Assignment-2

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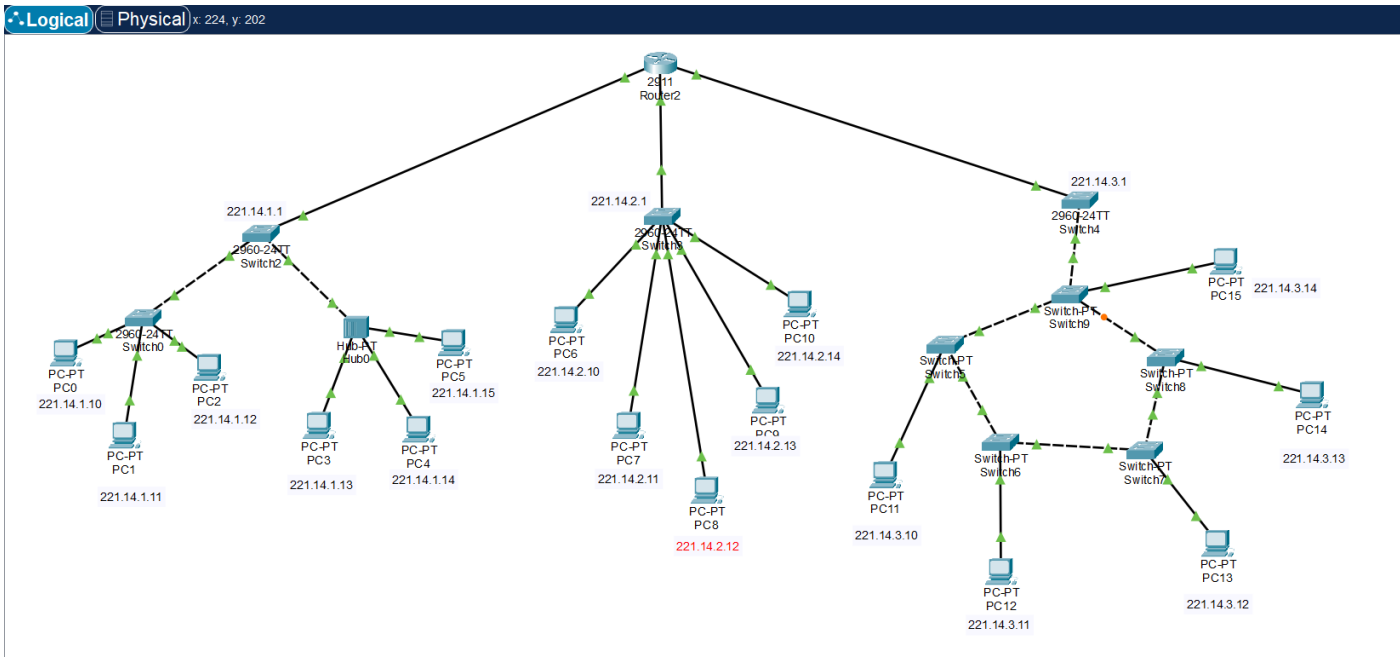
3 LAN networks connected via a single Router (CPT)

Each LAN network is configured via Tree, Star and Ring topologies respectively.

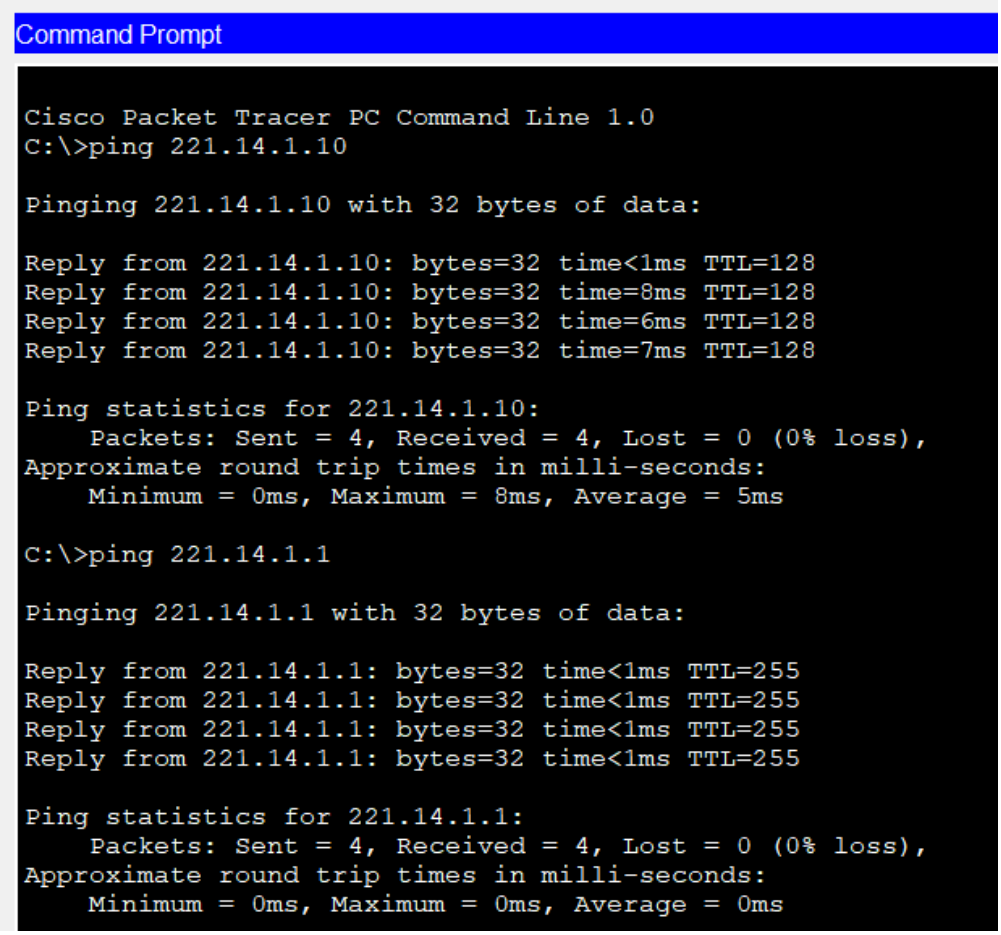
Router: A **router** is a networking device that connects multiple computer networks together and directs data packets between them. It manages traffic within a network and between different networks by determining the most efficient path for data to travel from the source to the destination.



Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic
	Successful	PC0	PC1	ICMP		0.000	N
	Successful	PC0	PC5	ICMP		0.000	N
	Successful	PC0	Router2	ICMP		0.000	N
	Successful	PC0	Router2	ICMP		0.000	N
	Successful	PC0	PC6	ICMP		0.000	N
	Successful	PC3	PC6	ICMP		0.000	N
	Successful	PC1	PC7	ICMP		0.000	N
	Successful	PC10	PC6	ICMP		0.000	N

Successful	PC9	Router2	ICMP	0.000	N
Successful	PC1	PC8	ICMP	0.000	N
Successful	PC7	PC5	ICMP	0.000	N
Successful	PC11	PC15	ICMP	0.000	N
Successful	PC15	PC14	ICMP	0.000	N
Successful	PC14	Router2	ICMP	0.000	N
Successful	PC9	PC3	ICMP	0.000	N
Successful	PC15	PC0	ICMP	0.000	N
Successful	PC15	PC3	ICMP	0.000	N
Successful	PC15	PC10	ICMP	0.000	N
Successful	PC11	PC0	ICMP	0.000	N
Successful	PC11	PC3	ICMP	0.000	N
Successful	PC11	PC8	ICMP	0.000	N
Successful	PC13	PC10	ICMP	0.000	N

Command prompt



```
C:\>ping 221.14.2.11

Pinging 221.14.2.11 with 32 bytes of data:

Reply from 221.14.2.11: bytes=32 time<1ms TTL=127
Reply from 221.14.2.11: bytes=32 time<1ms TTL=127
Reply from 221.14.2.11: bytes=32 time<1ms TTL=127
Reply from 221.14.2.11: bytes=32 time<1ms TTL=127

Ping statistics for 221.14.2.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 221.14.2.1

Pinging 221.14.2.1 with 32 bytes of data:

Reply from 221.14.2.1: bytes=32 time<1ms TTL=255
Reply from 221.14.2.1: bytes=32 time<1ms TTL=255
Reply from 221.14.2.1: bytes=32 time<1ms TTL=255
Reply from 221.14.2.1: bytes=32 time<1ms TTL=255

Ping statistics for 221.14.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 221.14.3.14

Pinging 221.14.3.14 with 32 bytes of data:

Reply from 221.14.3.14: bytes=32 time<1ms TTL=127
Reply from 221.14.3.14: bytes=32 time<1ms TTL=127
Reply from 221.14.3.14: bytes=32 time<1ms TTL=127
Reply from 221.14.3.14: bytes=32 time<1ms TTL=127

Ping statistics for 221.14.3.14:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
C:\>ping 221.14.3.1

Pinging 221.14.3.1 with 32 bytes of data:

Reply from 221.14.3.1: bytes=32 time<1ms TTL=255
Reply from 221.14.3.1: bytes=32 time<1ms TTL=255
Reply from 221.14.3.1: bytes=32 time<1ms TTL=255
Reply from 221.14.3.1: bytes=32 time<1ms TTL=255

Ping statistics for 221.14.3.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Inference:

In this setup, **three different LAN networks are connected via a single router in Cisco Packet Tracer**. Each LAN uses a different network topology:

- **Tree topology** for LAN 1
- **Star topology** for LAN 2
- **Ring topology** for LAN 3

The router acts as a central communication device, enabling these three different networks to communicate with one another and with external networks such as the internet. This design illustrates how multiple, structurally different local area networks can be integrated and managed through a single routing device, ensuring effective data transfer and network management.