WEEK 1- Introduction

WEEK-1

9/6/23 LAN, WAN, Ethernet, IP Address, Hub, Switch, Server, End device, Nodes.

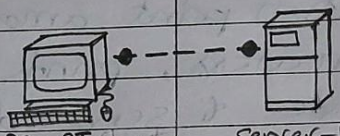
- LAN- A local area network (LAN) is a collection of devices connected together in 1 physical location, such as building, office / home. A LAN can be small or large, ranging from a home network with thousands of users & devices in an office or school.
- WAN- wide area network (WAN) is a computer network that connects smaller networks. Since WANs are not tied to a specific location, they allow localized networks to communicate with one another across great distances.
- Ethernet- Traditional technology for connecting devices in a wired local network (LAN) or (WAN) wide area network. It enables devices to communicate with each other via protocols, which is a set of rules / common network language.
- IP Address- Is a unique numerical identifier for every device / network that connects to the internet.
- Hub- is a physical layer networking device which is used to connect multiple devices in a network. Generally used in LAN.
- Switch- A network switch connects devices in a network to each other, enabling them to communicate by exchanging data packets.

- server- A piece of computer hardware or software that provides functionality for other programs / devices called 'clients'.
- End device - A source / destination device in a networked system.
- Nodes- Network nodes can be defined as the connection point among network devices such as routers, printers / switches that can reciere & send data from 1 endpoint to another.

Sending Simple test messages in Realtime-

1) Add a client end-device & a web server end-device.
2) Connect both using a copper cross-over cable.
3) set the client's DNS server to 192.168.0.105. Set the IP address under fast ethernet to 192.168.0.110.
4) select webserver & IP address to be set to 192.168.0.105.
5) select the DNS services & set the domain name as "www.firstlab.com" & IP address as 192.168.0.105 & add.
6) Ensure DNS server is on.
7) Add simple PDU tool is used to send a simple 1-time message from PC to server & vice-versa.
8) The log values are displayed on the PDU list window.

- Topology -



- command Prompt -

PC > ping 192.168.0.110
pinging 192.168.0.110 with 32 bytes of data:

Reply from 192.168.0.110: bytes = 32 time=4ms TTL=128
Reply from 192.168.0.110: bytes = 32 time=2ms TTL=128
Reply from 192.168.0.110: bytes = 32 time=4ms TTL=128
Reply from 192.168.0.110: bytes = 32 time=4ms TTL=128

Ping statistics for 192.168.0.110:
Packets: sent = 4, recieved = 4, Loss = 0 (0% Loss),
approximate round trip times in millisecond:

minimum = 2ms, maximum = 4ms, average = 3ms

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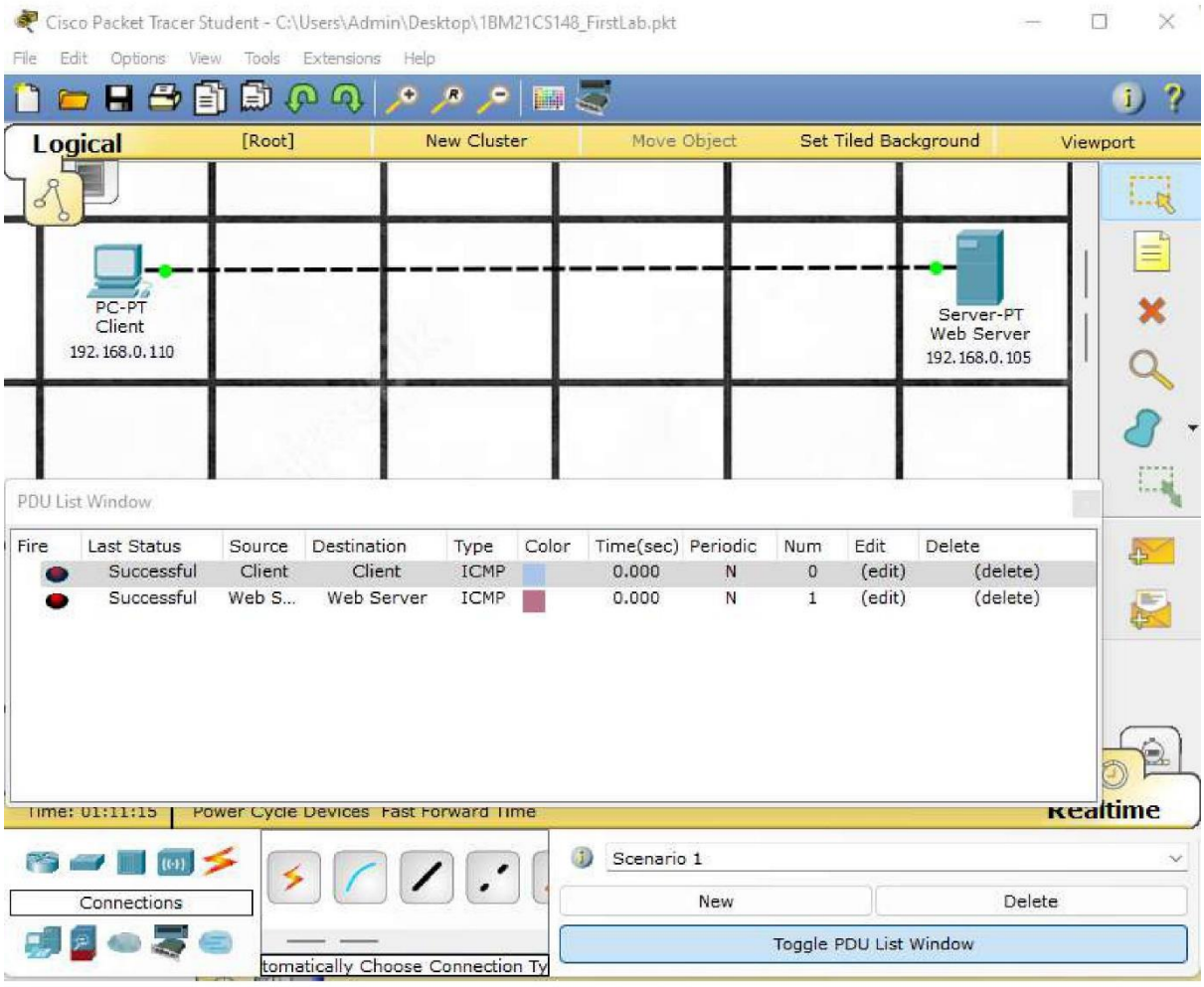
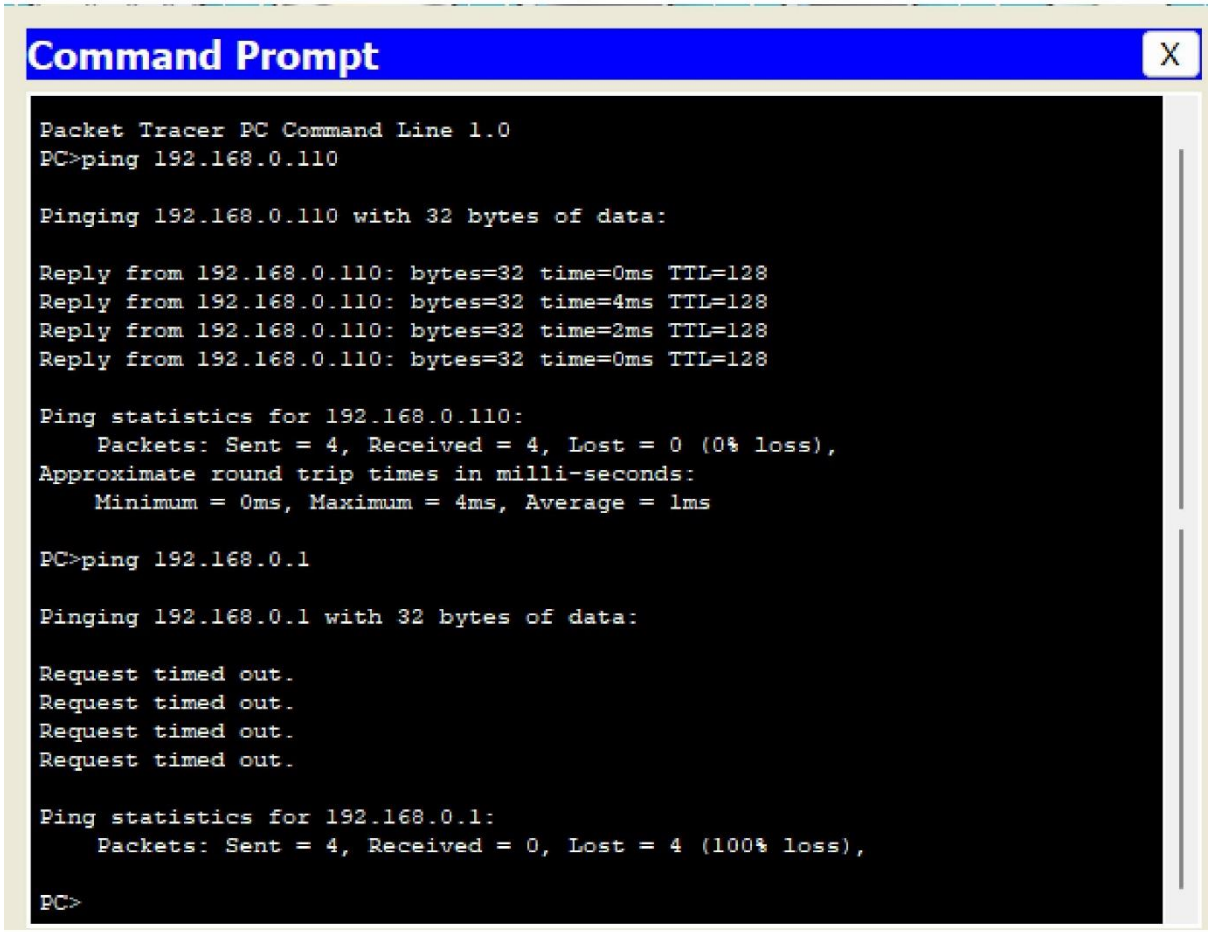

Cisco Packet Tracer Student - C:\Users\Admin\Desktop\1BM21CS148_FirstLab.pkt
File Edit Options View Tools Extensions Help
Logical
[Root]
New Cluster
Move Object
Set Tiled Background
Viewport
PC-PT
Client
192.168.0.110
Server-PT
Web Server
192.168.0.105
PDU List Window
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Successful Client Client ICMP 0.000 N 0 (edit) (delete)
Successful Web S... Web Server ICMP 0.000 N 1 (edit) (delete)
Time: 01:11:15
Power Cycle Devices
Fast Forward Time
Realtime
Connections
tomatically Choose Connection Ty
Scenario 1
New
Delete
Toggle PDU List Window


Command Prompt
X
Packet Tracer PC Command Line 1.0
PC>ping 192.168.0.110
Pinging 192.168.0.110 with 32 bytes of data:
Reply from 192.168.0.110: bytes=32 time=0ms TTL=128
Reply from 192.168.0.110: bytes=32 time=4ms TTL=128
Reply from 192.168.0.110: bytes=32 time=2ms TTL=128
Reply from 192.168.0.110: bytes=32 time=0ms TTL=128
Ping statistics for 192.168.0.110:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 4ms, Average = 1ms
PC>ping 192.168.0.1
Pinging 192.168.0.1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.0.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>