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## Assignment No. 2

TITLE :- Setup WAN which able to ping Wired to Wireless LAN.

### Problem Definition :-

Setup a WAN which contains wired as well as wireless LAN by using a packet tracer tool.  
Demonstrate transfer of a packet from LAN 1 (Wired LAN) to LAN 2 (Wireless LAN).

### Learning Objective :-

Setup wired to wireless LAN.

### Learning Outcome :-

Creation of wired to wireless network.

### Prerequisites :-

Open source operating system, Packet Tracer, Wireshark, Core i3/i5/i7 with 4GB RAM system, Wired Wireless AP/router, Wireless Adapter.

### Concepts Related Theory :-

What is a Wi-Fi or wireless network vs a wired network?

A wireless network allows device to stay



connected to the network but roam untethered to any wires. Access points amplify Wi-Fi signals, so a device can be far from a router but still be connected to the network. When you connect to a Wi-Fi hotspot at a cafe, a hotel, an airport lounge, or another public place, you're connecting to that business's wireless network.

A wired network uses cables to connect devices, such as laptop or desktop computers, to the Internet or another network. A wired network has some disadvantages when compared to a wireless network. The biggest disadvantage is that your device is tethered to a router. The most common wired networks use cables connected to one end to an Ethernet port on the network router and at the other end to a computer or other device.

Previously it was thought that wired networks were faster and more secure than wireless networks. But continual enhancements to wireless network technology such as the Wi-Fi 6 networking standard have eroded speed and security differences between wired and wireless networks.

Algorithm :-

1. Start.

2. Collect router and Wireless card.



3. Connect router in local LAN.
4. Connect USB/Wireless adapter to system.
5. Network configuration select automatic dhcp.
6. Connect system with router.
7. Check your system IP and try to ping any LAN system from your system.
8. Start Wireshark
9. Provide filter  $ip.addr == 10.10.10.71$
10. Repeat the same using Packet Tracer.

### CONCLUSION:

Thus, after successfully completing this assignment, moved to Wireless LAN.

## Screenshots :-

The screenshot shows the Logical View of a network in Packet Tracer. The topology consists of a central Switch-PT (Switch1) connected to two Laptop-PT (Laptop0 and Laptop1) and an AccessPoint-PT (Access Point0). A Smartphone0 is connected to the Access Point. A Command Prompt window is open on Smartphone0, showing the following output:

```
Packet Tracer PC Command Line 1.0
PC>ipconfig

Wireless0 Connection: (default port)

Link-local IPv6 Address..... FE80::290:21FF:FE22:B1E8
IP Address..... 192.168.0.10
Subnet Mask..... 255.255.255.0
Default Gateway..... 0.0.0.0

3G/4G Cell1 Connection:

Link-local IPv6 Address..... FE80::290:21FF:FE7D:E50A
Autoconfiguration IP Address..... 169.254.229.10
Subnet Mask..... 255.255.0.0
Default Gateway..... 0.0.0.0

PC>ping 192.168.0.30

Pinging 192.168.0.30 with 32 bytes of data:

Reply from 192.168.0.30: bytes=32 time=19ms TTL=128
Reply from 192.168.0.30: bytes=32 time=12ms TTL=128
Reply from 192.168.0.30: bytes=32 time=9ms TTL=128
Reply from 192.168.0.30: bytes=32 time=12ms TTL=128

Ping statistics for 192.168.0.30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 9ms, Maximum = 19ms, Average = 13ms
PC>
```

The bottom status bar shows the time as 00:05:08 and the Realtime simulation mode.

The screenshot shows the Logical View of the same network topology. The Simulation Panel is open, displaying the Event List and Play Controls. The Event List shows the following events:

Vis.	Time(sec)	Last Di	At De	Type	Info
	0.007	Lapt...	Swit...	ICMP	
	0.008	Switc...	Acce...	ICMP	
	0.009	--	Acce...	ICMP	
	0.010	Acces...	Sma...	ICMP	
	0.010	Acces...	Sma...	ICMP	

The Play Controls section shows the simulation running. The Event List Filters - Visible Events section lists various protocols and events.

The bottom status bar shows the time as 00:05:40.001 and the Simulation mode.



ip.addr == 10.65.189.244

No.	Time	Source	Destination	Protocol	Length	Info
10706	54.350346	192.168.43.115	10.65.189.244	ICMP	74	Echo (ping) request id=0x0001, seq=1/256, ttl=
10710	54.352813	10.65.189.244	192.168.43.115	ICMP	74	Echo (ping) reply id=0x0001, seq=1/256, ttl=
10890	55.368905	192.168.43.115	10.65.189.244	ICMP	74	Echo (ping) request id=0x0001, seq=2/512, ttl=
10891	55.371244	10.65.189.244	192.168.43.115	ICMP	74	Echo (ping) reply id=0x0001, seq=2/512, ttl=
11059	56.394625	192.168.43.115	10.65.189.244	ICMP	74	Echo (ping) request id=0x0001, seq=3/768, ttl=
11061	56.397259	10.65.189.244	192.168.43.115	ICMP	74	Echo (ping) reply id=0x0001, seq=3/768, ttl=
11249	57.422563	192.168.43.115	10.65.189.244	ICMP	74	Echo (ping) request id=0x0001, seq=4/1024, tt
11250	57.425100	10.65.189.244	192.168.43.115	ICMP	74	Echo (ping) reply id=0x0001, seq=4/1024, tt