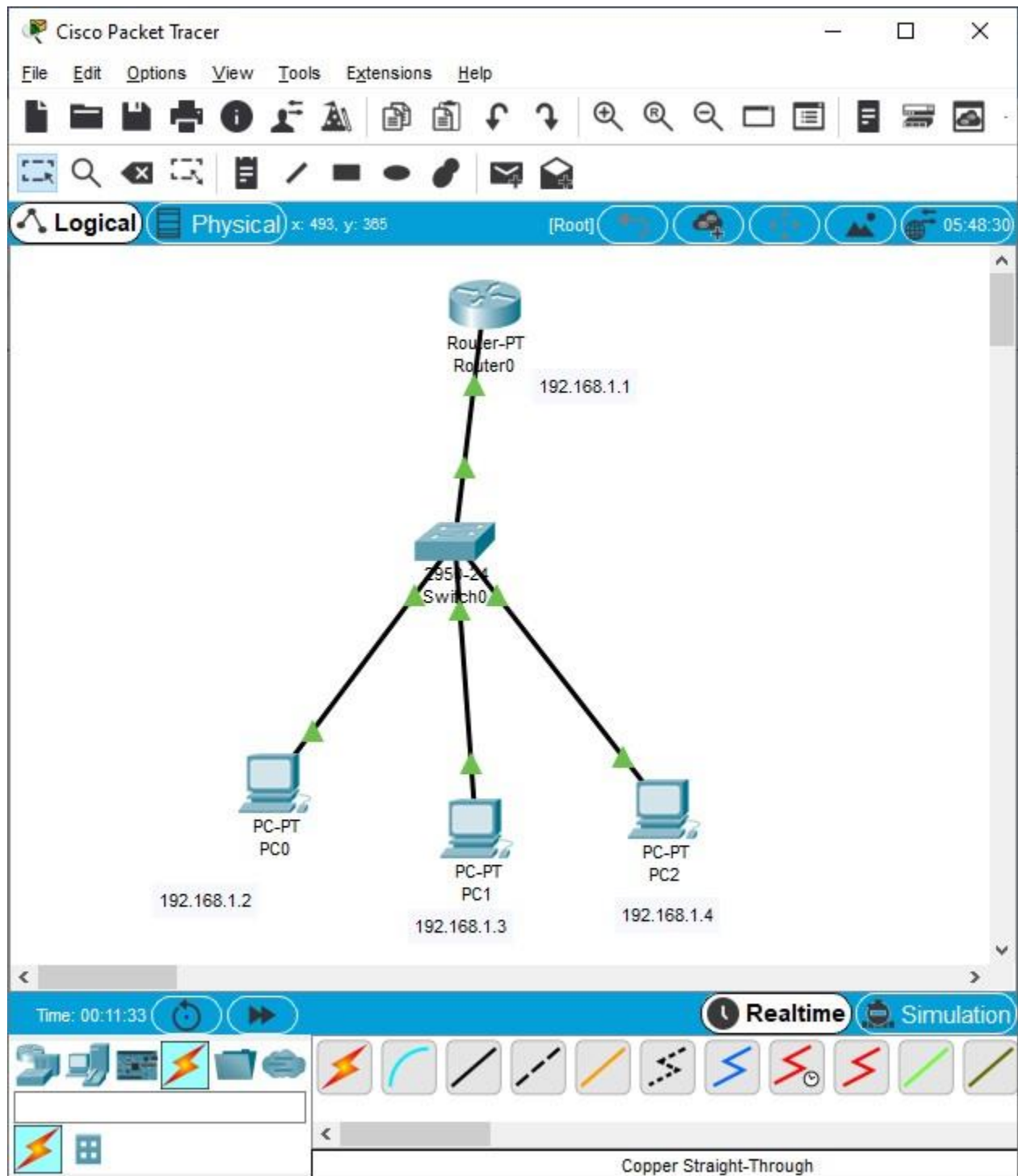
802.1X

@ Use 802.1X Security

Authentication

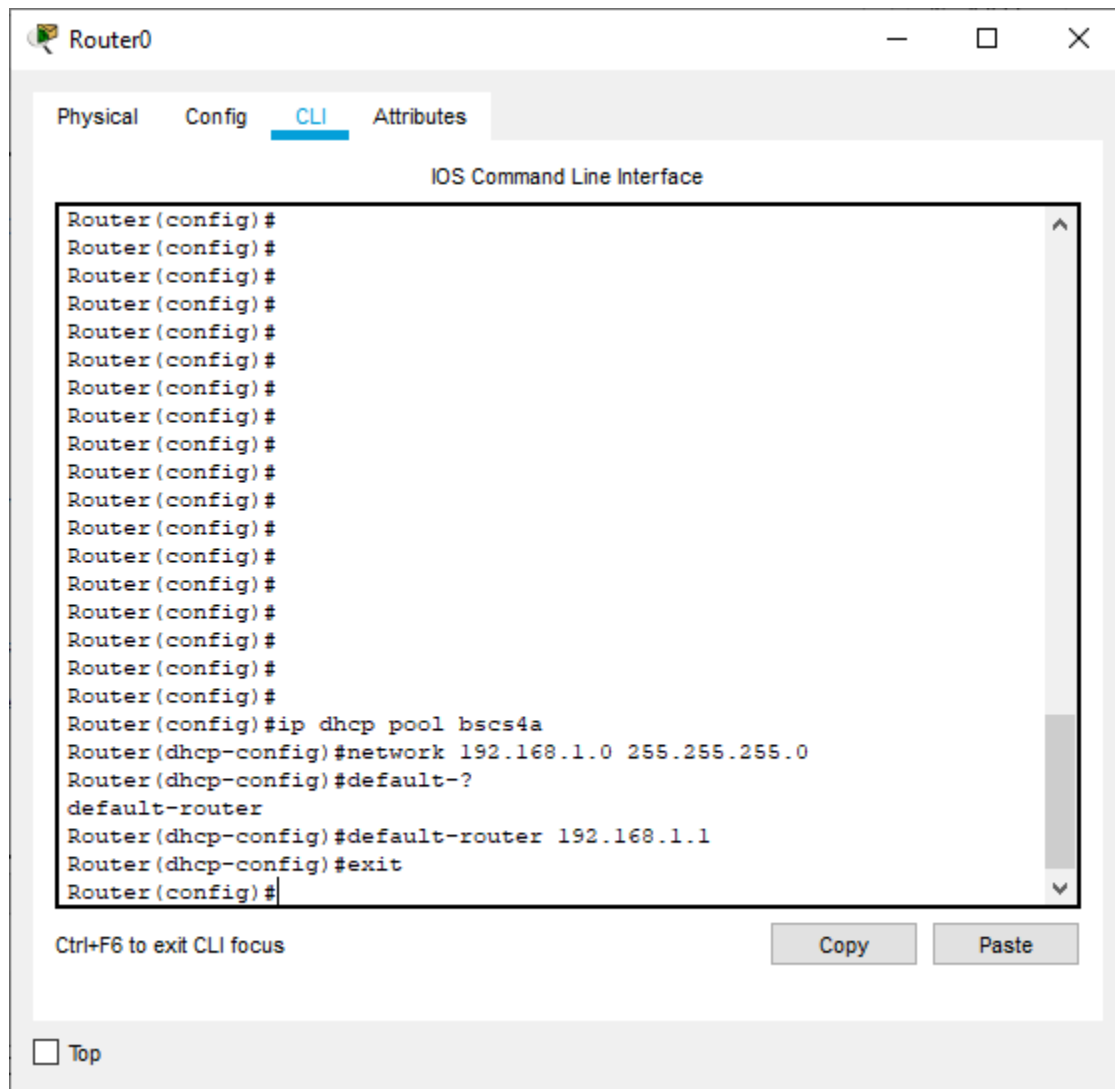
IJD5

Username



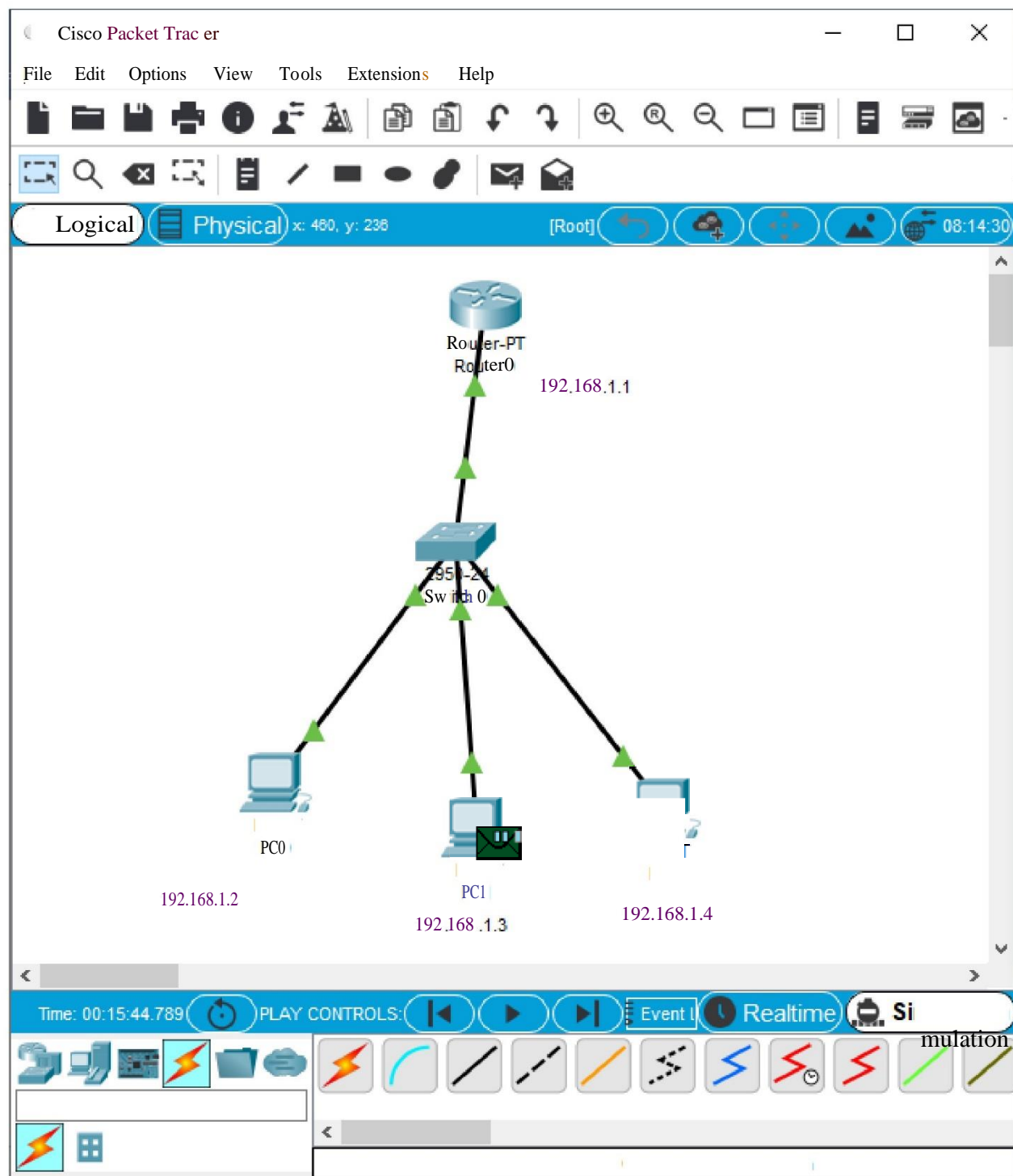
Implementation of Dynamic Host Configuration protocol

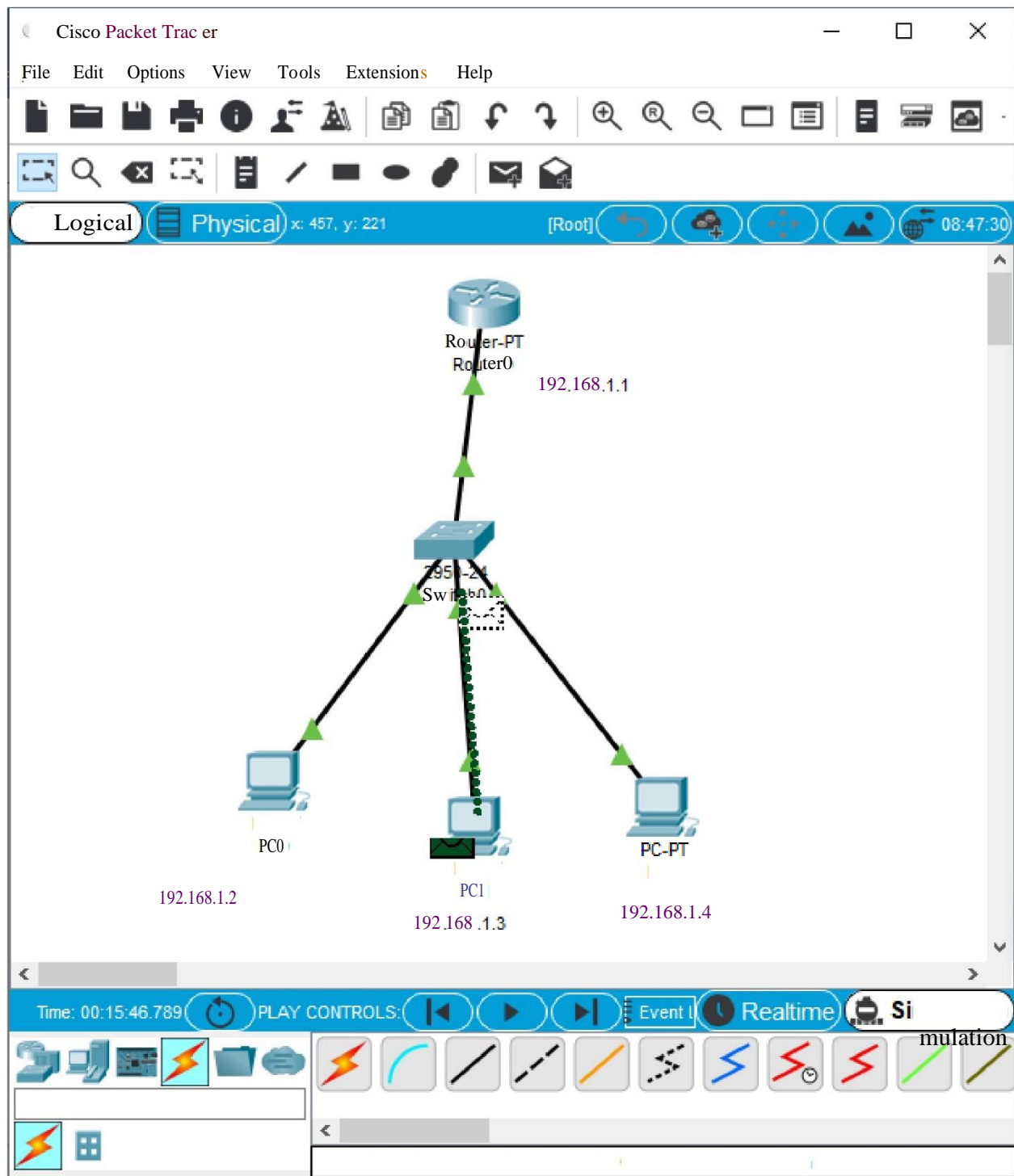
Now creating a DHCP pool named (bscs4a) to automatically assign IPs to PCs connected to the router.



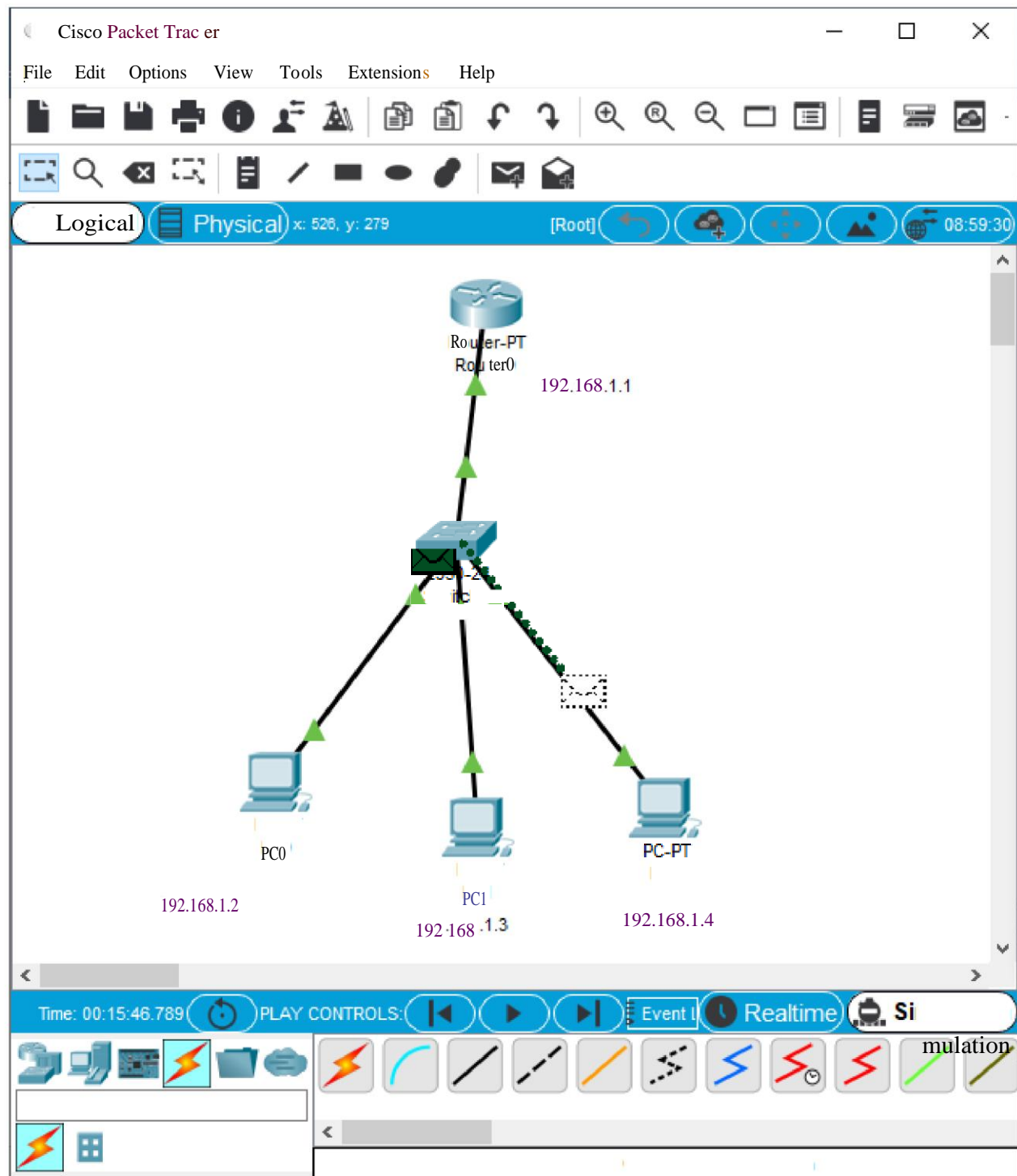
Packet Simulation

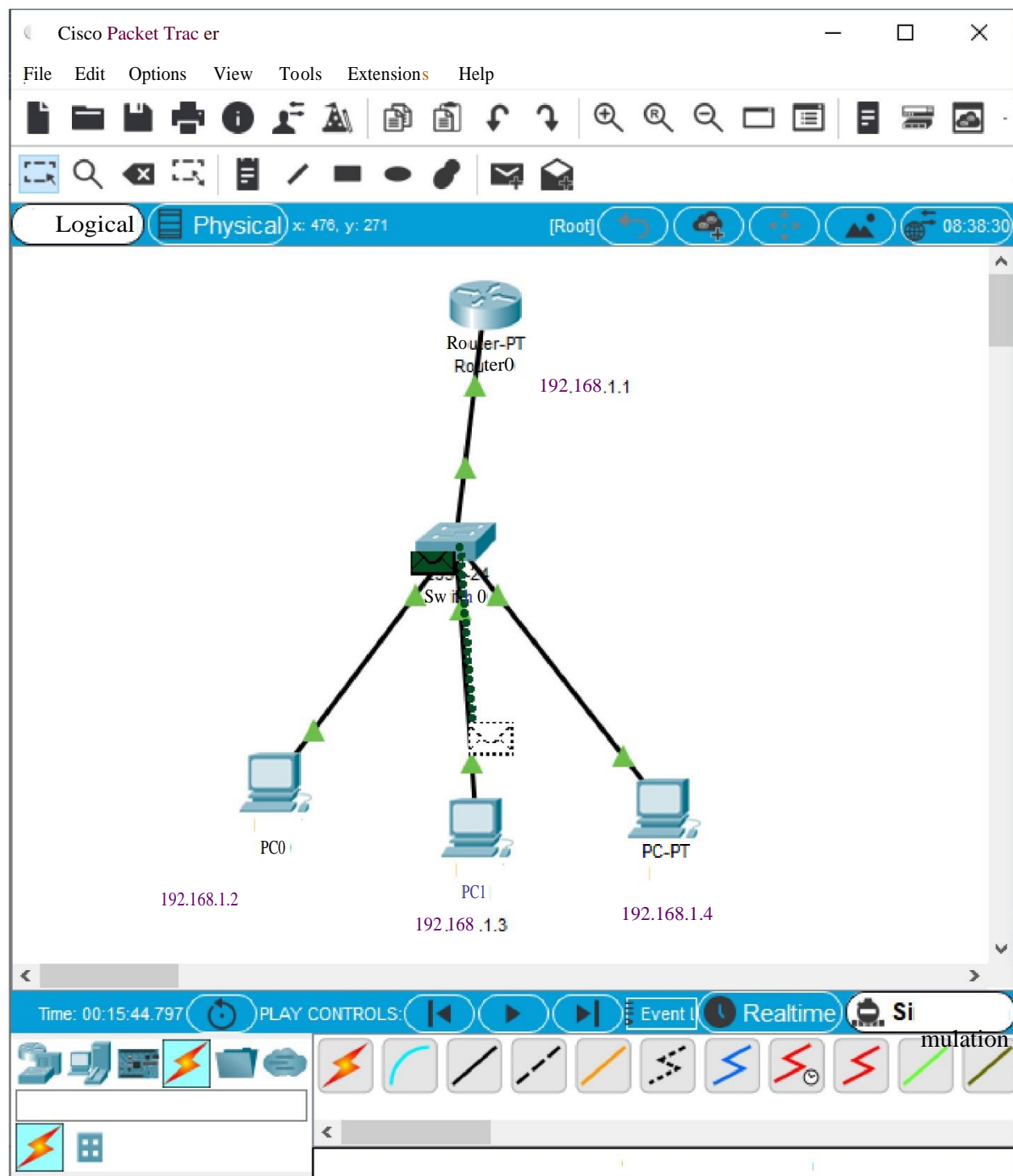
Packet simulation between PC1 and PC2.

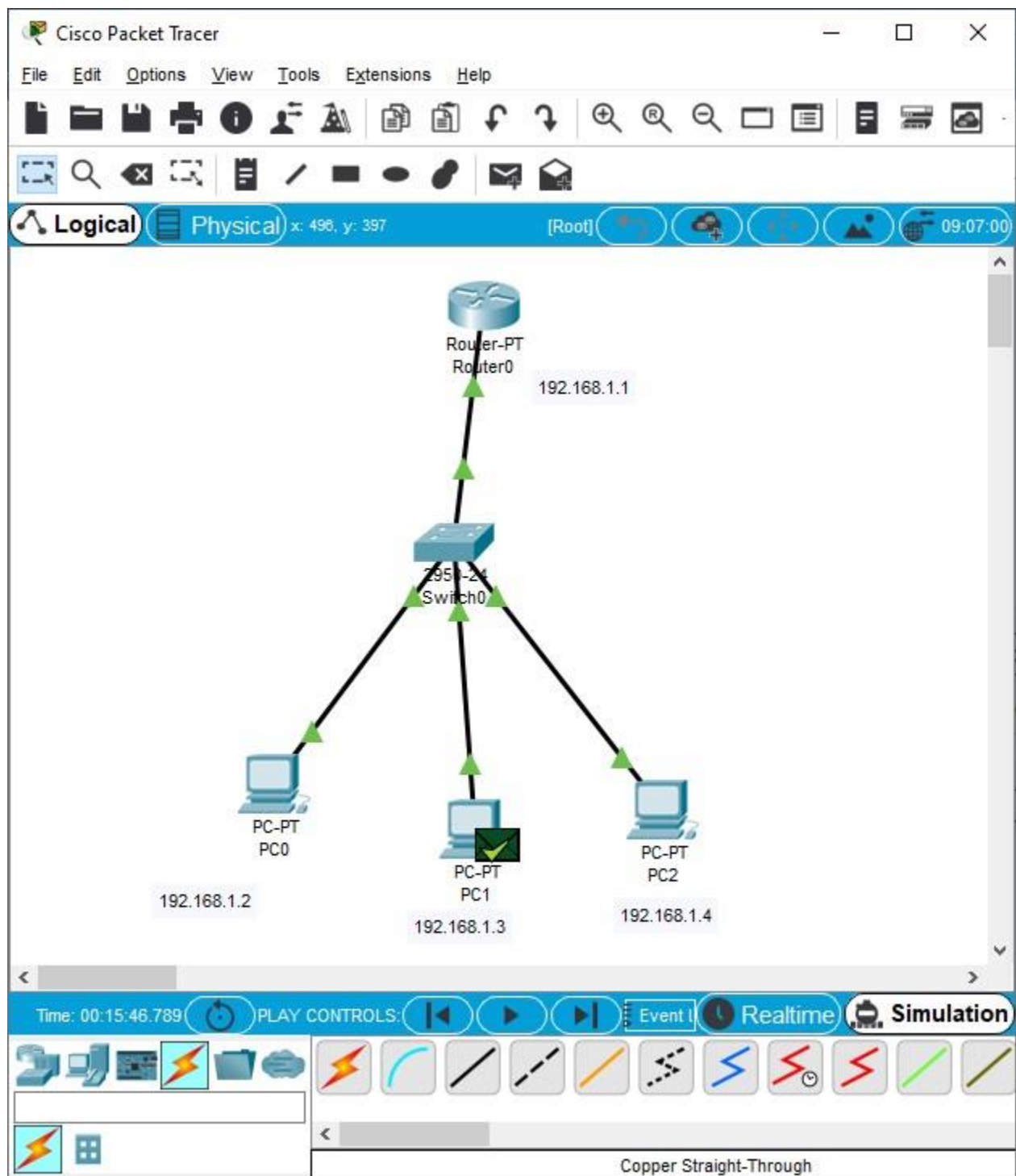




Copper Straight-Through

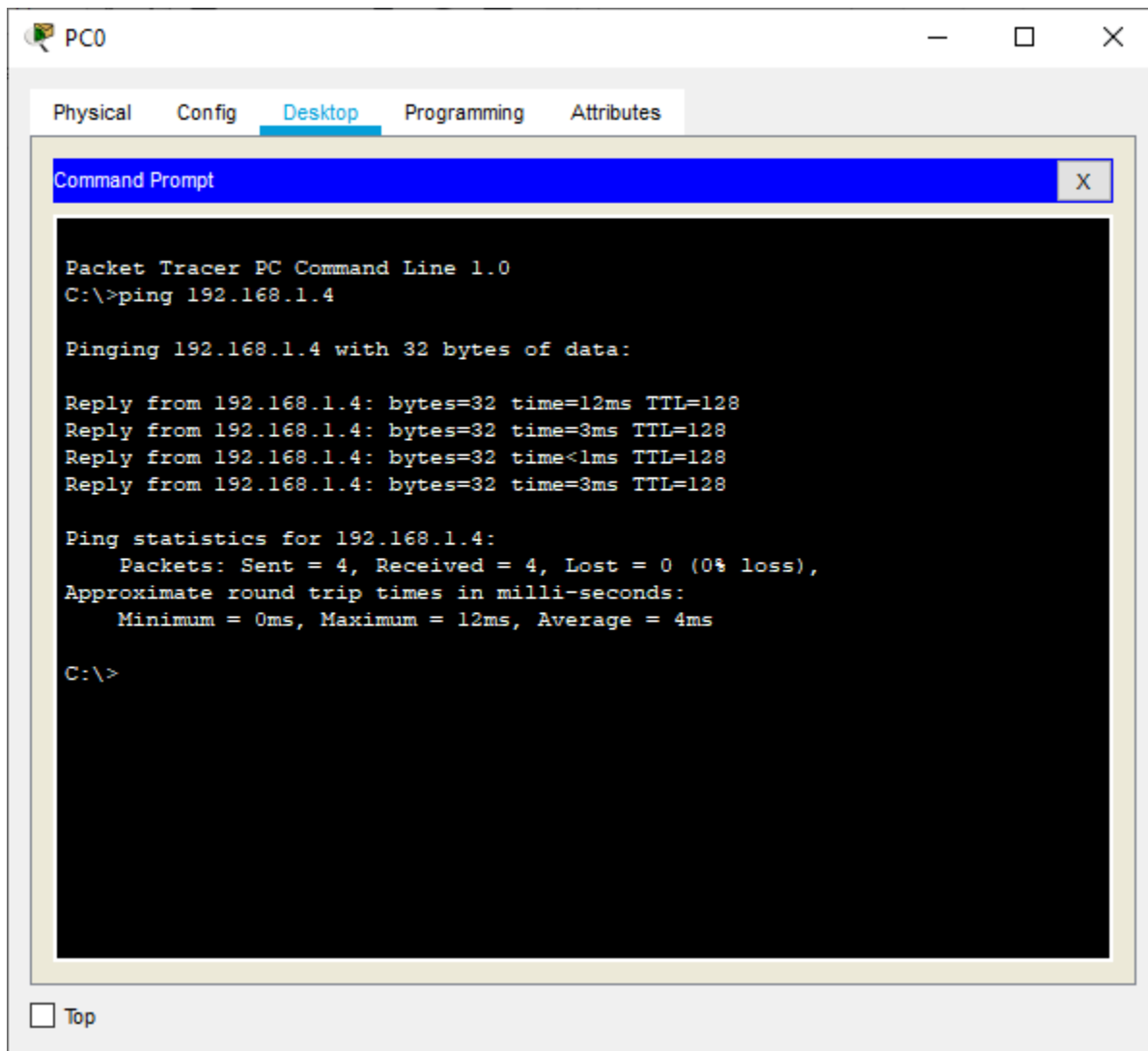




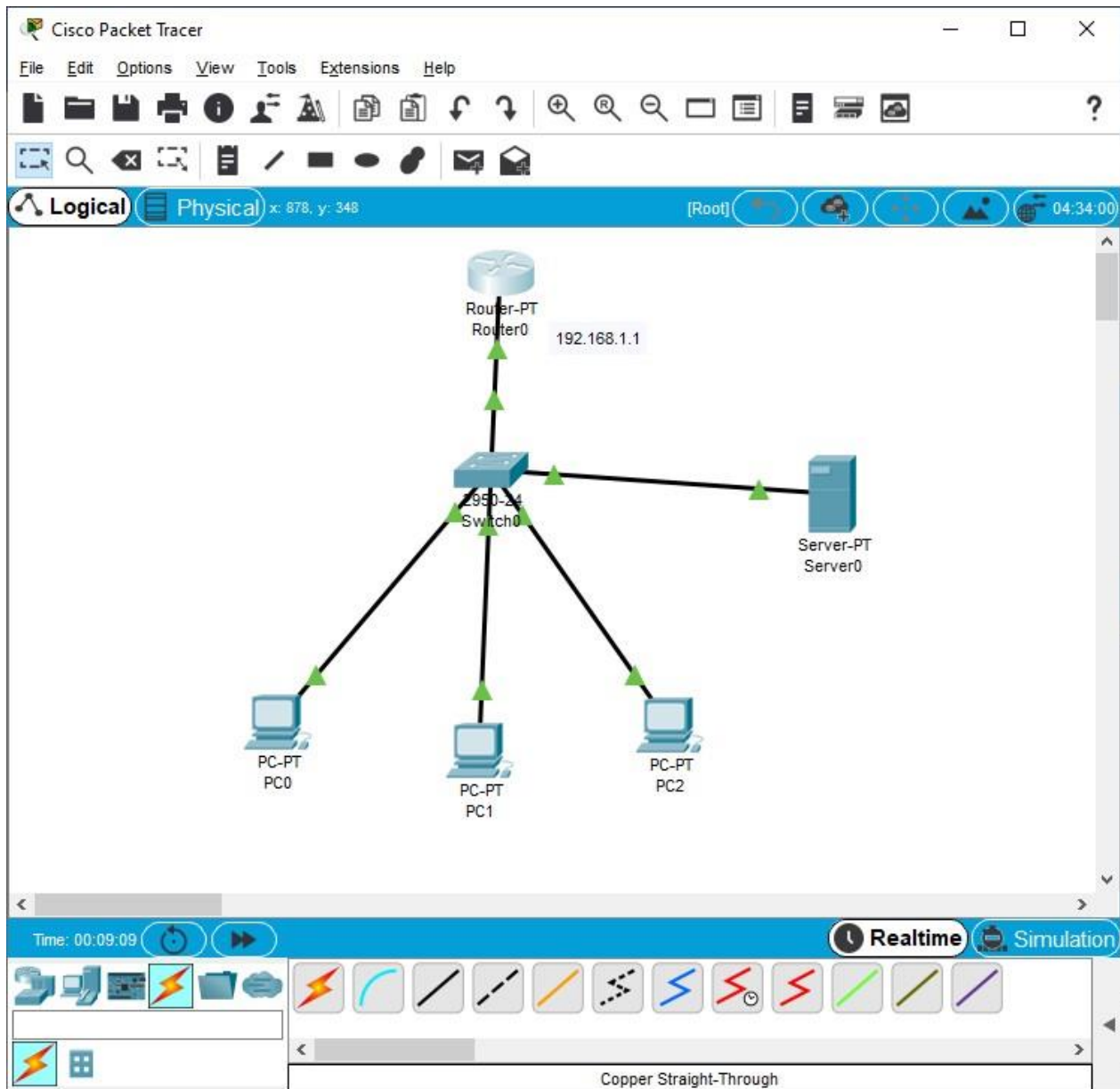


Connection Testing Between different Workstations

Testing the connection between PC0 and PC2



IP Assignment using DHCP Server



First, assigning the IP address to the DHCP server that is **192.168.1.10**

Server0

Physical Config Services **Desktop** Programming Attributes

☐ DHCP ☒ Static

IP Address

Subnet Mask

Default Gateway

DNS Server

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication

Username

Password

☐ Top

Then go to

Services ☐ DHCP and check Service ON.

Server0

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DHCP

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: serverPool

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

Start IP Address: 192 168 1 0

Subnet Mask: 255 255 255 0

Maximum Number of Users: 255

TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	0.0.0.0	0.0.0.0	192.168.1.0	255.255.255.0	255	0.0.0.0	0.0.0.0

☐ Top

Default Gateway will be 192.168.1.1 and **Start IP Address** will be 192.168.1.11 and then **Save** it.

Server0

Physical Config **Services** Desktop Programming Attributes

SERVICES

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP

DHCP

Interface: FastEthernet0 Service: ☒ On ☐ Off

Pool Name: serverPool

Default Gateway: 192.168.1.1

DNS Server: 0.0.0.0

Start IP Address: 192 168 1 11

Subnet Mask: 255 255 255 0

Maximum Number of Users: 245

TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Add Save Remove

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168.1.1	0.0.0.0	192.168.1.11	255.255.255.0	245	0.0.0.0	0.0.0.0

☐ Top

Now, assigning the IPs to computer automatically by DHCP server.

Assigning IP to PC0

The screenshot shows the configuration window for PC0. The 'Desktop' tab is selected, and the 'DHCP' radio button is chosen for IP configuration. The IP Address is 192.168.1.11, Subnet Mask is 255.255.255.0, Default Gateway is 192.168.1.1, and DNS Server is 0.0.0.0. A message 'DHCP request successful.' is displayed. The IPv6 Configuration section shows 'Static' as the selected option, with fields for IPv6 Address, Link Local Address (FE80::204:9AFF:FE2C:8B1C), IPv6 Gateway, and IPv6 DNS Server. The 802.1X section has 'Use 802.1X Security' unchecked, and the Authentication dropdown is set to 'MD5'. There are input fields for Username and Password. A 'Top' button is at the bottom left.

Physical	Config	Desktop	Programming	Attributes
<input checked="" type="radio"/> DHCP <input type="radio"/> Static DHCP request successful.				
IP Address		192.168.1.11		
Subnet Mask		255.255.255.0		
Default Gateway		192.168.1.1		
DNS Server		0.0.0.0		
IPv6 Configuration				
<input type="radio"/> DHCP <input type="radio"/> Auto Config <input checked="" type="radio"/> Static				
IPv6 Address		/		
Link Local Address		FE80::204:9AFF:FE2C:8B1C		
IPv6 Gateway				
IPv6 DNS Server				
802.1X				
<input type="checkbox"/> Use 802.1X Security				
Authentication		MD5		
Username				
Password				

☐ Top

Similarly, assigning the IPs to PC1 and PC2.

PC1

Physical Config **Desktop** Programming Attributes

☒ DHCP ☐ Static DHCP request successful.

IP Address 192.168.1.12

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::201:C9FF:FE92:C12

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

PC2

Physical Config **Desktop** Programming Attributes

☒ DHCP ☐ Static DHCP request successful.

IP Address 192.168.1.13

Subnet Mask 255.255.255.0

Default Gateway 192.168.1.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ DHCP ☐ Auto Config ☒ Static

IPv6 Address /

Link Local Address FE80::260:47FF:FECE:10B5

IPv6 Gateway

IPv6 DNS Server

802.1X

☐ Use 802.1X Security

Authentication MD5

Username

Password

☐ Top

So that is how you assign the IPs automatically through DHCP server.

•", Logical •... <<<>>

Router0
192.168.1.1



192.168.1.10



PC0
192.168.1.11

PC1
192.168.1.12

PC2
192.168.1.13

< Realtime .>

Coopper Straight-Through