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Trainer name : satinnder

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DAY 01 : [14-06-2024]

1. **Differences between dual core and quad core:**

Dual-Core processors are those processing units that have two cores. A core is like a processing part that can complete a single time at a point in time so dual-core means that processing can be done at a faster rate. Dual-core processing systems allow performing more than one function at a time.

Quad-Core processors are those processing systems that have four cores so it is capable of performing a number of tasks at the same time means it provides the power of parallel processing. These processing systems are much faster than any other processing system.
Following is a table of differences between Dual Core and Quad Core Processors:

	Dual-Core	**Quad-Core**
1.	It consists of 2 cores, each designated to perform a specific task.	It consists of 4 cores which give the ability to perform multiple jobs concurrently.
2.	Resource-efficient as it uses less power as compared to Quad-core systems.	Resource utilization is more as compared to dual-core because the number of cores is more.
3.	The clock speed and computation capability are slower than Quad-core.	It is much faster than dual-core systems and computational efficiency is high.
4.	Parallel processing capability is not available in these processors.	It has 4 cores which give it the capability of parallel computing.
5.	The graphic support of the dual-core system is weak and it cannot run heavy graphics.	The graphic support of the quad-core system is high and it is used to run heavy graphics.
6.	The hardware of these processors does not get heated as they produce little heat.	Heat ejection is high and due to this, these processors make the hardware gets heated.
7.	The performance of dual-core processing systems is good.	The performance of dual-core processing systems is better.
8.	Not good for tasks like video editing or animations.	Easily handles the task of video editing and animations.

2. Difference between Intel Core i5 and i7

- Corei5 processors use the DMI bus type, while Corei7 uses the QPI bus type.
- Core i5 Processor is dual-core or quad-core, whereas Core i7 processor is dual-core, quad-core, and hex-core processor architectures.
- Hyper-Threading is not possible in Core i5 processors, but it is possible in Core i7 processors.
- The clock speed of Core i5 is 1.2-3.6 GHz, while the clock speed of corei7 is 1.3-3.5 GHz.
- size of Core i5 is 3MB-6MB. On the other hand, the cache size of Core i7 is 4MB-8MB.
- The battery of the Core i5 processor last for 14 hours and 45 but the battery of the Core i7 processor last for 10 hours and 49 minutes.
- i5 processors offer embedded options, but i7 processor does not offer an embedded option.

Day 02 : [17-06-2024]

Task : Write Ip Address

	N	11	11	11
18	255	0	0	0
19	255	128	0	0
110	255	192	0	0
111	255	224	0	0
112	255	240	0	0
113	255	248	0	0
116	255	252	0	0
115	255	254	0	0
116	255	255	0	0
117	255	255	128	0
118	255	255	192	0
119	255	255	224	0
120	255	255	240	0
121	255	255	248	0
122	255	255	252	0
123	255	255	254	0
124	255	255	255	0
125	255	255	255	128
126	255	255	255	192
127	255	255	255	224
128	255	255	255	240
129	255	255	255	248
130	255	255	255	252
131	255	255	255	254

Binary To Decimal Conversion

128	64	32	16	8	4	2	1	=	Answers
1	0	0	1	0	0	1	0	=	146
0	1	1	1	0	1	1	1	=	119
1	1	1	1	1	1	1	1	=	255
1	1	0	0	0	1	0	1	=	197
1	1	1	1	0	1	1	0	=	246
0	0	0	1	0	0	1	1	=	19
1	0	0	0	0	0	0	1	=	129
0	0	1	1	0	0	0	1	=	49
0	1	1	1	1	0	0	0	=	120
1	1	1	1	0	0	0	0	=	240
0	0	1	1	1	0	1	1	=	59
0	0	0	0	0	1	1	1	=	7

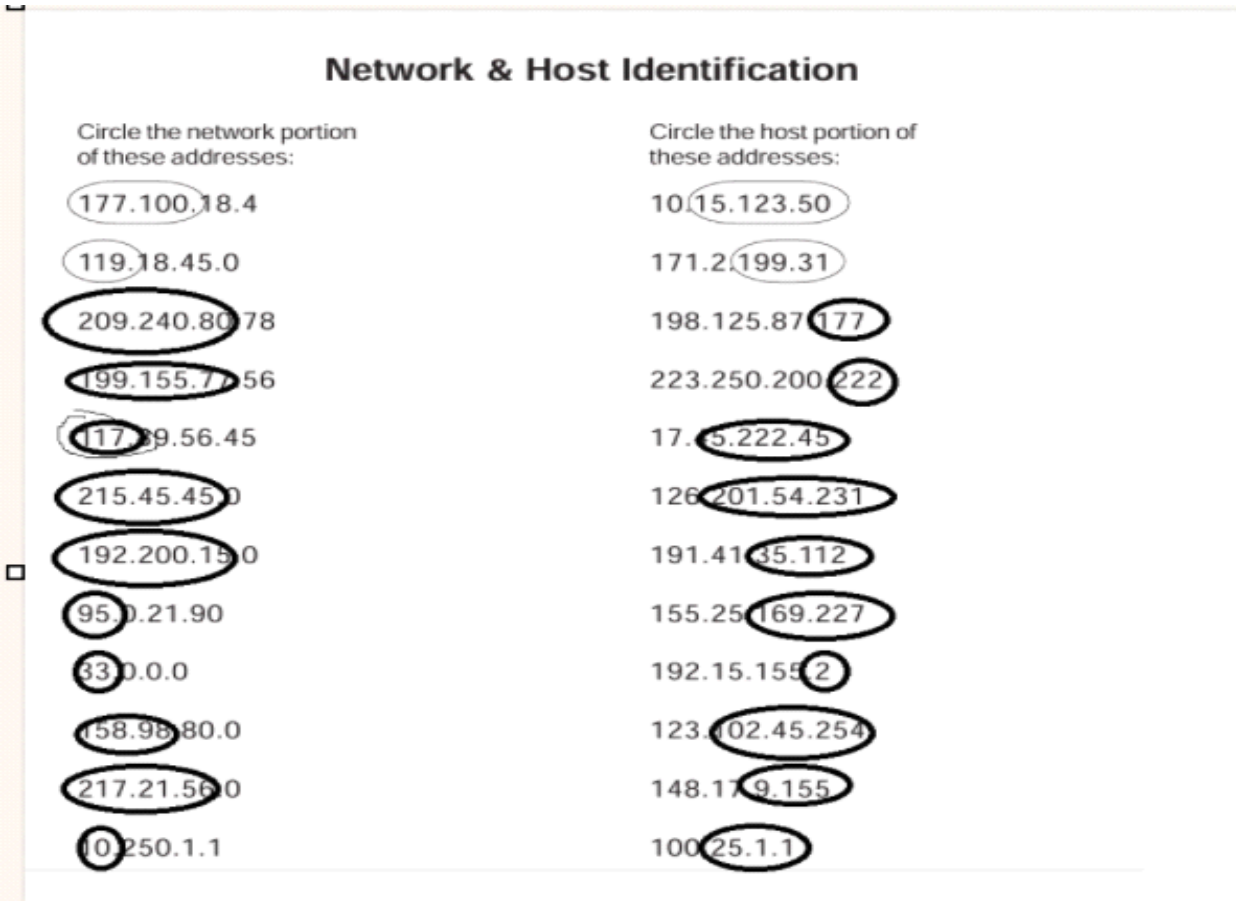
Decimal To Binary Conversion

128	64	32	16	8	4	2	1	
								= 255
1	1	1	0	1	1	1	0	= 238
0	0	1	0	0	0	1	0	= 34
0	1	1	1	1	0	1	1	= 123
0	0	1	1	0	0	1	0	= 50
1	1	1	1	1	1	1	1	= 255
1	1	0	0	1	0	0	0	= 200
0	0	0	0	1	0	1	0	= 10
1	0	0	0	1	0	1	0	= 138
0	0	0	0	0	0	0	1	= 1
0	0	0	0	1	1	0	1	= 13
1	1	1	1	1	0	1	0	= 250
0	1	1	0	1	0	1	1	= 107

1	1	1	0	0	0	0	0
=	224						
0	1	1	1	0	0	1	0
=	114						
1	1	0	0	0	0	0	0
=	192						

Address Class Identification

Address	Class
10.250.1.1	A
150.10.15.0	B
192.14.2.0	C
148.17.9.1	B
193.42.1.1	C
126.8.156.0	A
220.200.23.1	C
230.230.45.58	D
177.100.18.4	B
119.18.45.0	A
249.240.80.78	E



Network Addresses

Using the IP addres and suubnet mask shown write out the network address

188.10.18.2
255.255.0.0 188.10.0.0

10.10.48.80
255.255.255.0 10.10.48.0

192.149.24.191
255.255.255.0 192.149.24.0

150.203.23.19

255.255.0.0 150.203.0.0

10.10.10.10
255.0.0.0 10.0.0.0

186.13.23.110
255.255.255.0 186.13.23.0

223.69.230.250
255.255.0.0 223.69.0.0

200.120.135.15
255.255.255.0 200.120.135.0

Host Addresses

Using the IP addres and suubnet mask shown write out the host address

188.10.18.2
255.255.0.0 0.0.18.2

10.10.48.80
255.255.255.0 0.0.0.80

222.49.49.11
255.255.255.0 0.0.0.11

128.23.230.19
255.255.0.0 0.0.230.19

10.10.10.10
255.0.0.0 0.10.10.10

200.113.123.11
255.255.255.0 0.0.0.11

223.169.23.20
255.255.0.0 0.0.23.20

Default Subnet Masks

Write the correct default subnet mask for each of the following addresses:

177.100.18.4 255.255.0.0

119.18.45.0 255.0.0.0

191.249.234.191 255.255.0.0

223.23.223.109 255.255.255.0

10.10.250.1 255.0.0.0

126.123.23.1 255.0.0.0

223.69.230.250 255.255.255.0

192.12.35.105 255.255.255.0

77.251.200.51 255.0.0.0

189.210.50.1 255.255.0.0

88.45.65.35 255.0.0.0

128.212.250.254 255.255.0.0

/8 - 255.0.0.0

/9 - 255.128.0.0

/10 - 255.192.0.0

/11 - 255.224.0.0

/12 - 255.240.0.0

/13 - 255.248.0.0

/14 - 255.252.0.0

/15 - 255.254.0.0

/16 - 255.255.0.0

/17 - 255.255.128.0

/18 - 255.255.192.0

/19 - 255.255.224.0

/20 - 255.255.240.0

/21 - 255.255.248.0

/22 - 255.255.252.0

/23 - 255.255.254.0

/24 - 255.255.255.0

/25 - 255.255.255.128

/26 - 255.255.255.192

/27 - 255.255.255.224

/28 - 255.255.255.240

/29 - 255.255.255.248

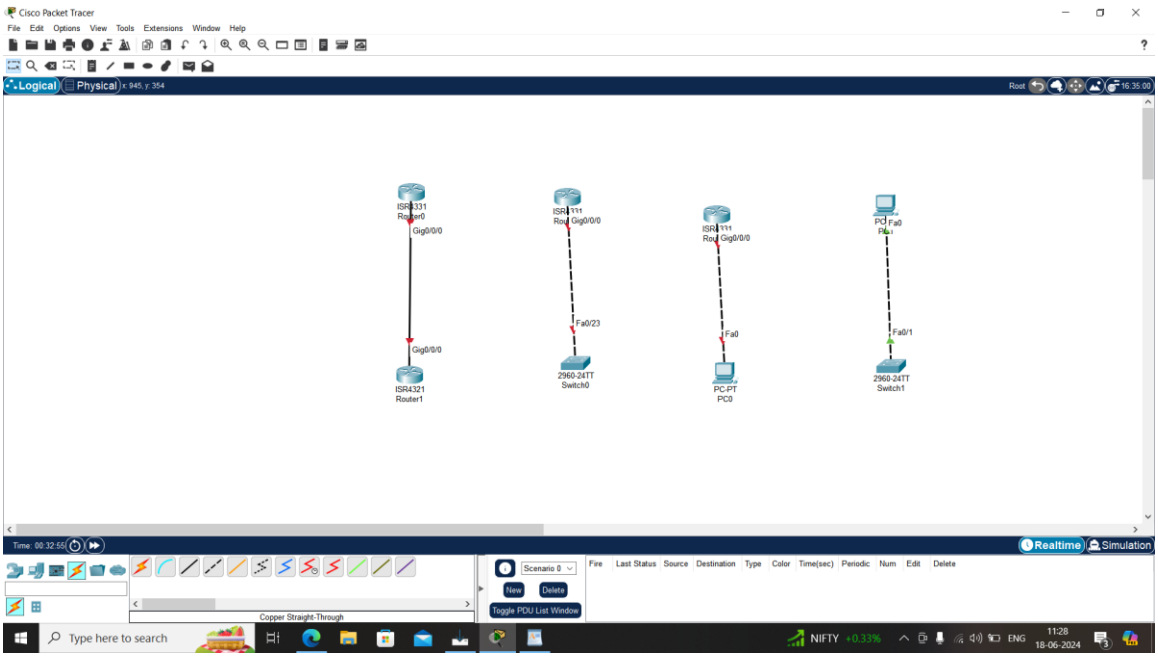
/30 - 255.255.255.252

/31 - 255.255.255.254

/32 - 255.255.255.255

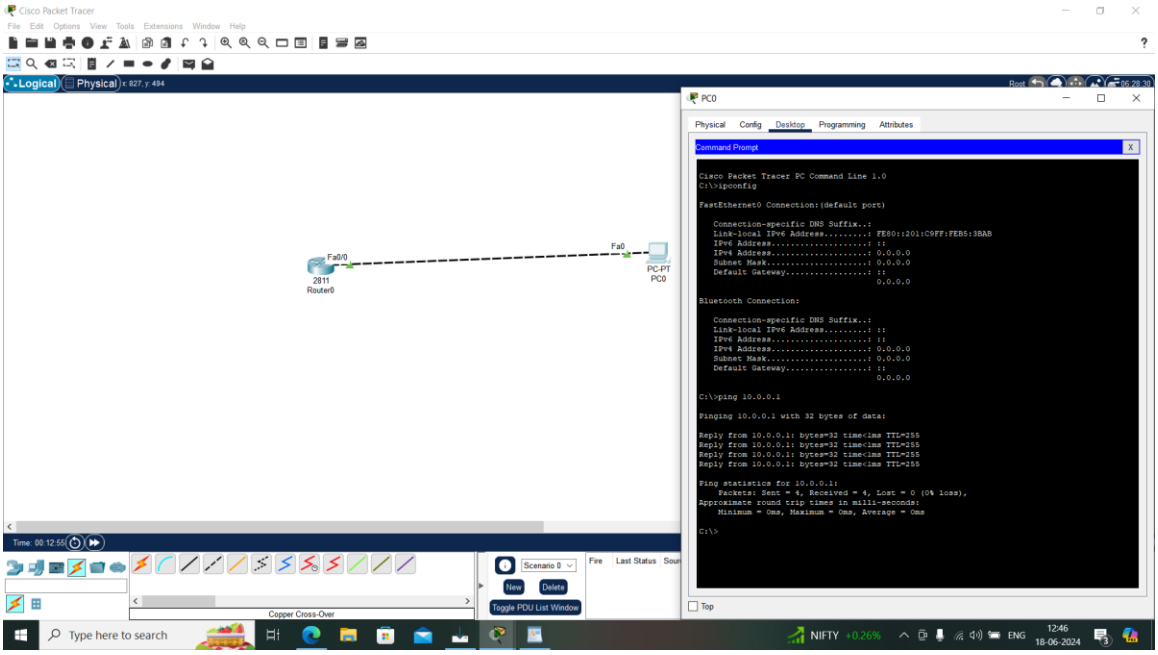
DAY 03 [18–06–2024]

LAB – 01 :

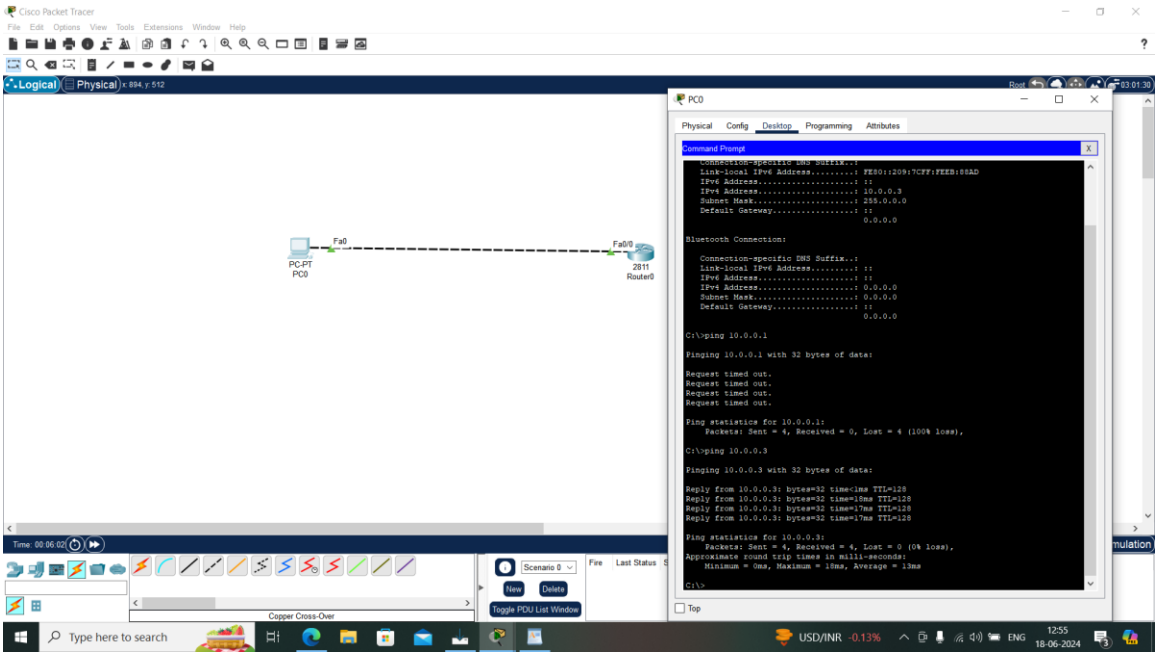


LAB - 02

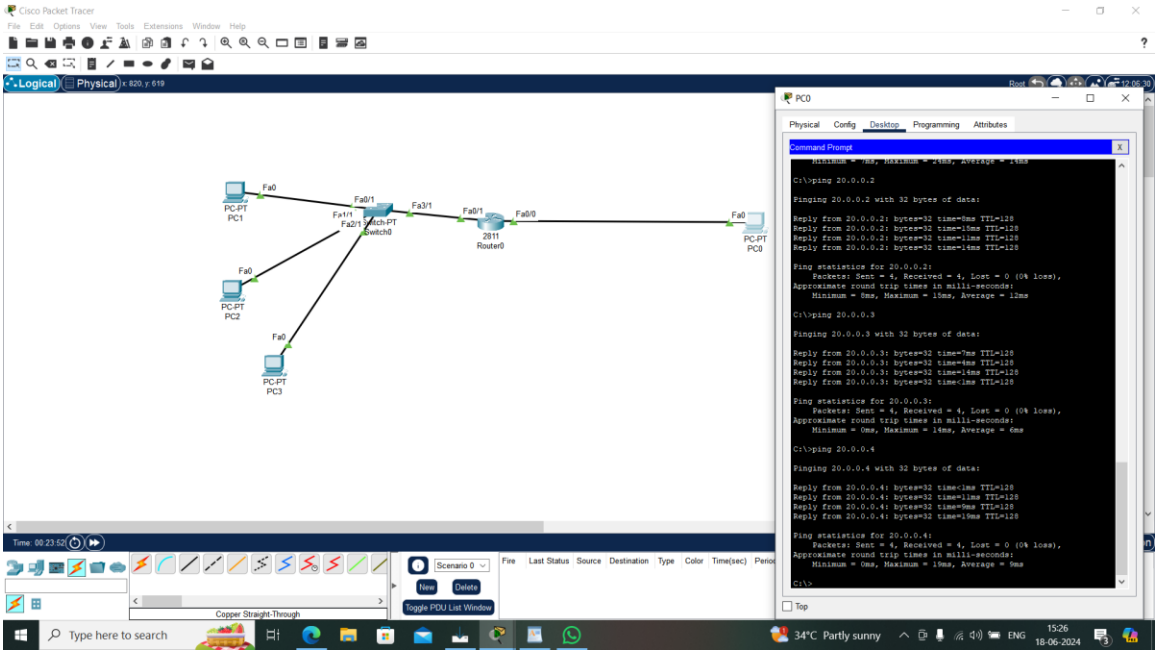
Router - Pc



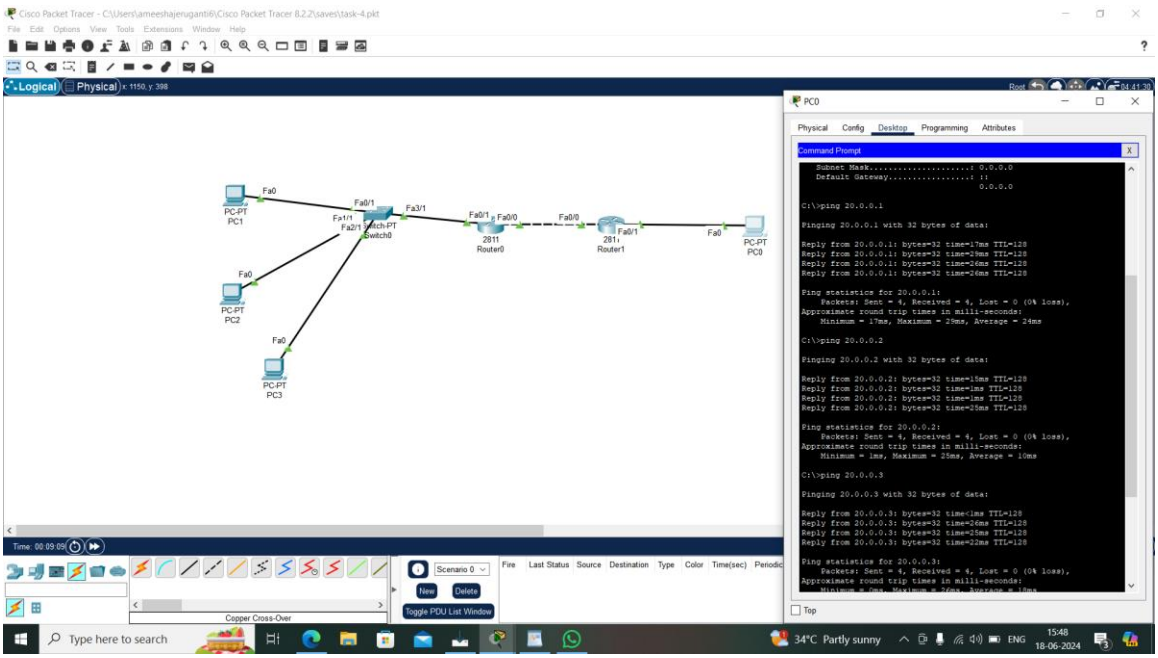
Pc - Router



LAB – 03

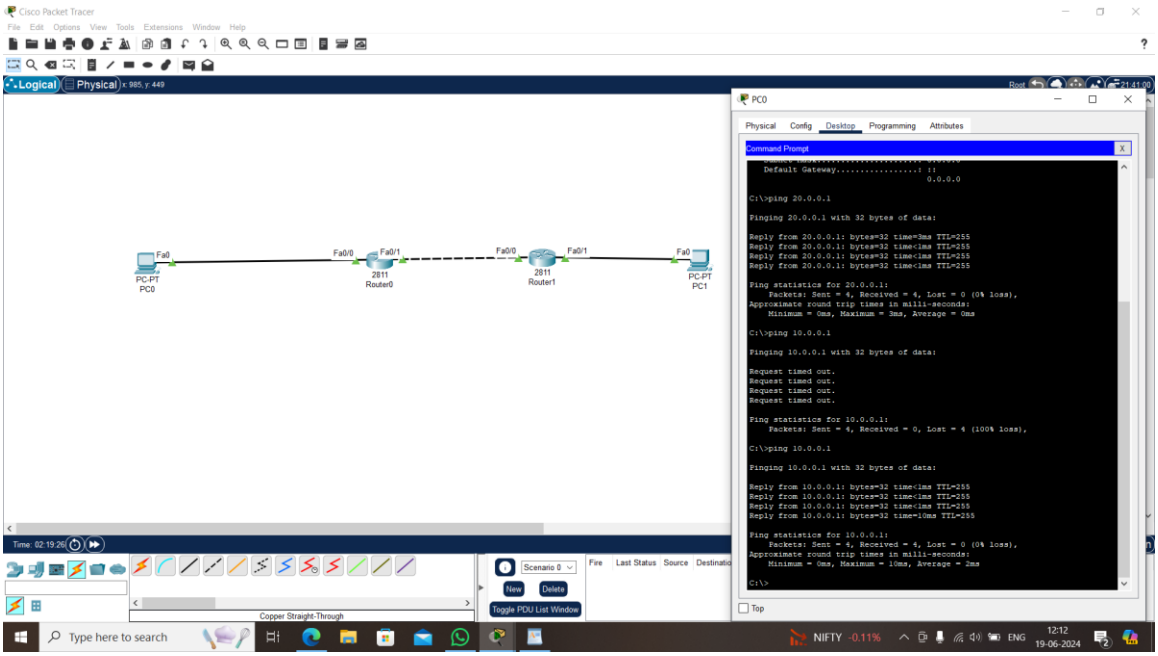


LAB – 04



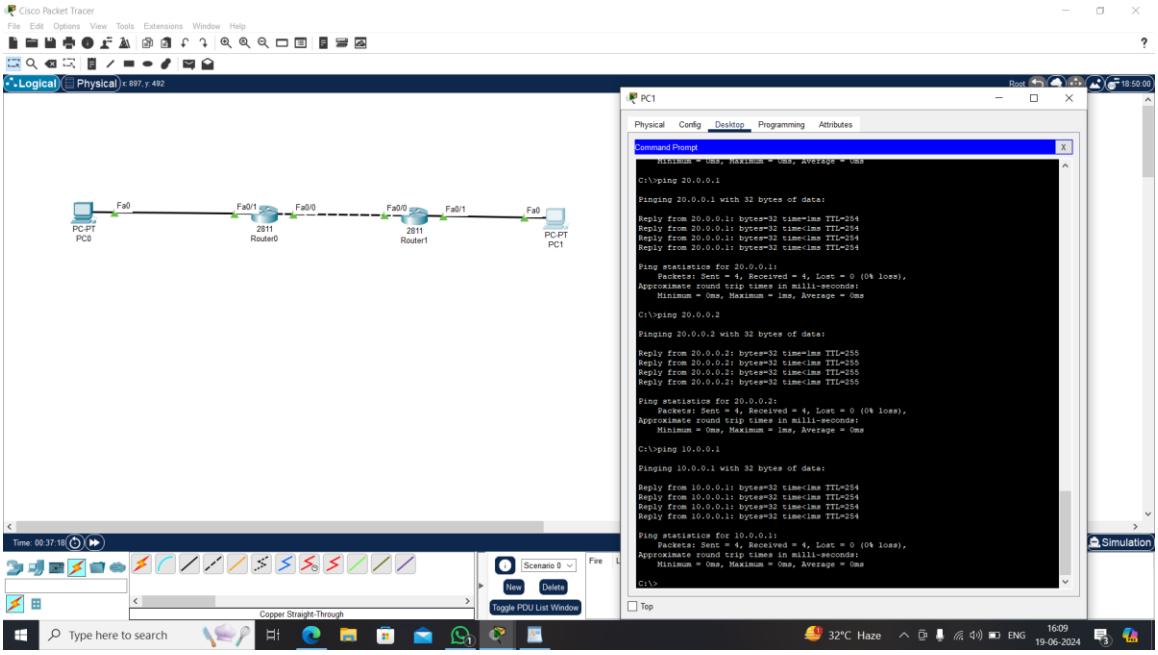
DAY 04[19-06-2024]

LAB – 01

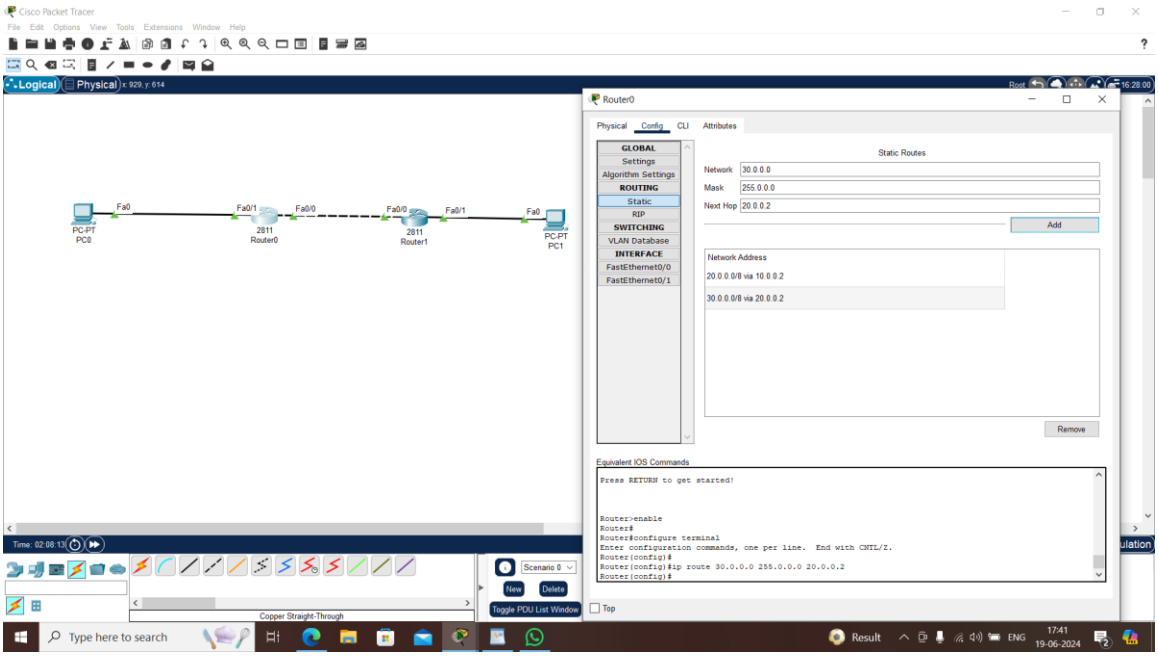


	A	B	C	D	E	F
1	connection	R1 F0/0	R2 F0/0	2R F0/0	2R F0/0	
2	pc0	connected	connected	Not connected	Not connected	
3	pc1	Not connected	Not connected	connected	connected	
4						
5						

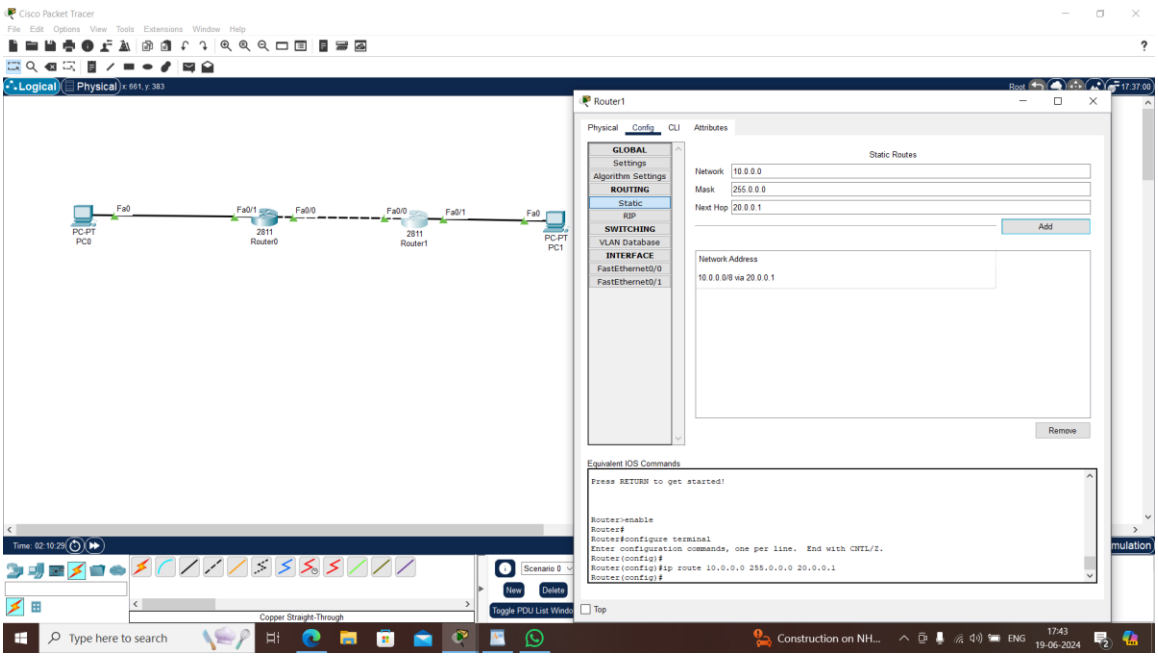
LAB – 02



Static Router R1:-



Static Router R2:-



DAY 05[20-06-2024]

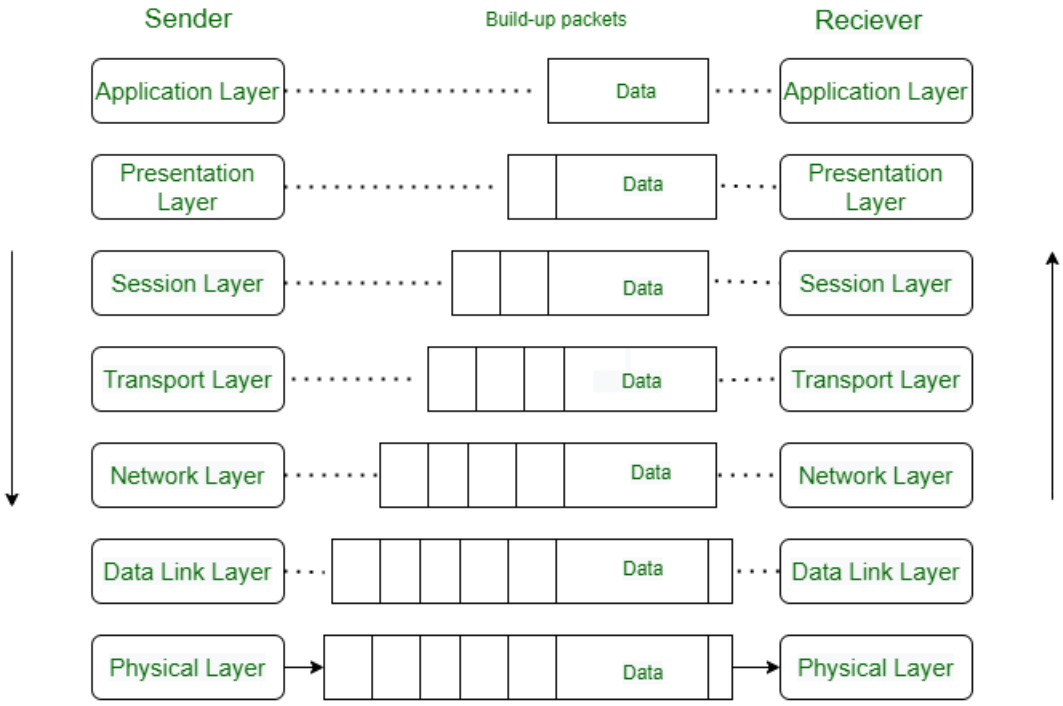
Task - 01

OSI MODEL :-

OSI stands for Open Systems Interconnection, where open stands to say non-proprietary. It is a 7-layer architecture with each layer having specific functionality to perform. All these 7 layers work collaboratively to transmit the data from one person to another across the globe. The OSI reference model was developed by ISO – 'International Organization for Standardization', in the year 1984.

The OSI model provides a theoretical foundation for understanding network communication. However, it is usually not directly implemented in its entirety in real-world networking hardware or software. Instead, specific protocols and technologies are often designed based on the principles outlined in the OSI model to facilitate efficient data transmission and networking operations.

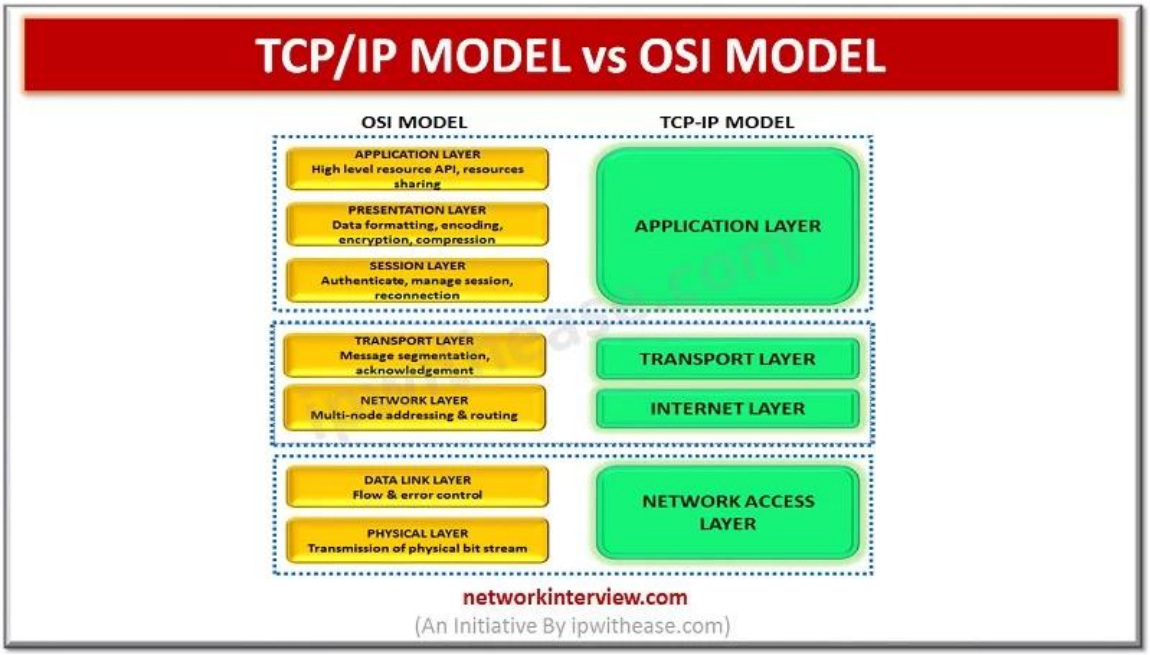
Number	Layers name	Protocols name
1	Application	FTP,TELNET,DHCP,HTTP,DNS,POP3,SMTP
2	Presentation	SSL(secure socket layerr)
3	Session	TCP,RTP
4	Transport	TCP,UPD
5	Network	Ipv4,Ipv6
6	Datalink	PPP(point to poi ,PPPT(point to p telling)
7	Physical	Hub,Repeaters,cables



TCP/IP MODEL :-

The TCP model stands for Transmission Control Protocol, whereas IP stands for Internet Protocol. A number of protocols that make the internet possibly comes under the TCP/IP model. Nowadays, we do not hear the name of the TCP/IP model much, we generally hear the name of the IPv4 or IPv6, but it is still valid. This model consists of 4 layers. Now, we will look at the diagrammatic representation of the TCP/IP model.

DIFFERENCE BETWEEN TCP/IP AND OSI MODEL?



Task – 02

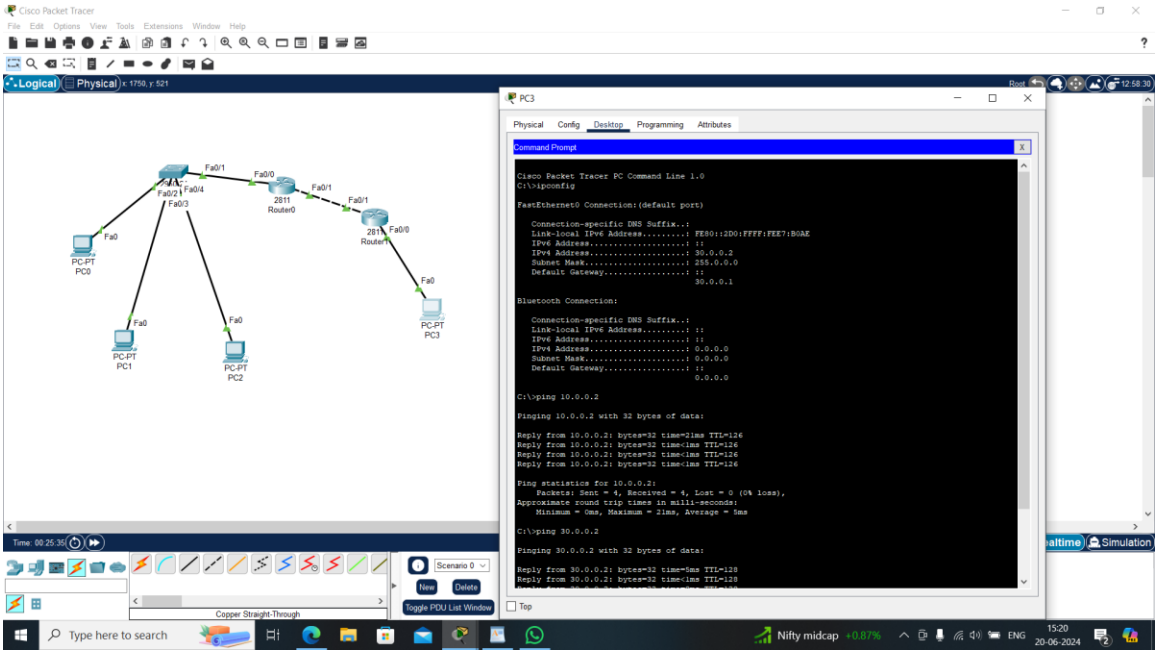
Port #	Protocol
21	FTP Control
20	FTP Data
23	Telnet
25	SMTP
53	DNS
80	HTTP
110	POP3
143	IMAP
443	HTTPS

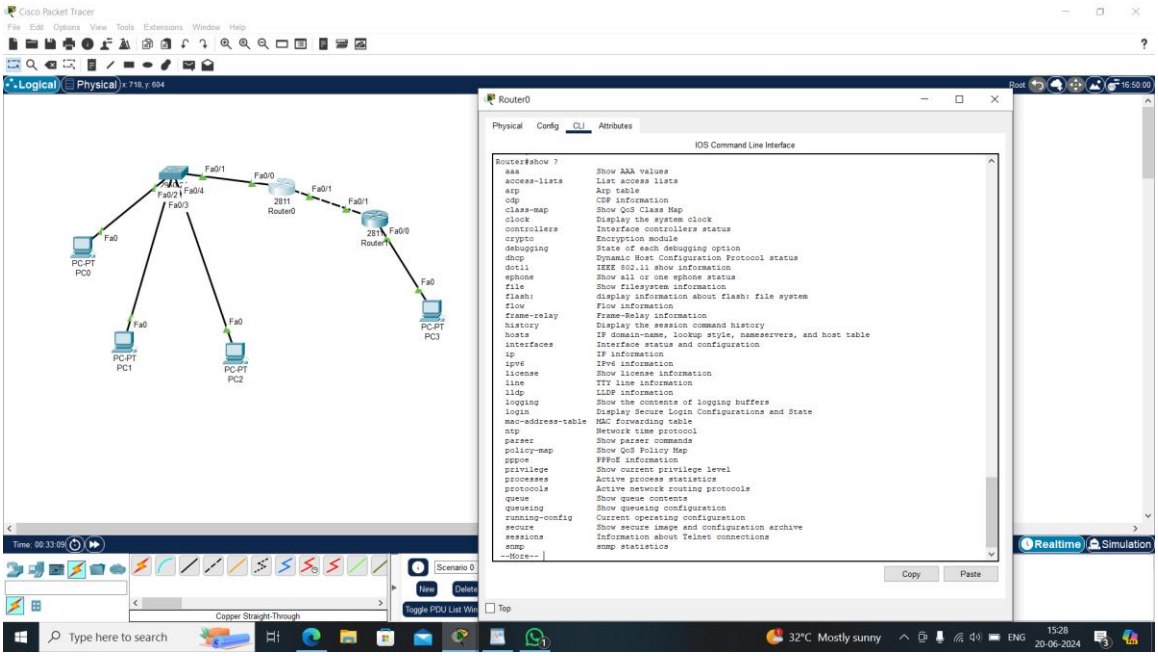
OSI Model Protocols and Port Numbers						
OSI Layer	Protocol	Port Number(s)				
Application (Layer	HTTP	80 (TCP)				
	HTTPS	443 (TCP)				
	FTP	21 (TCP for control), 20 (TCP for data)				
	SMTP	25 (TCP), 587 (TCP for submission), 465 (TCP for SMTPS)				
	POP3	110 (TCP), 995 (TCP for POP3S)				
	IMAP	143 (TCP), 993 (TCP for IMAPS)				
	DNS	53 (TCP/UDP)				
	Telnet	23 (TCP)				
	SSH	22 (TCP)				
	SNMP	161 (UDP for queries), 162 (UDP for traps)				
	NTP	123 (UDP)				
	LDAP	389 (TCP/UDP), 636 (TCP for LDAPS)				
	TFTP	69 (UDP)				
	IRC	194 (TCP)				
	SIP	5060 (TCP/UDP), 5061 (TCP for SIP over TLS)				
	RDP	3389 (TCP)				
	DHCP	67 (UDP server), 68 (UDP client)				
	Syslog	514 (UDP)				
	MQTT	1883 (TCP), 8883 (TCP for MQTT over SSL)				
	XMPP	5222 (TCP), 5223 (TCP for XMPP over SSL)				
	RTSP	554 (TCP/UDP)				
	Microsoft SQL Serv	1433 (TCP)				
	MySQL	3306 (TCP)				
	IPP	631 (TCP/UDP)				
	SMTPS	465 (TCP)				
	IMAPS	993 (TCP)				
	POP3S	995 (TCP)				
Presentation (Laye	SSL/TLS	Often associated with HTTPS (443), FTPS (990)				

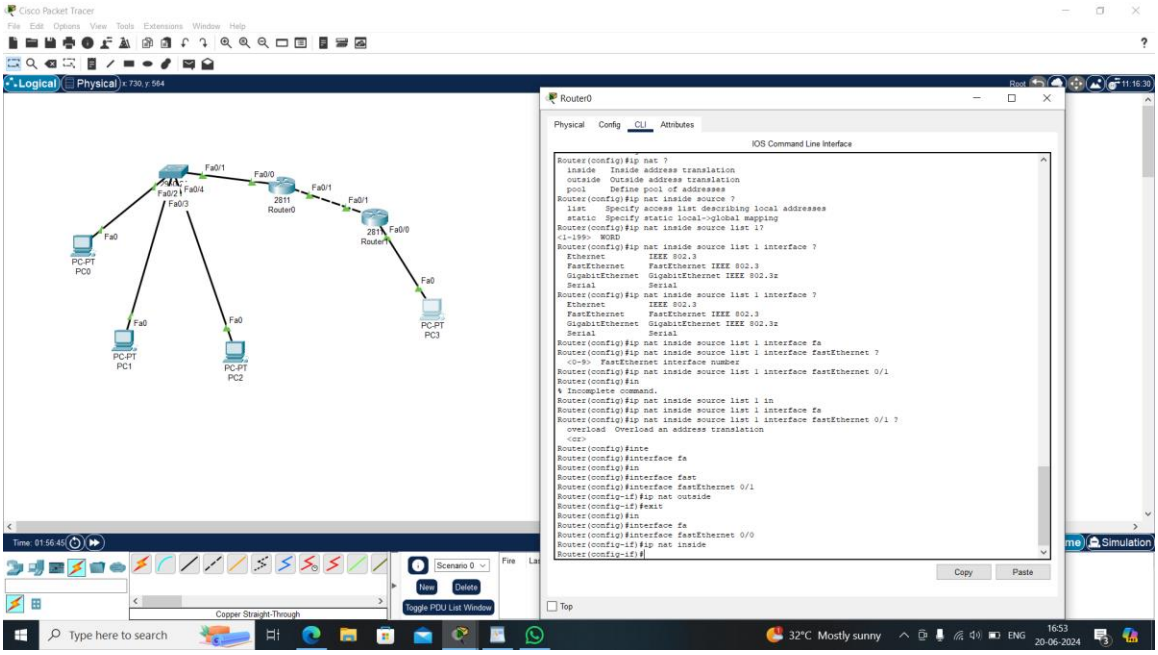
	MIME	N/A				
	JPEG	N/A				
	GIF	N/A				
	ASCII	N/A				
	XML	N/A				
	JSON	N/A				
Session (Layer 5)	NetBIOS	137 (UDP for name service), 138 (UDP for datagram service), 139 (TCP for session service)				
	PPTP	1723 (TCP)				
	RPC	135 (TCP/UDP)				
Transport (Layer 4)	TCP	N/A (Protocol itself)				
	UDP	N/A (Protocol itself)				
	SCTP	N/A (Protocol itself)				
	DCCP	N/A (Protocol itself)				
	BGP	179 (TCP)				
	RIP	520 (UDP)				
Network (Layer 3)	IP	N/A				
	ICMP	N/A				
	IGMP	N/A				
	OSPF	89 (Protocol itself)				
	ARP	N/A				
Data Link (Layer 2)	Ethernet	N/A				
	PPP	N/A				
	HDLC	N/A				
	Frame Relay	N/A				
	ATM	N/A				
	FDDI	N/A				
	MAC	N/A				
Physical (Layer 1)	Ethernet (cabling a	N/A				
	Wi-Fi	N/A				
	Fiber Optic Commu	N/A				

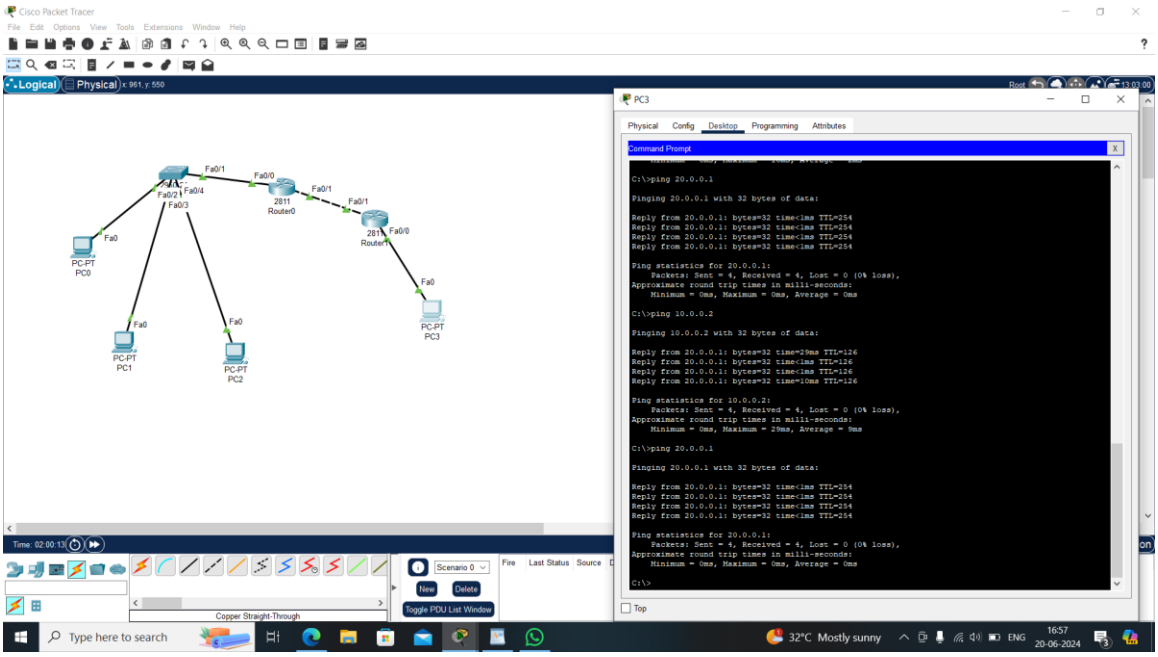
	Bluetooth	N/A				
	USB	N/A				
	DSL	N/A				
	ISDN	N/A				
	Coaxial Cable	N/A				

Task – 03


Cisco Packet Tracer
Logical
Physical
PC3
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::2D0:FFFF:FEE7:B0AE
IPv6 Address.....: ::
IPv4 Address.....: 30.0.0.2
Subnet Mask.....: 255.0.0.0
Default Gateway.....: ::
30.0.0.1
Bluetooth Connection:
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
0.0.0.0
C:\>ping 10.0.0.2
Pinging 10.0.0.2 with 32 bytes of data:
Reply from 10.0.0.2: bytes=32 time=21ms TTL=126
Reply from 10.0.0.2: bytes=32 time<1ms TTL=126
Reply from 10.0.0.2: bytes=32 time<1ms TTL=126
Reply from 10.0.0.2: bytes=32 time<1ms TTL=126
Ping statistics for 10.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 21ms, Average = 5ms
C:\>ping 30.0.0.2
Pinging 30.0.0.2 with 32 bytes of data:
Reply from 30.0.0.2: bytes=32 time=5ms TTL=128
Reply from 30.0.0.2: bytes=32 time<1ms TTL=128
Top
2811 Router0
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Realtime
Simulation
Type here to search
Nifty midcap +0.87%
ENG
15:20
20-06-2024


Cisco Packet Tracer
Logical
Physical
Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router#show ?
aaa Show AAA values
access-lists List access lists
arp Arp table
cdp CDP information
class-map Show QoS Class Map
clock Display the system clock
controllers Interface controllers status
crypto Encryption module
debugging State of each debugging option
dhcp Dynamic Host Configuration Protocol status
dot11 IEEE 802.11 show information
ephone Show all or one ephone status
file Show filesystem information
flash: display information about flash: file system
flow Flow information
frame-relay Frame-Relay information
history Display the session command history
hosts IP domain-name, lookup style, nameservers, and host table
interfaces Interface status and configuration
ip IP information
ipv6 IPv6 information
license Show license information
line TTY line information
lldp LLDP information
logging Show the contents of logging buffers
login Display Secure Login Configurations and State
mac-address-table MAC forwarding table
ntp Network time protocol
parser Show parser commands
policy-map Show QoS Policy Map
pppoe PPPoE information
privilege Show current privilege level
processes Active process statistics
protocols Active network routing protocols
queue Show queue contents
queueing Show queueing configuration
running-config Current operating configuration
secure Show secure image and configuration archive
sessions Information about Telnet connections
snmp snmp statistics
--More--
Copy
Paste
Top
2811 Router0
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
Copper Straight-Through
Scenario 0
New
Toggle PDU List Win
Realtime
Simulation
Type here to search
32°C Mostly sunny
ENG
15:28
20-06-2024


Cisco Packet Tracer
Logical
Physical
Router0
Physical
Config
CLI
Attributes
IOS Command Line Interface
Router(config)#ip nat ?
inside Inside address translation
outside Outside address translation
pool Define pool of addresses
Router(config)#ip nat inside source ?
list Specify access list describing local addresses
static Specify static local->global mapping
Router(config)#ip nat inside source list 17
<1-199> WORD
Router(config)#ip nat inside source list 1 interface ?
Ethernet IEEE 802.3
FastEthernet FastEthernet IEEE 802.3
GigabitEthernet GigabitEthernet IEEE 802.3z
Serial Serial
Router(config)#ip nat inside source list 1 interface fa
Router(config)#ip nat inside source list 1 interface fastEthernet ?
<0-0> FastEthernet interface number
Router(config)#ip nat inside source list 1 interface fastEthernet 0/1
Router(config)#in
% Incomplete command.
Router(config)#ip nat inside source list 1 in
Router(config)#ip nat inside source list 1 interface fa
Router(config)#ip nat inside source list 1 interface fastEthernet 0/1 ?
overload Overload an address translation
<cr>
Router(config)#inte
Router(config)#interface fa
Router(config)#in
Router(config)#interface fast
Router(config)#interface fastEthernet 0/1
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#in
Router(config)#interface fa
Router(config)#interface fastEthernet 0/0
Router(config-if)#ip nat inside
Router(config-if)#
Copy
Paste
Top
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
2811 Router0
2811 Router1
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Type here to search
32°C Mostly sunny
ENG
16:53
20-06-2024


Cisco Packet Tracer
Logical
Physical
PC3
Physical
Config
Desktop
Programming
Attributes
Command Prompt
C:\>ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:
Reply from 20.0.0.1: bytes=32 time<1ms TTL=254
Reply from 20.0.0.1: bytes=32 time<1ms TTL=254
Reply from 20.0.0.1: bytes=32 time<1ms TTL=254
Reply from 20.0.0.1: bytes=32 time<1ms TTL=254
Ping statistics for 20.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 10.0.0.2
Pinging 10.0.0.2 with 32 bytes of data:
Reply from 20.0.0.1: bytes=32 time=29ms TTL=126
Reply from 20.0.0.1: bytes=32 time<1ms TTL=126
Reply from 20.0.0.1: bytes=32 time<1ms TTL=126
Reply from 20.0.0.1: bytes=32 time=10ms TTL=126
Ping statistics for 10.0.0.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 29ms, Average = 9ms
C:\>ping 20.0.0.1
Pinging 20.0.0.1 with 32 bytes of data:
Reply from 20.0.0.1: bytes=32 time<1ms TTL=254
Reply from 20.0.0.1: bytes=32 time<1ms TTL=254
Reply from 20.0.0.1: bytes=32 time<1ms TTL=254
Reply from 20.0.0.1: bytes=32 time<1ms TTL=254
Ping statistics for 20.0.0.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>
Top
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC3
2811 Router0
2811 Router1
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
Type here to search
32°C Mostly sunny
ENG
16:57
20-06-2024