

CSE-307

INTERNETWORKING ESSENTIALS

Software

- Name : Cisco Packet Tracer



PacketTracer-7.3.0-win64-setup

07-01-2022 06:19

Application

1,50,410 KB

Cisco Packet Tracer is Cisco's simulation software.

It can be used to create complicated network typologies, as well as to test and simulate abstract networking concepts.

It acts as a playground for you to explore networking and the experience is very close to what you see in computer networks.

Cisco Packet Tracer

- ▶ Packet Tracer allows users to drag and drop routers, switches, and other network devices to create simulated network topologies.

What is Computer Networking?

- ▶ A computer network is a system that connects numerous independent computers in order to share information (data) and resources. The integration of computers and other different devices allows users to communicate more easily.

- ▶ A computer network is a collection of two or more computer systems that are linked together. A network connection can be established using either cable or wireless media. Hardware and software are used to connect computers and tools in any network.

What is Computer Networking?

- ▶ A computer network consists of various kinds of nodes. Servers, networking hardware, personal computers can all be nodes in a computer network.
- ▶ A **physical network node** is an electronic device that is attached to a network, and is capable of creating, receiving, or transmitting.
- ▶ A **server** is a computer or system that provides resources, data, services, or programs to other computers, known as clients, over a network.
- ▶ A **network hub** is a node that broadcasts data to every computer connected to it.
- ▶ A **router** is a switching device for networks, which is able to route network packets, based on their addresses, to other networks or devices.
- ▶ A **switch** is a device in a computer network that connects other devices together. Multiple data cables are plugged into a switch to enable communication between different networked devices.

Poll

- ▶ Course Code of this course is

- ▶ A) CSE-306
- ▶ B)CSE-307
- ▶ C)CSE-308
- ▶ D) CSE-309

Goal Of Networking

- ▶ Programs do not have to execute on a single system because of resource and load sharing.
- ▶ Reduced costs – Multiple machines can share printers, tape drives, and other peripherals.
- ▶ Reliability – If one machine fails, another can take its place.

Goal Of Networking

- ▶ Scalability (it's simple to add more processors or computers)
- ▶ Communication and mail (people living apart can work together)
- ▶ Information Access (remote information access, access to the internet, e-mail, video conferencing, and online shopping)
- ▶ Entertainment that is interactive (online games, videos, etc.)
- ▶ Social Networking

Poll

- ▶ Name of software used in this course
 - A. Turbo-C
 - B. Dev-C++
 - C. Cisco Packet Tracer

Installation steps

Setup - Cisco Packet Tracer 7.3.0 64Bit

License Agreement

Please read the following important information before continuing.



Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.

Cisco Packet Tracer

Software License Agreement

IMPORTANT: PLEASE READ THIS CISCO PACKET TRACER SOFTWARE LICENSE AGREEMENT (THE "AGREEMENT")

I accept the agreement
 I do not accept the agreement

Next > **Cancel**

Installation steps

 Setup - Cisco Packet Tracer 7.3.0 64Bit

Select Destination Location
Where should Cisco Packet Tracer 7.3.0 64Bit be installed?



 Setup will install Cisco Packet Tracer 7.3.0 64Bit into the following folder.

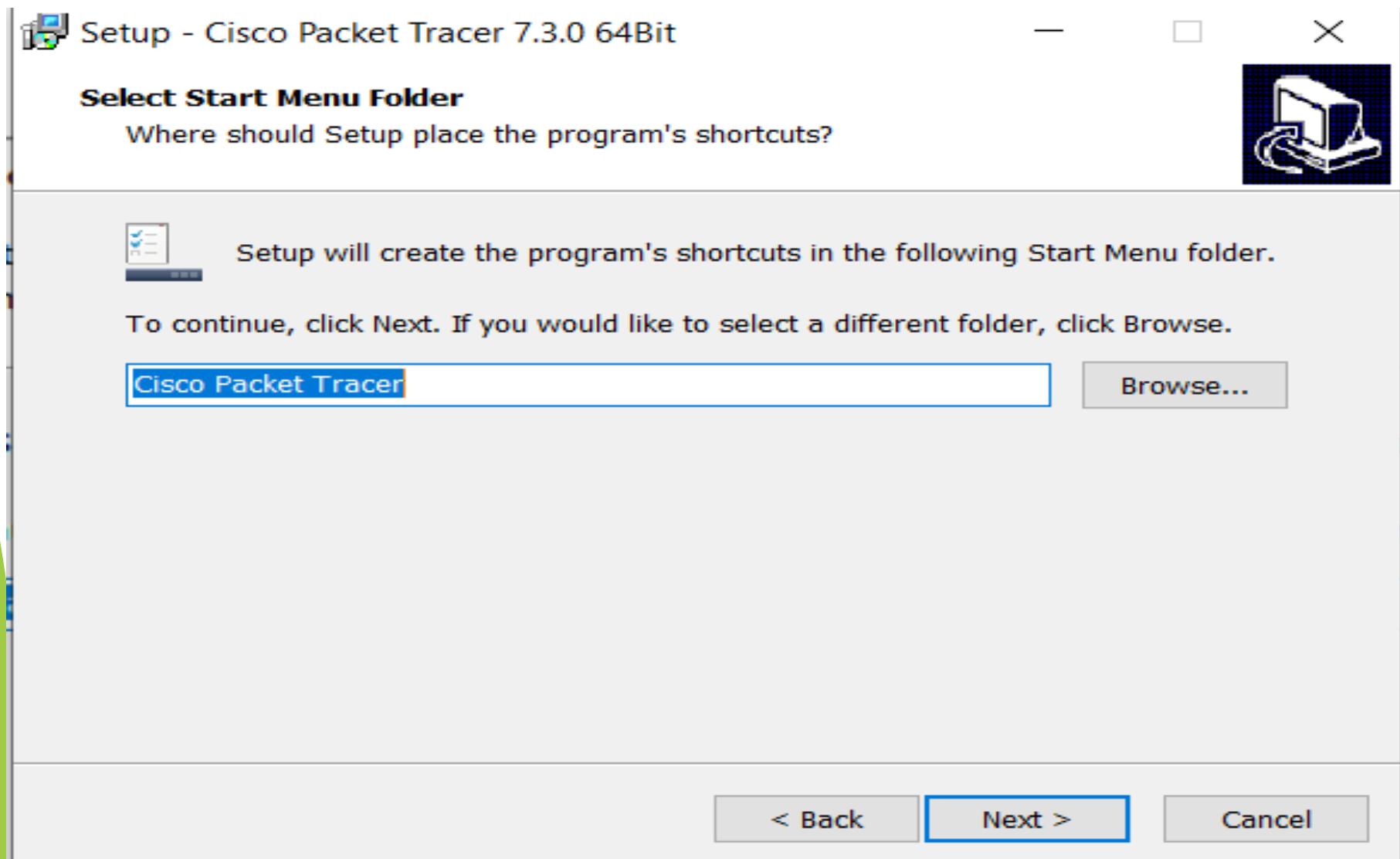
To continue, click Next. If you would like to select a different folder, click Browse.

[Browse...](#)

At least 410.9 MB of free disk space is required.

[< Back](#) [Next >](#) [Cancel](#)

Installation steps



Discussion

- ▶ What is computer Networking ?

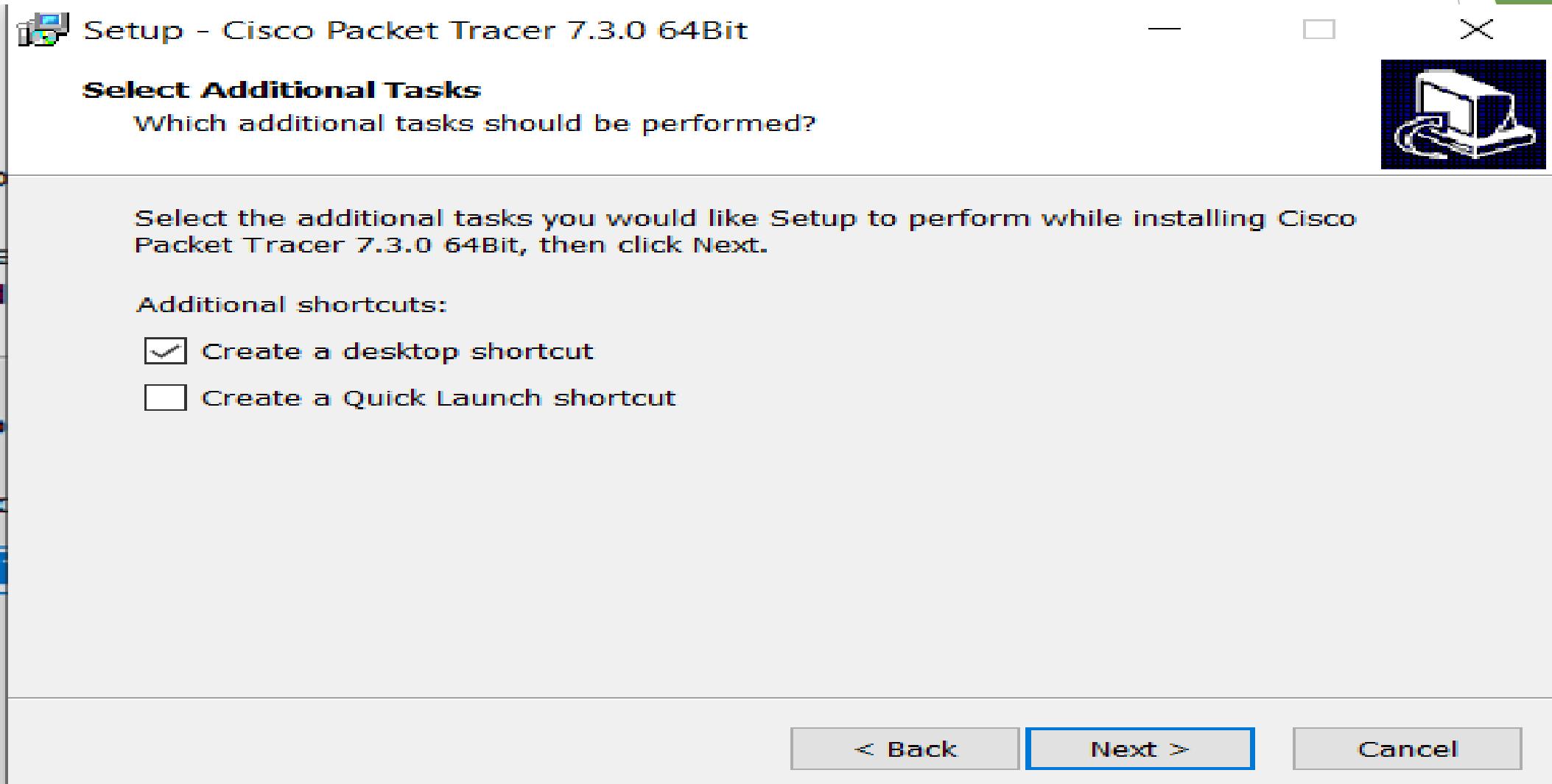
What is Computer Networking?

- ▶ A computer network is a system that connects numerous independent computers in order to share information (data) and resources. The integration of computers and other different devices allows users to communicate more easily.
- ▶ A computer network is a collection of two or more computer systems that are linked together. A network connection can be established using either cable or wireless media. Hardware and software are used to connect computers and tools in any network.

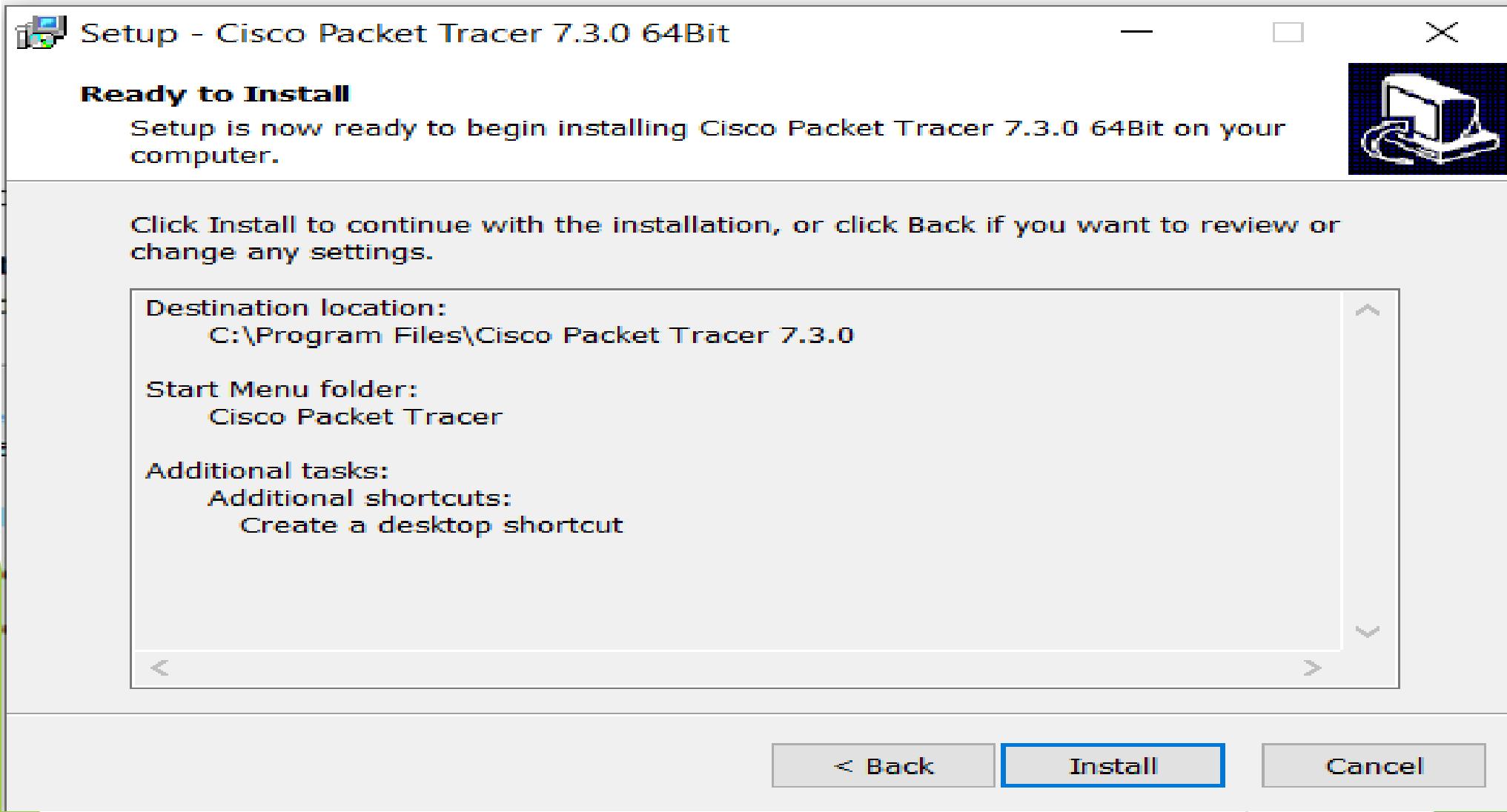
What is Computer Networking?

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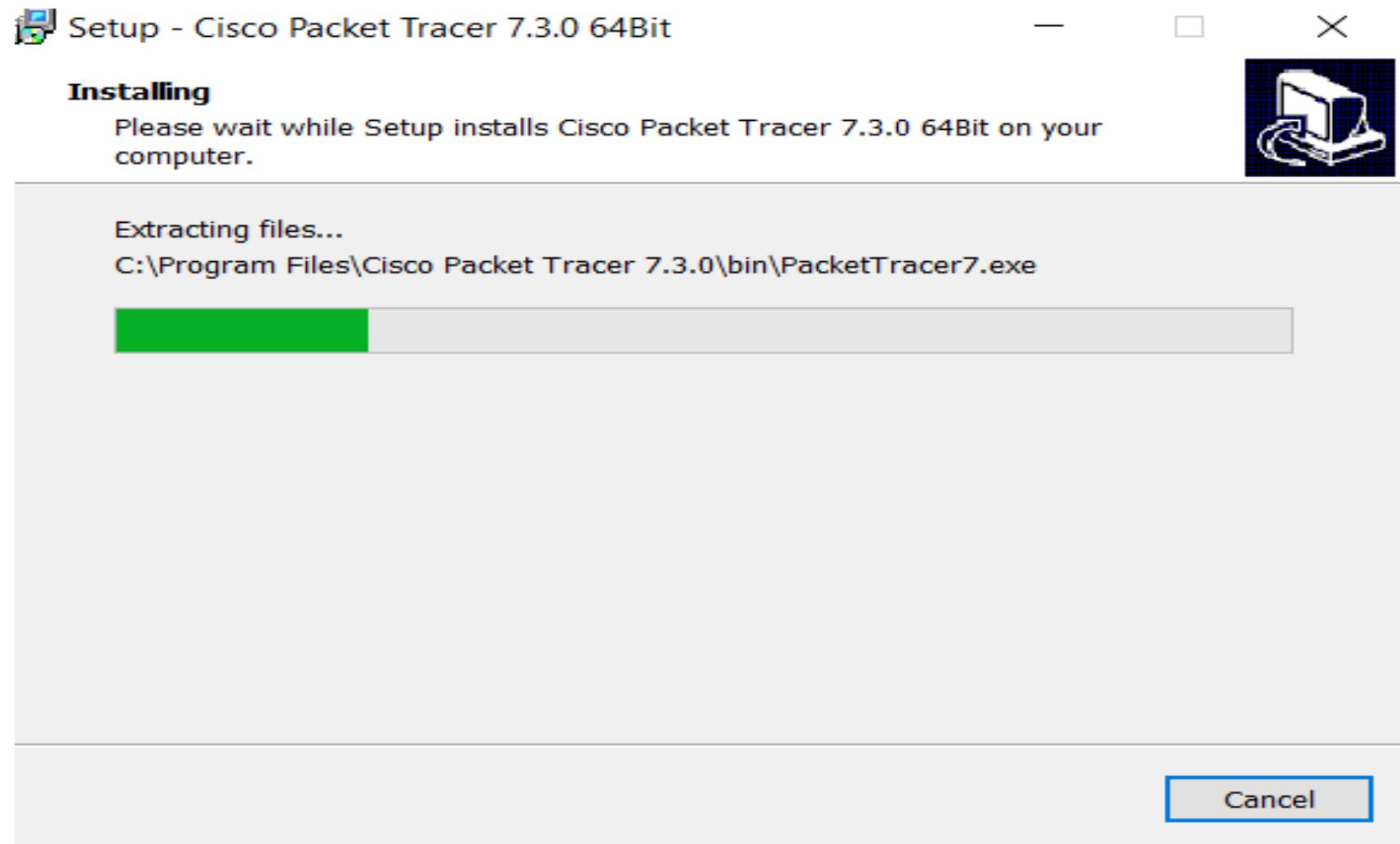
Installation steps



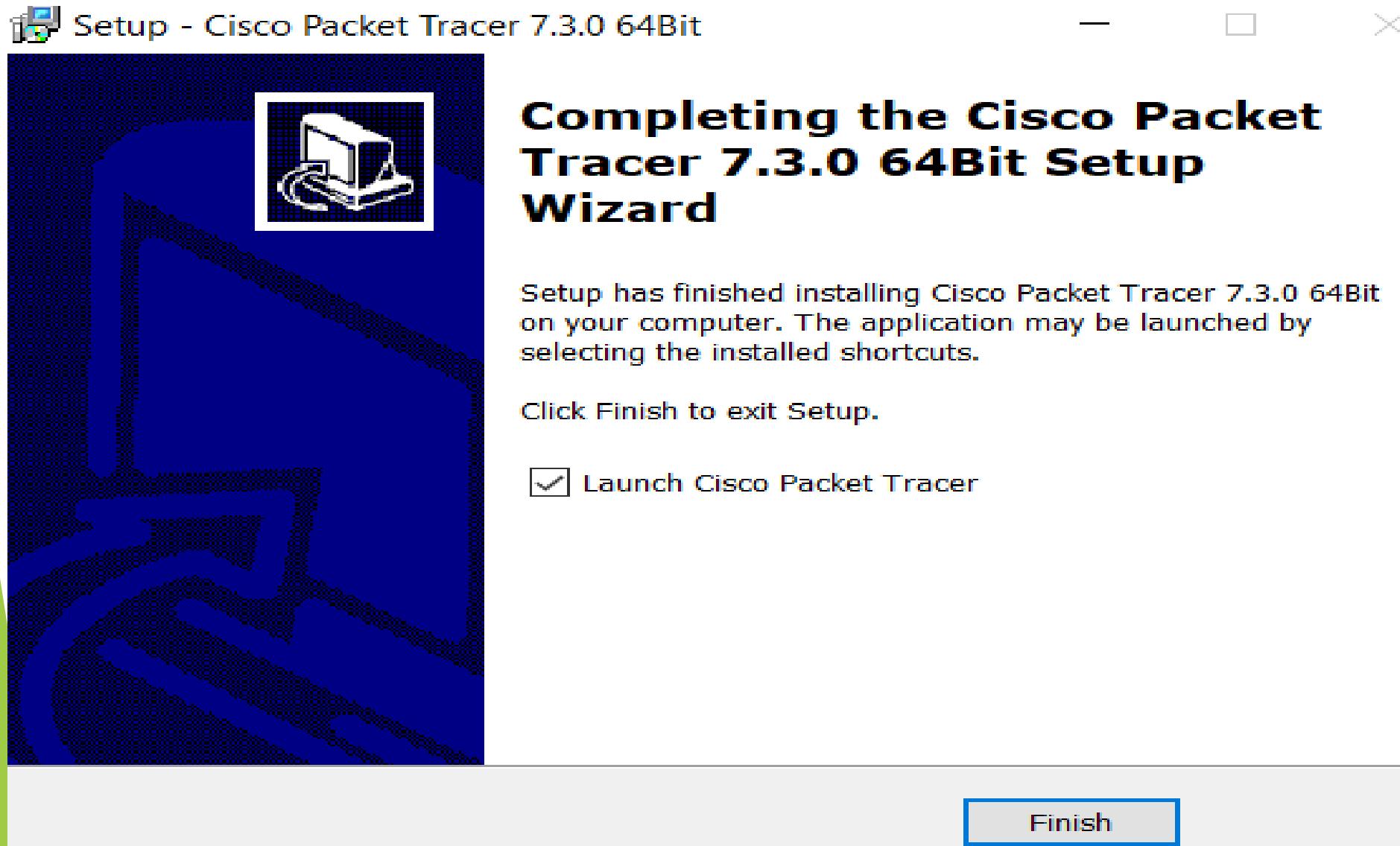
Installation steps



Installation steps



Installation steps



Installation steps



Packet Tracer



You are running Packet Tracer for the first time. Packet Tracer will save your user files in the following folder.

C:/Users/DELLS/Cisco Packet Tracer 7.3.0

You can change this setting in Options->Preferences at a later time.

OK

Discussion

- ▶ Explain goal of Networking ?

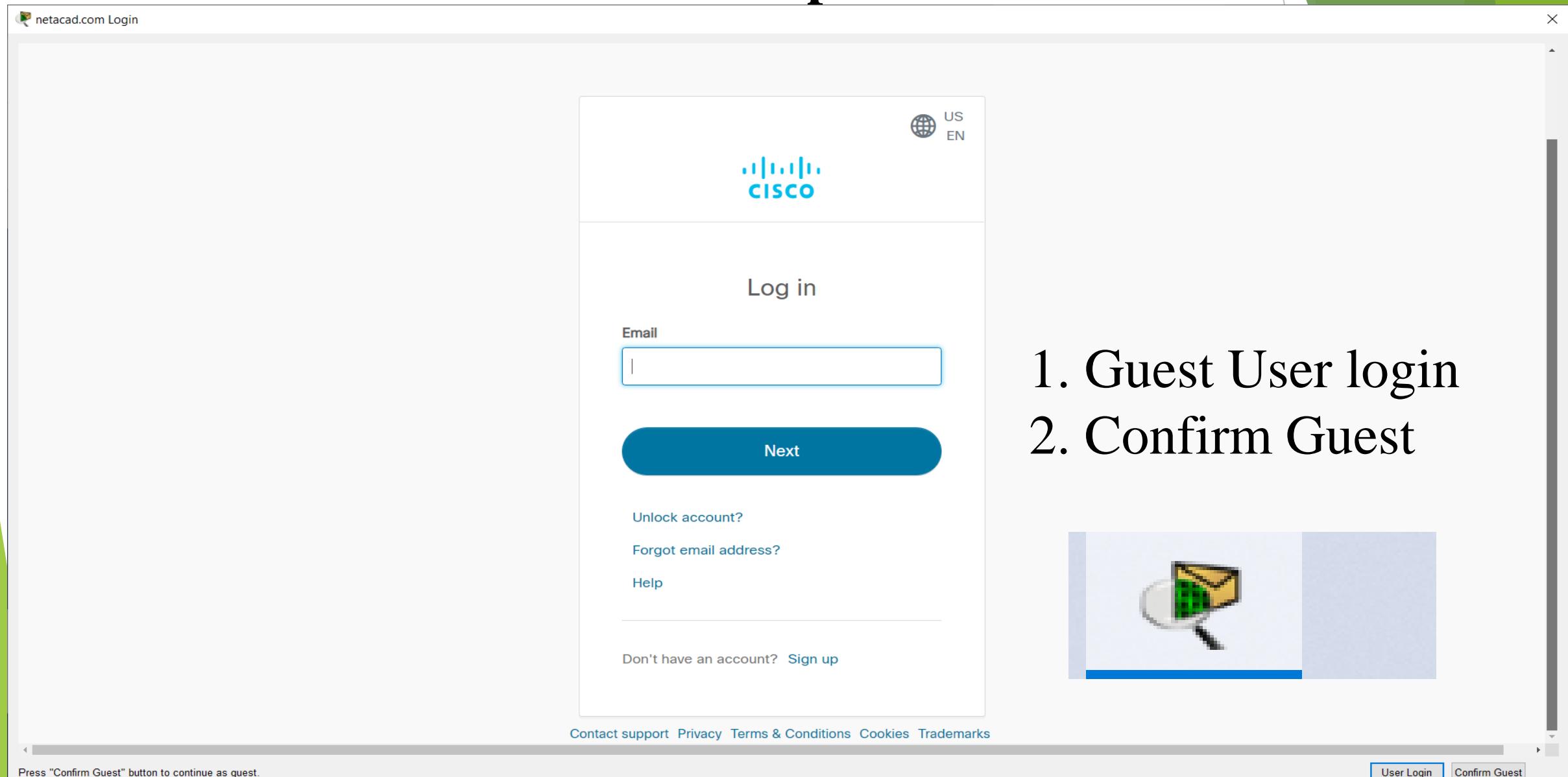
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- ▶ Social Networking

Installation steps

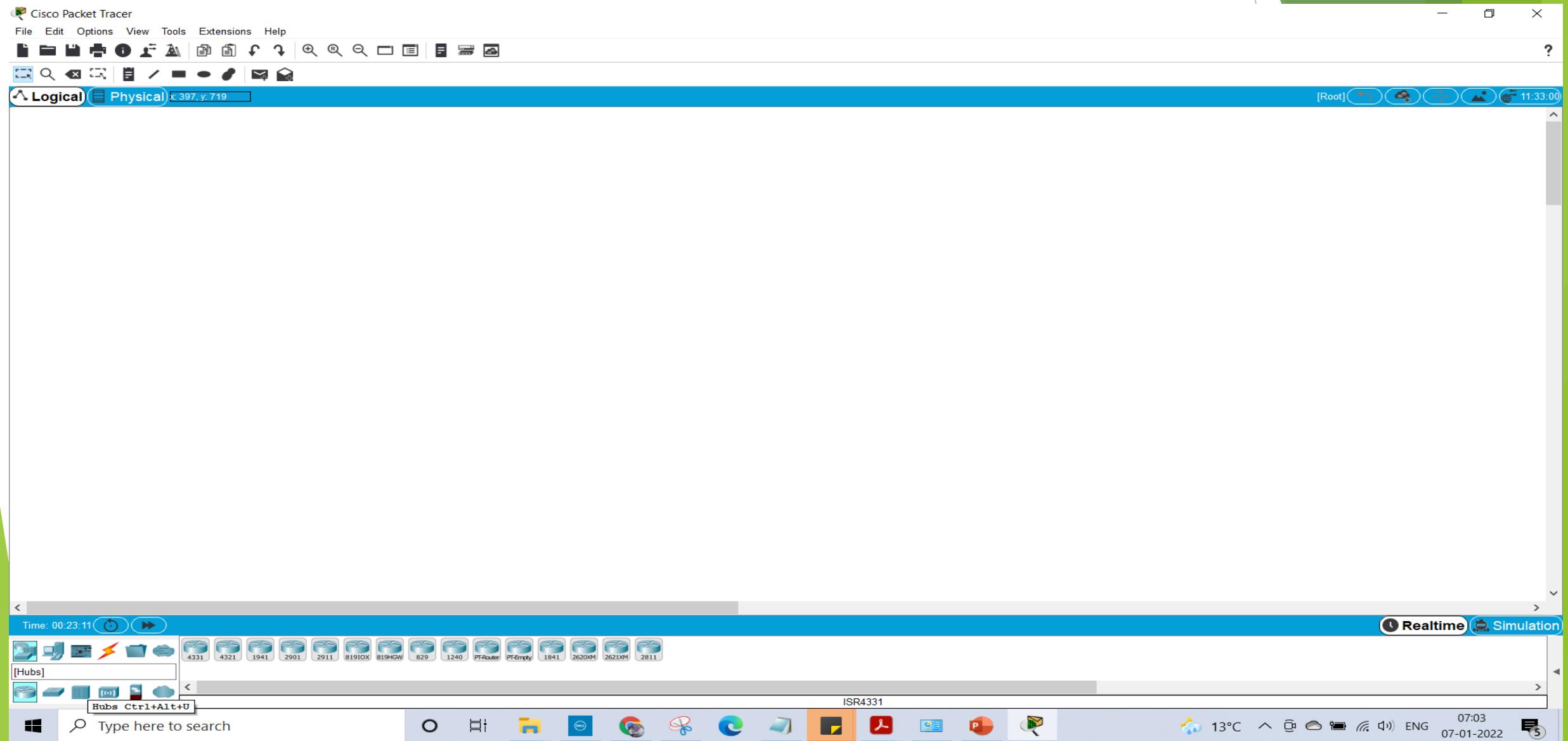


The screenshot shows a web browser window with the title "netacad.com Login". The main content is a Cisco guest login form. At the top right are language and region selection buttons for "US" and "EN". The Cisco logo is centered above the "Log in" button. Below the logo is an "Email" input field containing a placeholder "Email". A large blue "Next" button is positioned below the input field. To the right of the "Next" button are links for "Unlock account?", "Forgot email address?", and "Help". At the bottom of the form is a link "Don't have an account? Sign up". At the very bottom of the page are links for "Contact support", "Privacy", "Terms & Conditions", "Cookies", and "Trademarks".

1. Guest User login
2. Confirm Guest



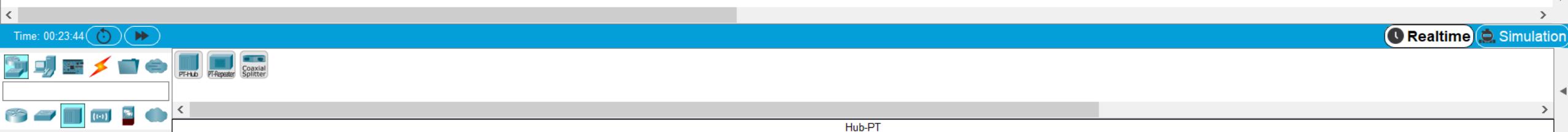
Working of Hub





Logical Physical x: 662, y: 720

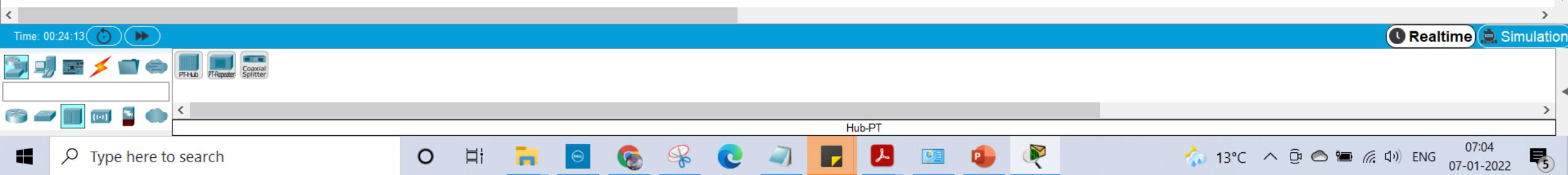
[Root] 11:49 30





Logical Physical X: 1033, Y: 663

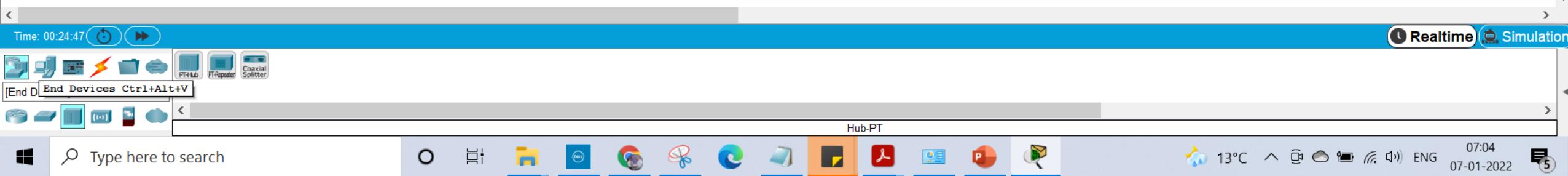
[Root] 12.03.30

 Hub-PT
Hub0



Logical Physical x: 1081, y: 715

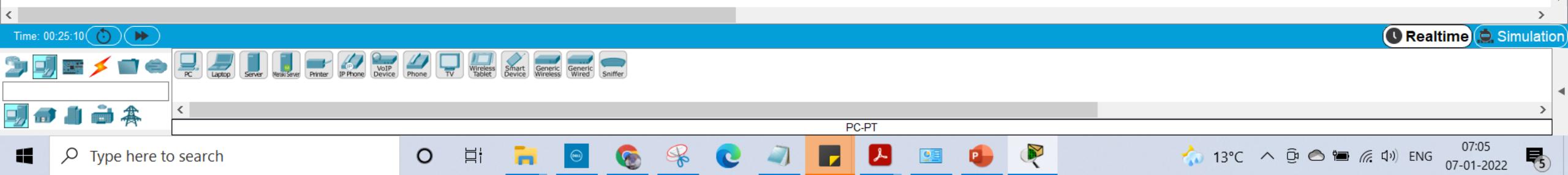
[Root] 12.21.00

Hub-PT
Hub0



Logical Physical x: 347, y: 719

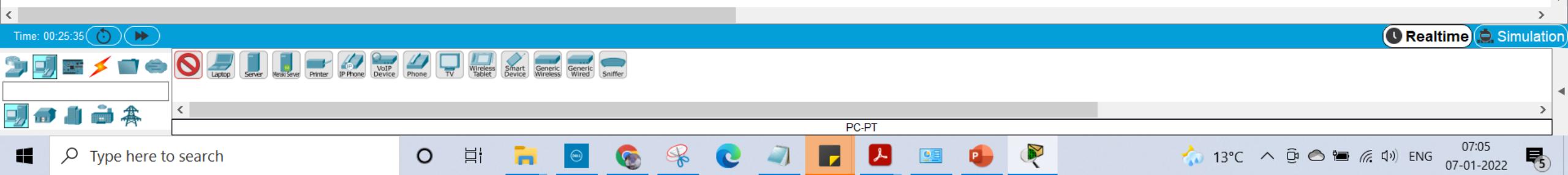
[Root] 12:32:30

Hub-PT
Hub0



Logical Physical x: 326, y: 716

[Root] 12.44.30

PC-PT
PC0PC-PT
PC1Hub-PT
Hub0

Type here to search

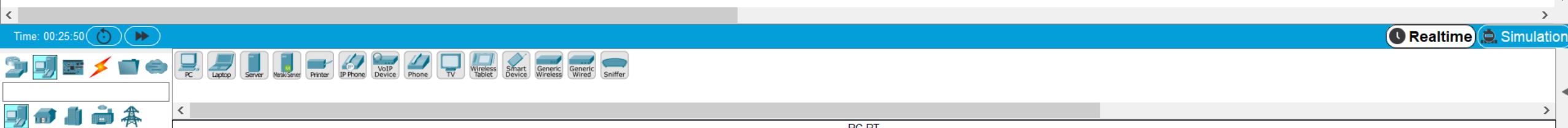
13°C ENG 07:05
07-01-2022

5



Logical Physical x: 343, y: 712

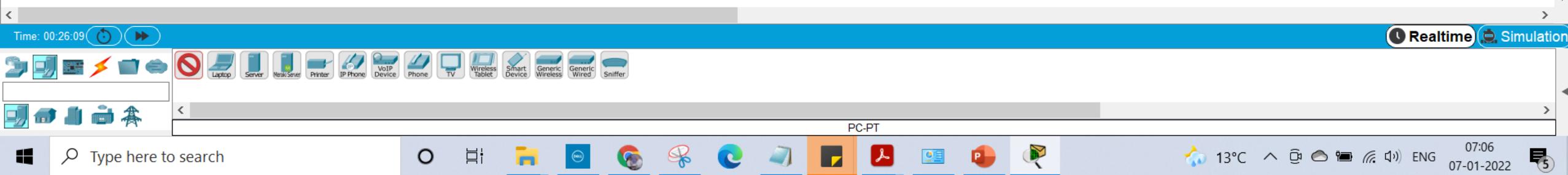
[Root] 12:52:30

PC-PT
PC0PC-PT
PC1Hub-PT
Hub0PC-PT
PC2



Logical Physical x: 343, y: 712

[Root] 13:01:30

PC-PT
PC0PC-PT
PC1Hub-PT
Hub0PC-PT
PC2



Logical Physical X: 1076, y: 716

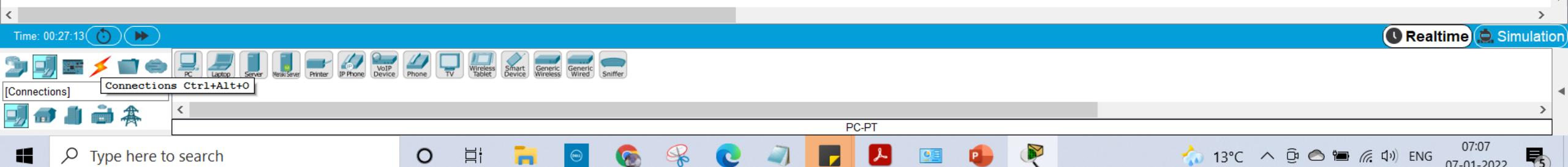
[Root] 13:27:30

 PC-PT
PC0 PC-PT
PC1 Hub-PT
Hub0 PC-PT
PC2 PC-PT
PC3



Logical Physical x: 428, y: 716

[Root] 13:33:30

PC-PT
PC0PC-PT
PC1Hub-PT
Hub0PC-PT
PC2PC-PT
PC3



Logical Physical x: 491, y: 716

[Root] 13:44 30

PC-PT
PC0PC-PT
PC1Hub-PT
Hub0PC-PT
PC2PC-PT
PC3

Time: 00:27:35

Realtime Simulation



Automatically Choose Connection Type

Type here to search



13°C ENG 07:07 07-01-2022

5



Logical Physical x: 547, y: 720

[Root] 13:51:00

 PC-PT
PC0 PC-PT
PC1 Hub-PT
Hub0 PC-PT
PC2 PC-PT
PC3

Time: 00:27:48

Realtime Simulation



Automatically Choose Connection Type

Type here to search



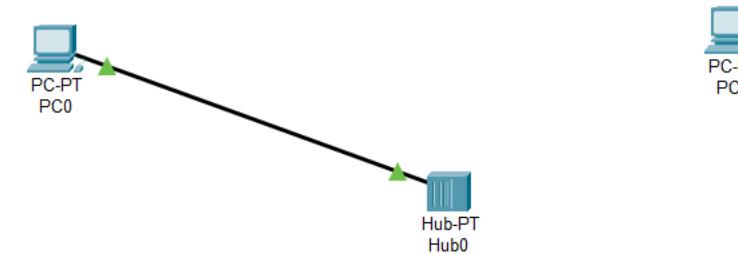
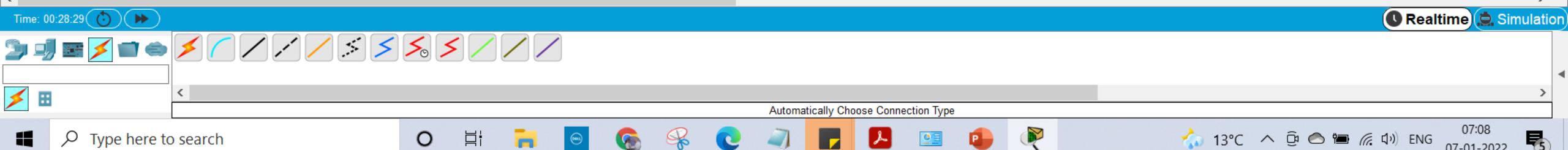
13°C ENG 07:07 07-01-2022

5



Logical Physical x: 394, y: 717

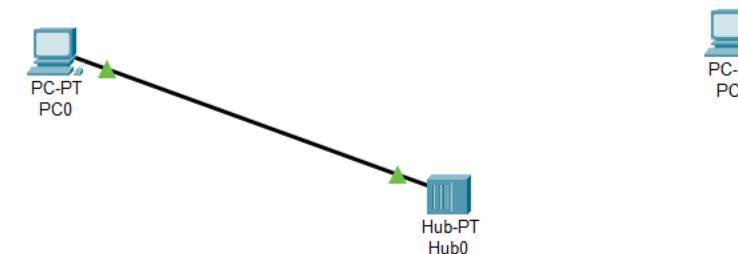
[Root] 14:11:30

PC-PT
PC2PC-PT
PC3PC-PT
PC0PC-PT
PC1Hub-PT
Hub0



Logical Physical x: 423, y: 714

[Root] 14:22:00



Time: 00:28:49

Realtime Simulation



Automatically Choose Connection Type

Type here to search

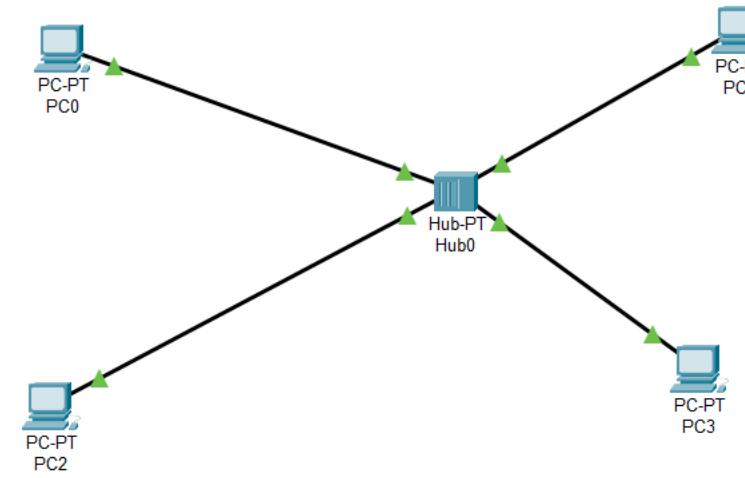
13°C ENG 07:08
07-01-2022

5



Logical Physical x: 921, y: 357

[Root] 14:43:00



Time: 00:29:32

Realtime Simulation

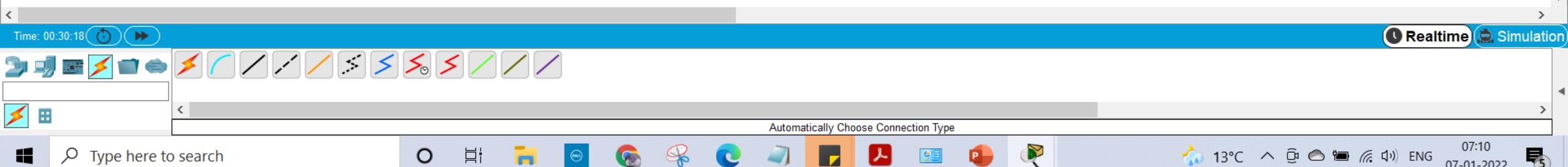
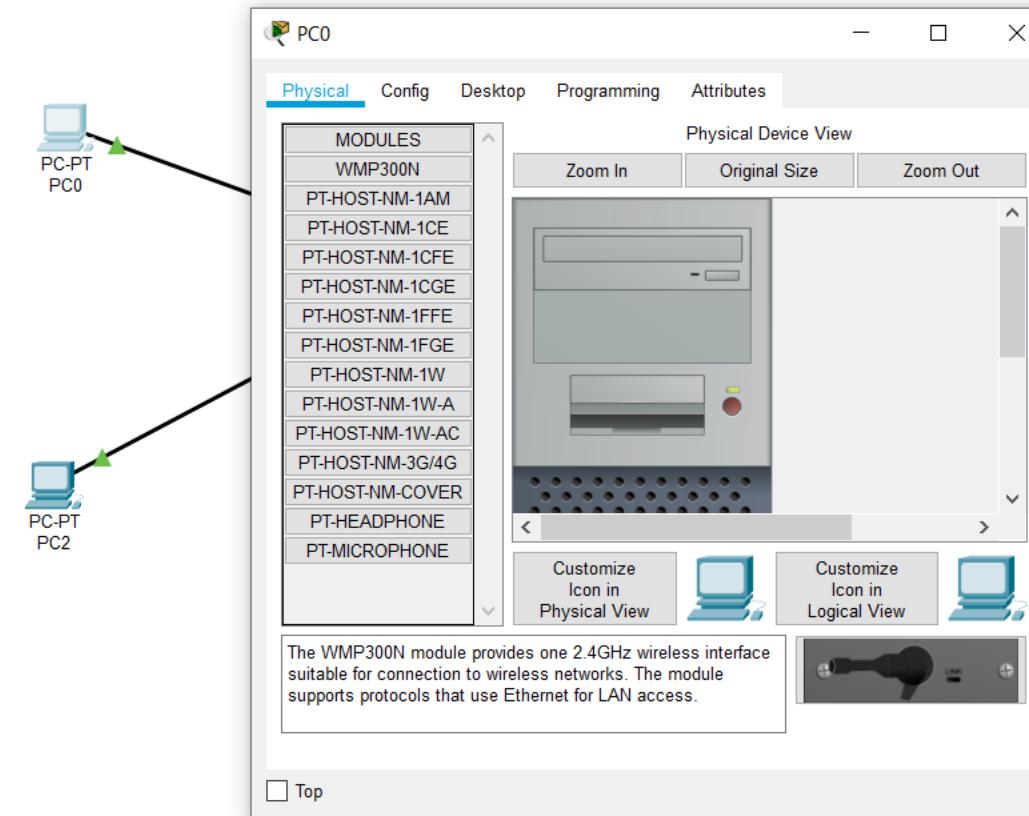


Automatically Choose Connection Type



Logical Physical x: 295, y: 146

[Root] 15:06:00



3. CSE-307-PRACTICALS-DETAILS - PowerPoint

File Home Insert Draw Design Transitions Animations Slide Show Record Review View Help Picture Tools

Tell me what you want to do

Picture Tools

Remove Background Corrections Color Artistic Effects Adjust

Picture Styles

Picture Border Picture Effects Picture Layout Alt Text Bring Forward Send Backward Selection Pane Align Group Crop Rotate Size

Height: 19.05 cm Width: 33.87 cm

28

29

30

31

32

PCO

Physical Config Desktop Programming Attributes

GLOBAL

Settings Algorithm Settings

INTERFACE

FastEthernet0 Bluetooth

FastEthernet0

Port Status On

Bandwidth 100 Mbps 10 Mbps Auto

Duplex Half Duplex Full Duplex Auto

MAC Address 0009.7CA4.6ABC

IP Configuration DHCP Static

IP Address Subnet Mask

IPv6 Configuration DHCP Auto Config Static

IPv6 Address Link Local Address: FE80::209:7CFF:FEA4:6ABC

An **IP address** is a unique address that identifies a device on the internet or a local network.

A **subnet mask** defines the range of IP addresses that can be used within a network or subnet

Click to add notes

Time: 00:30:18

Realtime Simulation

Type here to search

Automatically Choose Connection Type

13°C ENG 07:10 07-01-2022

Notes Comments

Slide 32 of 32 English (India) Accessibility: Investigate

Type here to search

0 13°C 07:10 07-01-2022

DrPrabal Gupta Coderindeed

3. CSE-307-PRACTICALS-DETAILS - PowerPoint

File Home Insert Draw Design Transitions Animations Slide Show Record Review View Help Picture Tools Tell me what you want to do DrPrabal Gupta DG CODERINDEED Share

Remove Background Corrections Color Artistic Effects Adjust Compress Pictures Change Picture Reset Picture Picture Styles Picture Border Picture Effects Picture Layout Alt Text Bring Forward Send Backward Selection Pane Align Group Rotate Crop Height: 19.05 cm Width: 33.87 cm Size

29

30

31

32

33

PCO

Physical Config Desktop Programming Attributes

GLOBAL Settings Algorithm Settings INTERFACE FastEthernet0 Bluetooth

FastEthernet0

Port Status On

Bandwidth 100 Mbps 10 Mbps Auto

Duplex Half Duplex Full Duplex Auto

MAC Address 0009.7CA4.6ABC

IP Configuration DHCP Static IP Address 10.10.10.1 Subnet Mask 255.0.0.0

IPv6 Configuration DHCP Auto Config Static IPv6 Address Link Local Address: FE80::209:7CFF:FEA4:6ABC EA4:6ABC

Top

Click to add notes

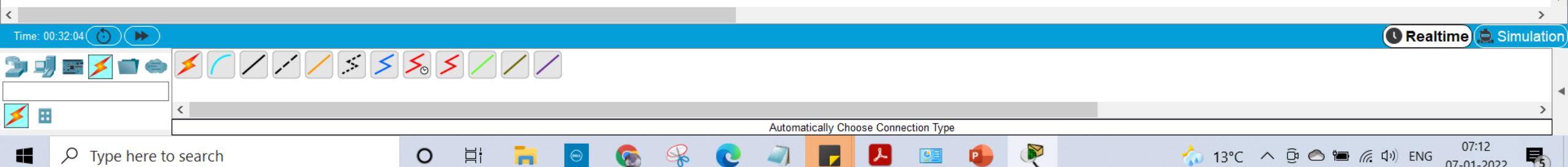
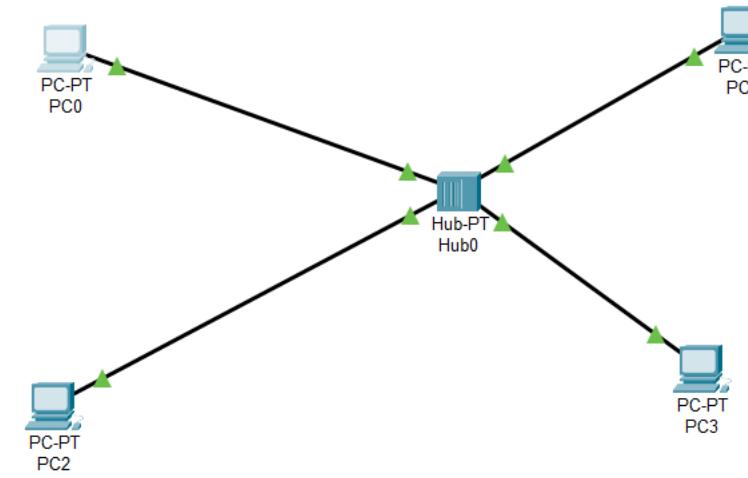
Slide 33 of 32 English (India) Accessibility: Investigate Type here to search Notes Comments 13°C ENG 07:10 07-01-2022 82% 07:11 07-01-2022 82%

Press button Tab Then Mask will come automatically.



Logical Physical x: 247, y: 136

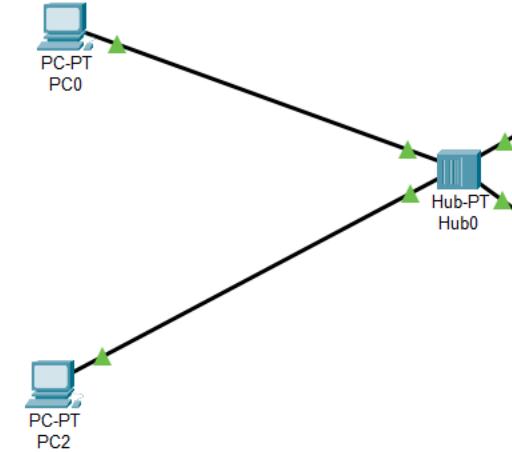
[Root] 15:59 30





Logical Physical x: 808, y: 131

[Root] 16:13:30



PC1

Physical Config Desktop Programming Attributes

GLOBAL

Settings Algorithm Settings

INTERFACE

FastEthernet0 Bluetooth

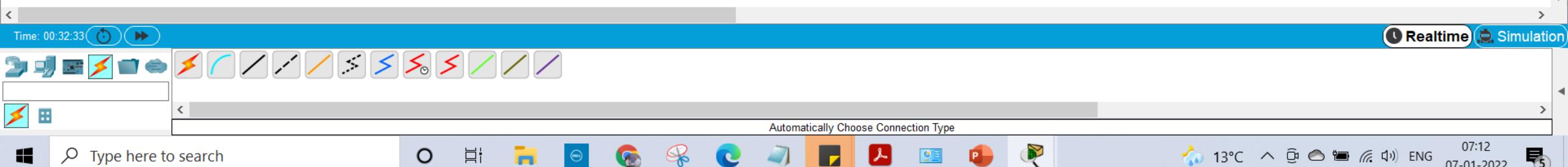
FastEthernet0

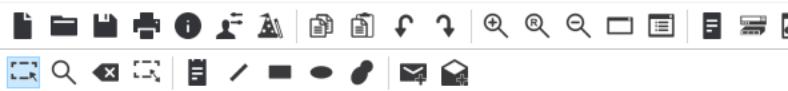
Port Status: On
Bandwidth: 100 Mbps 10 Mbps Auto
Duplex: Half Duplex Full Duplex Auto
MAC Address: 0006.2AB0.8C38

IP Configuration: DHCP Static
IP Address: 10.10.10.2
Subnet Mask: 255.0.0.0

IPv6 Configuration: DHCP Auto Config Static
IPv6 Address:
Link Local Address: FE80::206:2AFF:FEBO:8C38

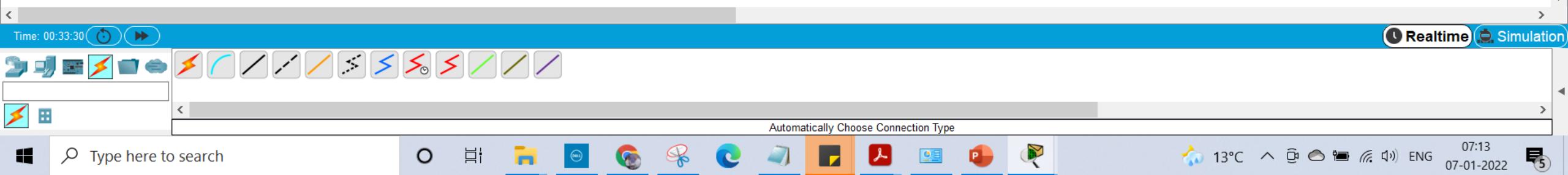
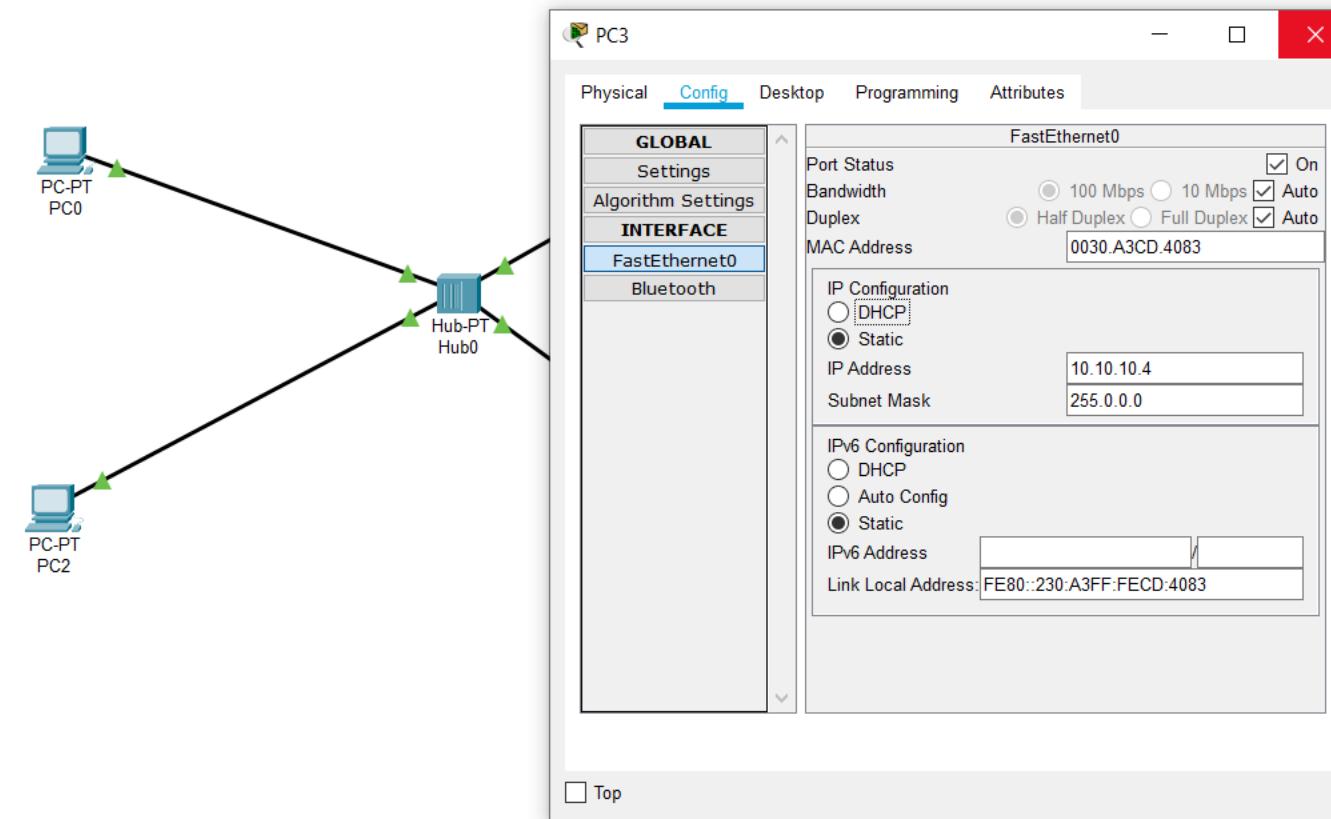
Top





Logical Physical x: 772, y: 384

[Root] 16:42:30

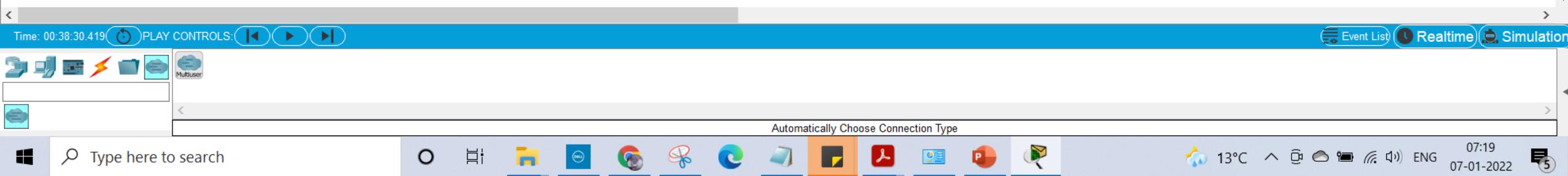
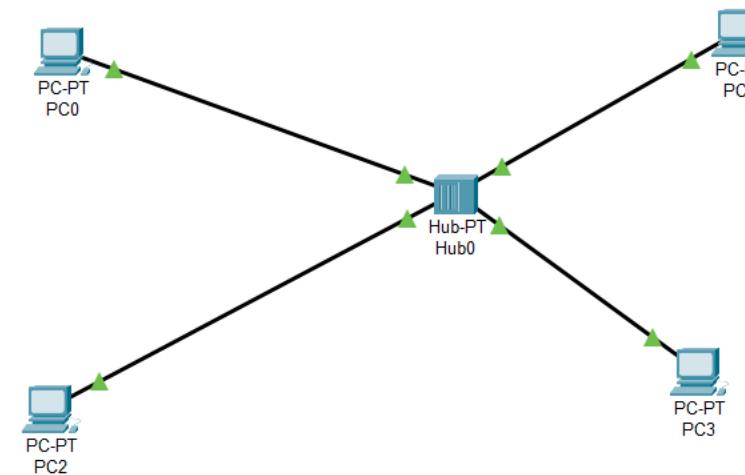




Logical Physical x: 378, y: 7

Add Simple PDU (P)

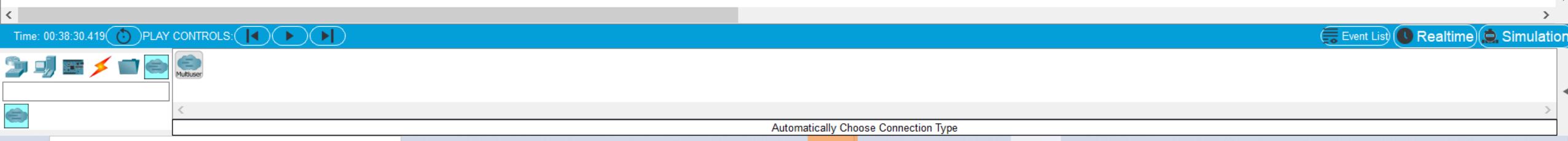
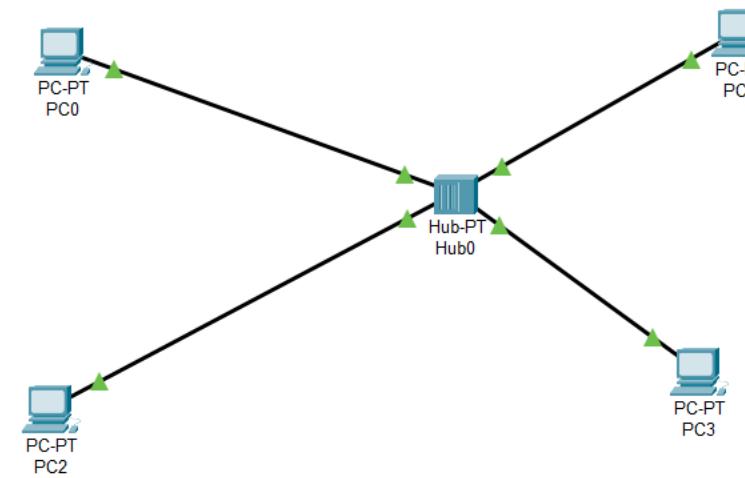
[Root] 19:48:00





Logical Physical x: 250, y: 134

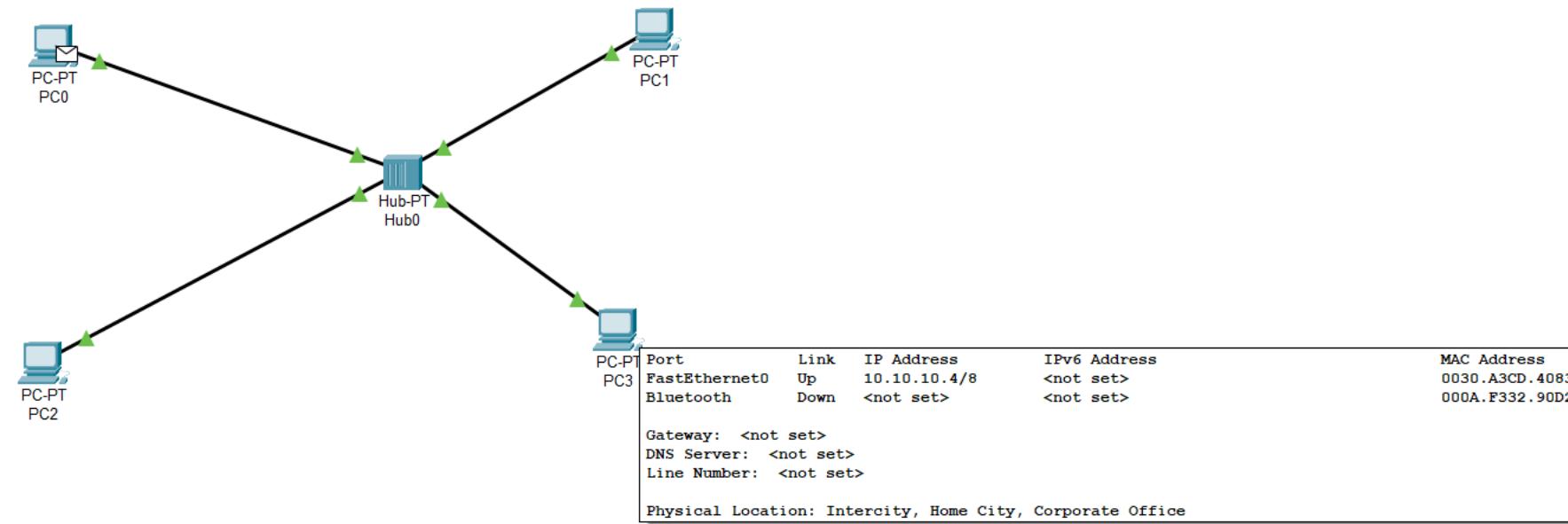
[Root] 19:57:30





Logical Physical x: 786, y: 386

[Root] 20:05 30



Time: 00:38:30.419

Event List Realtime Simulation

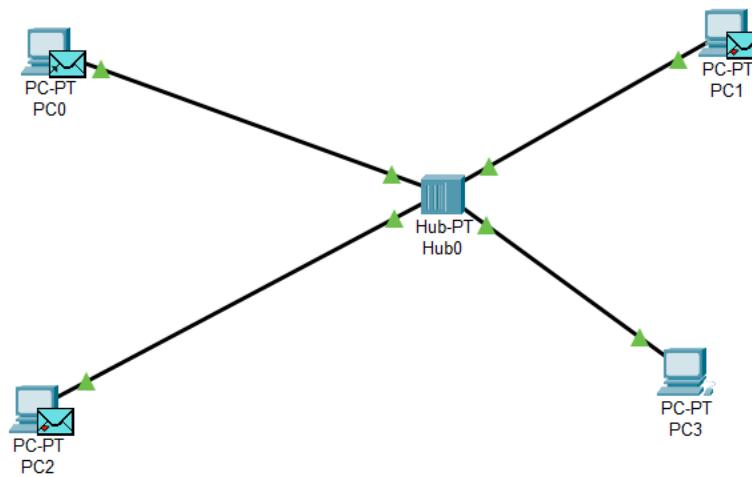


Automatically Choose Connection Type



Logical Physical x: 1425, y: 371

[Root] 21:38:00



Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.001	PC0	Hub0	ICMP
	0.002	Hub0	PC2	ICMP
	0.002	Hub0	PC3	ICMP
	0.002	Hub0	PC1	ICMP
	0.003	PC3	Hub0	ICMP
	0.004	Hub0	PC0	ICMP
	0.004	Hub0	PC2	ICMP
	0.004	Hub0	PC1	ICMP

Reset Simulation Constant Delay Capturing... *

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, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFT, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Time: 00:38:56.594 PLAY CONTROLS:

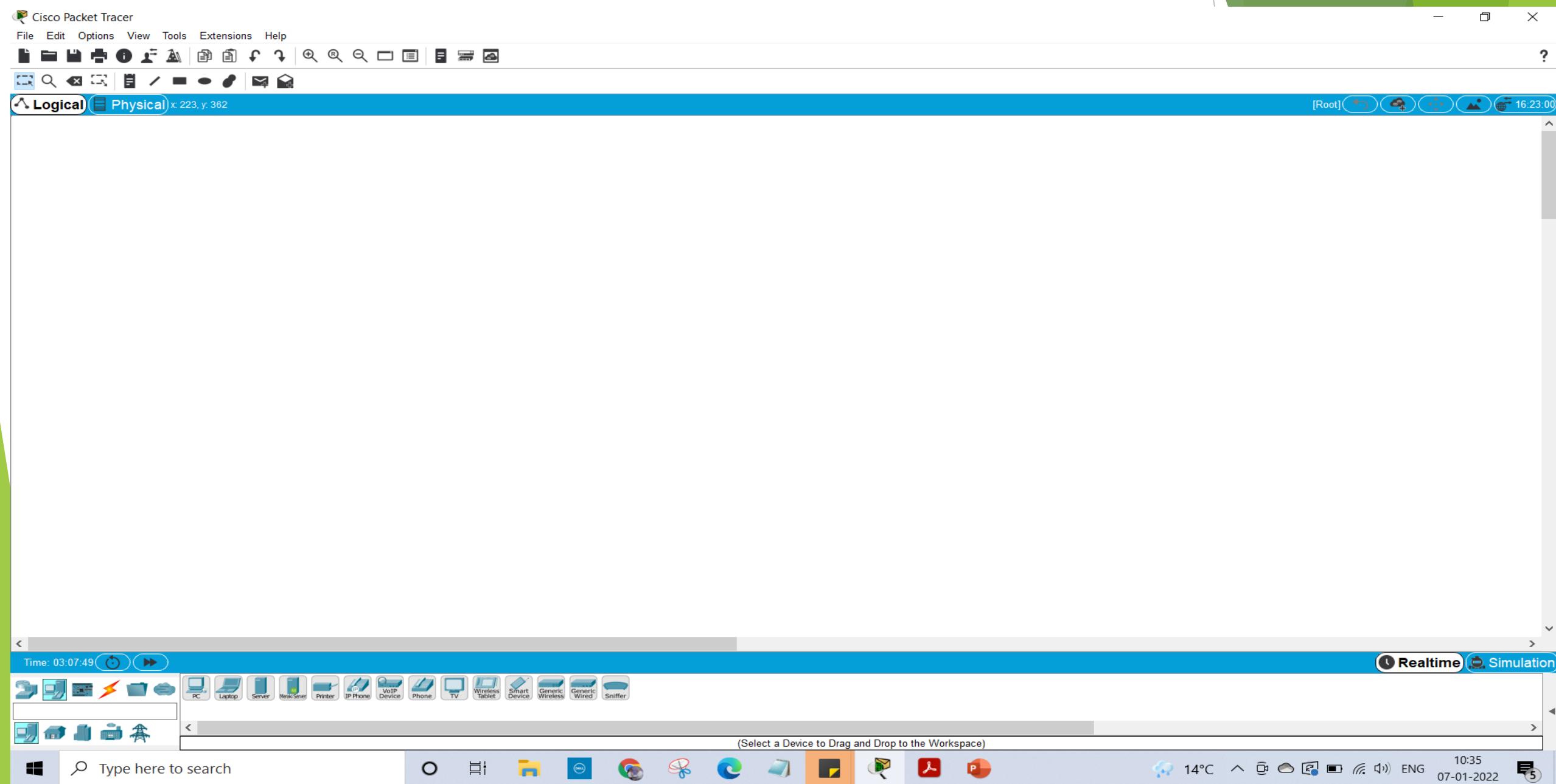
Event List Realtime Simulation



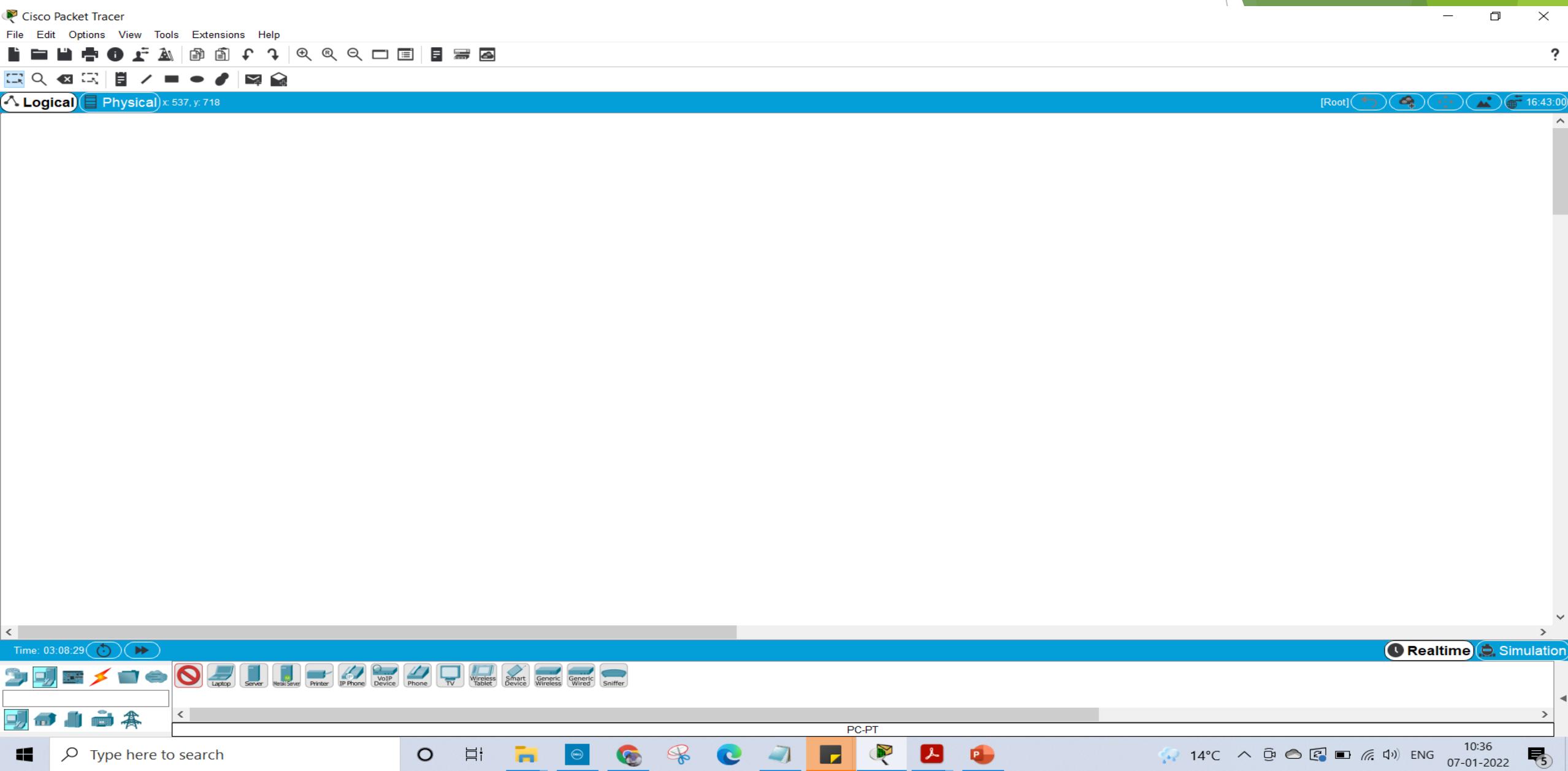
Automatically Choose Connection Type

Start implementing in your system

Working with Switch



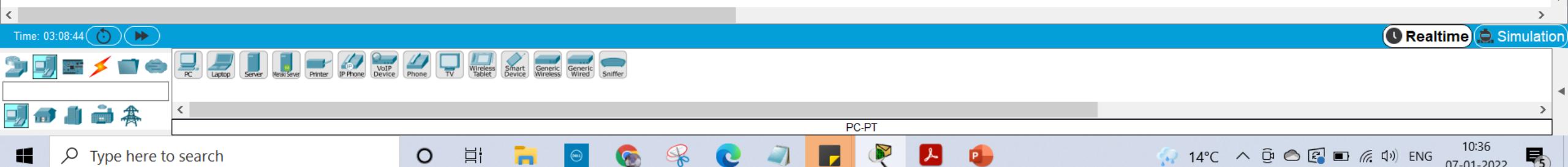
Working with Switch





Logical Physical X: 1036, Y: 701

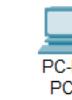
[Root] 16:50 30

PC-PT
PC0PC-PT
PC1



Logical Physical x: 427, y: 720

[Root] 17.07.00

PC-PT
PC0PC-PT
PC1

[Switches]



Realtime Simulation

(Select a Device to Drag and Drop to the Workspace)

Type here to search

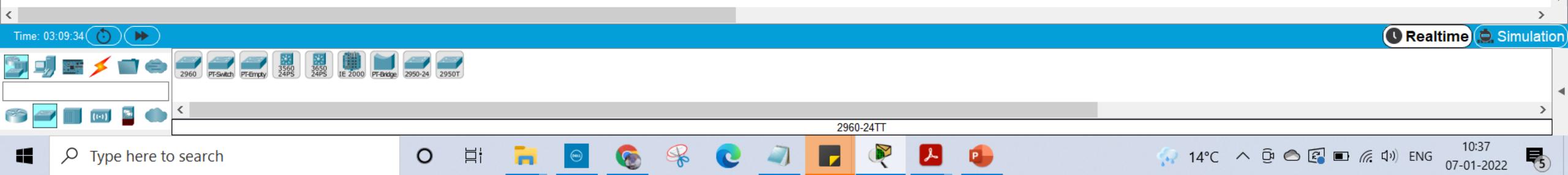


14°C ENG 10:37 07-01-2022



Logical Physical x: 427, y: 720

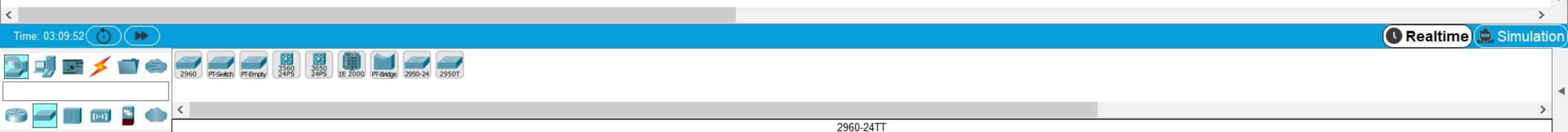
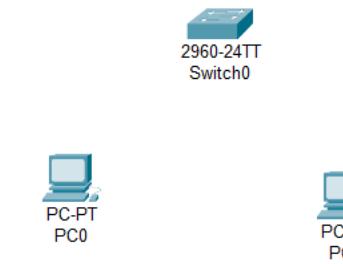
[Root] 17:15:30

PC-PT
PC0PC-PT
PC1



Logical Physical x: 889, y: 384

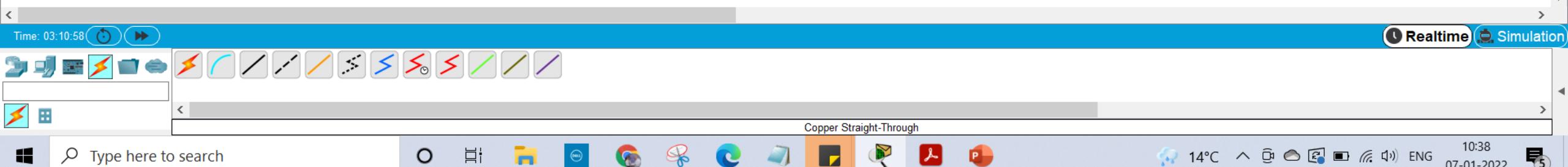
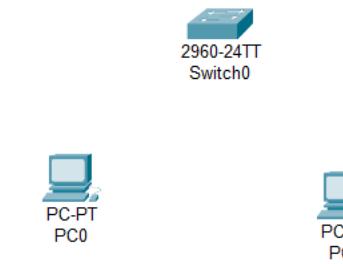
[Root] 17:24 30





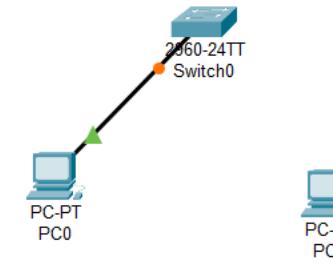
Logical Physical x: 401, y: 714

[Root] 17:57:30

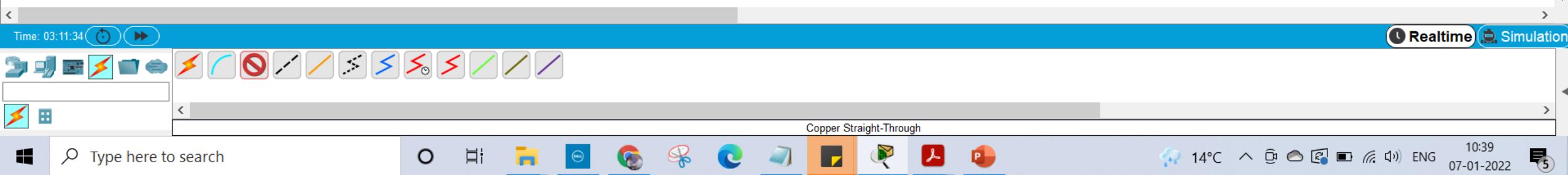




Logical Physical x: 481, y: 685



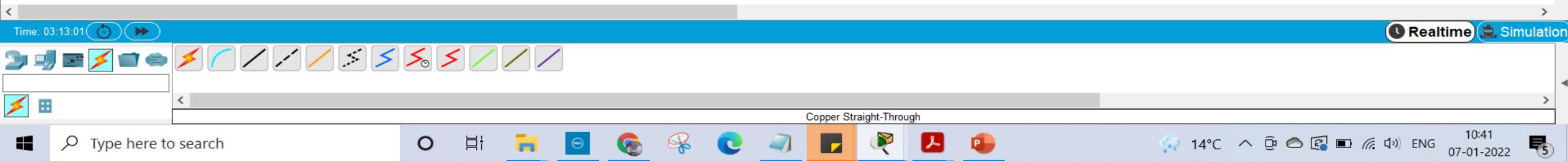
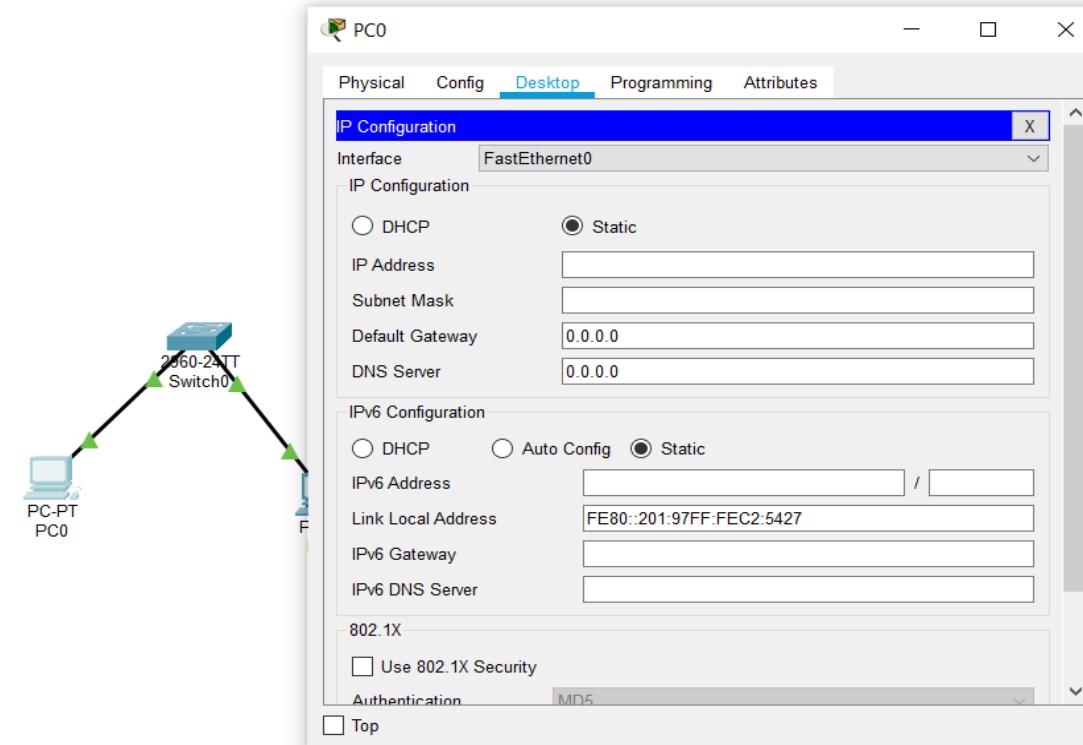
Use right click
option- then
select top one





Logical Physical x: 634, y: 272

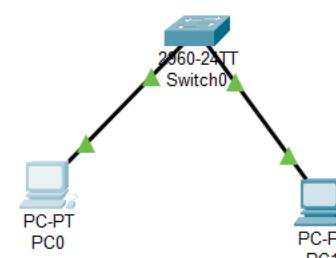
[Root] 18:58:30





Logical Physical x: 1308, y: 113

[Root] 19:23:00



PC0

Physical Config Desktop Programming Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration:

DHCP Static

IP Address: 192.168.10.2

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

DNS Server: 0.0.0.0

IPv6 Configuration:

DHCP Auto Config Static

IPv6 Address: /

Link Local Address: FE80::201:97FF:FEC2:5427

IPv6 Gateway:

IPv6 DNS Server:

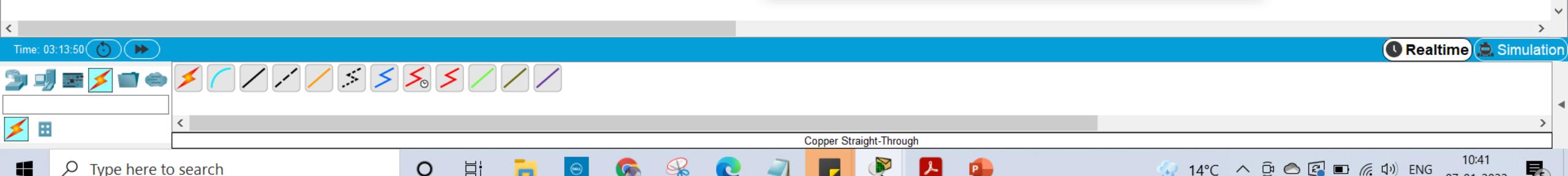
802.1X:

Use 802.1X Security

Authentication: MD5

Top

Another
will be 3

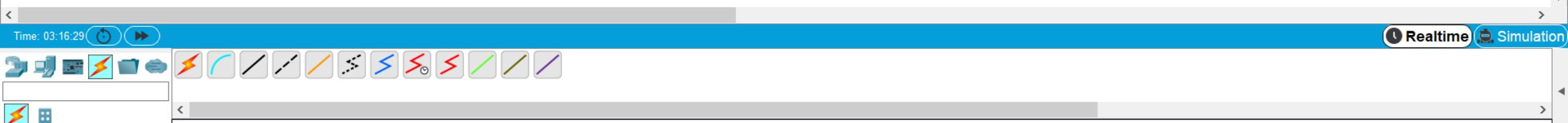
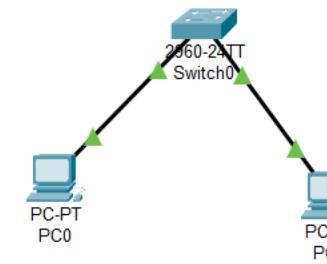




Logical Physical x: 381, y: 1

Add Simple PDU (P)

[Root] 20:43:00



Type here to search



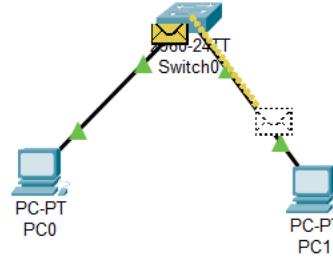
14°C ENG 10:44 07-01-2022

5



Logical Physical x: 985, y: 420

[Root] 20:56:00



Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.001	PC0	Switch0	ICMP
🕒	0.002	Switch0	PC1	ICMP

Reset Simulation Constant Delay Capturing... *

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPO, 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, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFT, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Time: 03:16:57.392 PLAY CONTROLS:

Event List Realtime Simulation



Type here to search

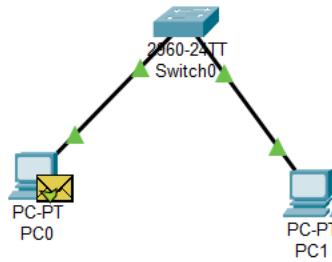


14°C ENG 10:44 07-01-2022



Logical Physical X: 1037, y: 410

[Root] 21:04:00



Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC0	ICMP
	0.001	PC0	Switch0	ICMP
	0.002	Switch0	PC1	ICMP
	0.003	PC1	Switch0	ICMP
	0.004	Switch0	PC0	ICMP

Reset Simulation Constant Delay Captured to: 0.004 s

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPO, 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, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFT, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Time: 03:16:57.395 PLAY CONTROLS:

Event List Realtime Simulation



Copper Straight-Through

