

Cisco packet tracer.

Packet tracer is a medium fidelity, Network capable, Simulation-based learning environment for networking novices to design, configure and troubleshoot computer networks at a CCNA-level of complexity.

protocols -

LAN: Ethernet (including CSMA/CD*), 802.11 a/b/g/n Wireless*, PPPoE

Switching: VLANs, 802.1q, trunking, VTP.

TCP/IP: HTTPS, DHCP, Telnet, IPv4*, IPv6*.

Routing: Static, Dynamic, VLAN Routing.

Others: ACLs (Standard, extended and named), CDP, NAT (Static, Dynamic, inside/outside and overload), NATv6, Netflow.

WAN: HDLC, SLARP, PPP* and Frame Relay*.

Security: IPsec, EIRE, ISAKMP, RADIUS etc.

QoS: Layer 2 QoS, Layer 3 DiffServ QoS, FIFO Hardware queues etc.

Logical Workspace -

Network topology creation.

Devices: Generic, real and Modular with customizable images.

Routers, Switches, hosts, hubs, bridges, Wireless accesspt, Wireless router, clouds, ASA and DSL/cable modems.

Device interconnection through a variety of networking media

Multisuser remote networks.

Physical Workspace

Network topology creation.

Hierarchy of device, Wiring closet, Building, city and intercity views.

Structure Cabling:

Ethernet cable length display and length limitation connectivity enforcement.

Images for devices

Loading and Scaling for user created graphics.

Wireless Association Management.

Realtime Mode

Realtime protocol Updates.

Medium Fidelity Cisco IOS CLI configuration of routers and switches.

Menu based configuration of DHCP, DNS, HTTP etc.

Simulation Mode

Packet Animation.

Global event list

OSI model, Detailed PDU and devices Table views.

User defined multiple packet Scenarios.

Local Authoring and Sharing

Extensive File Saving options.

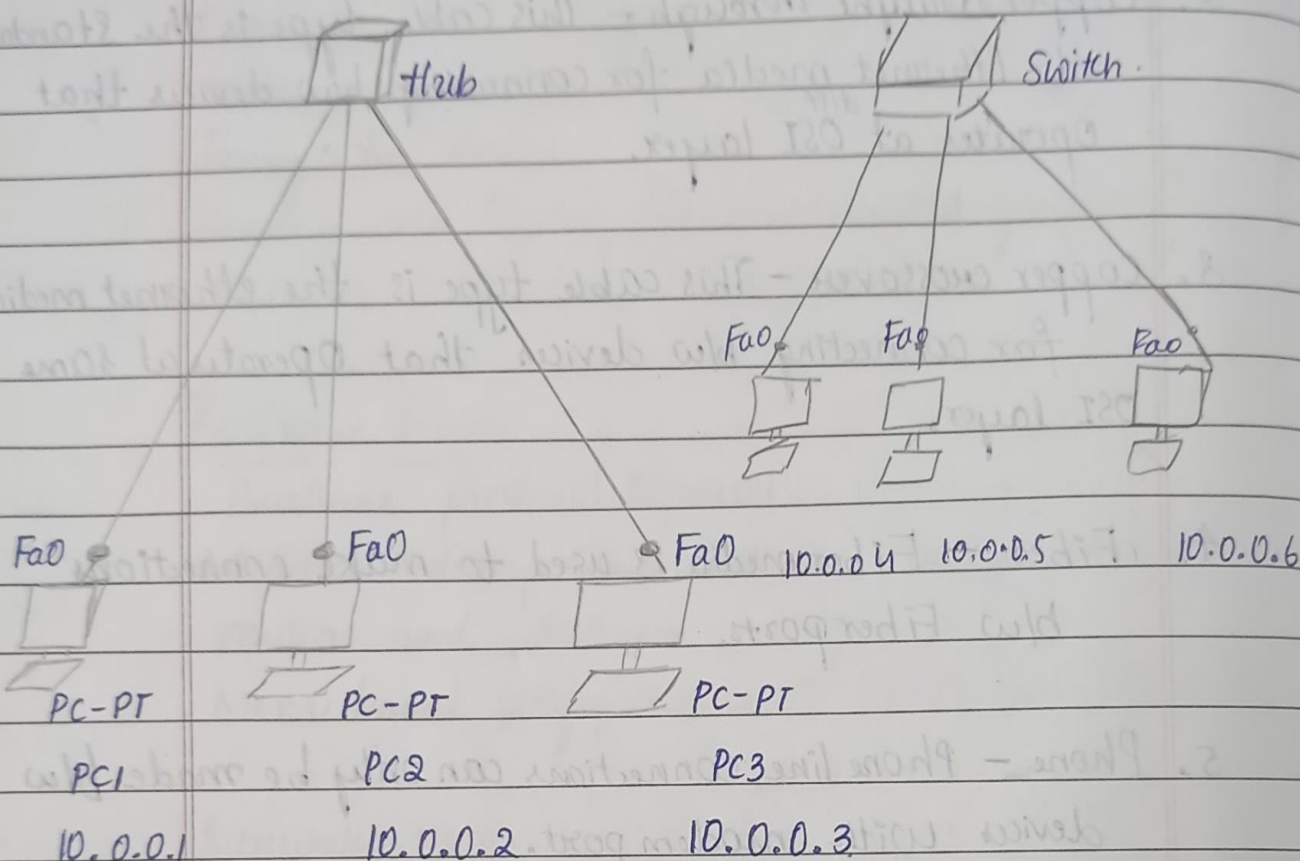
Multi level Activity Wizard for authority

Automatically Scored practice activities and formative assessment.

Connections

1. Console - Console connection can be made b/w PCs and routers or switches.
2. Copper Straight through - This cable type is the standard Ethernet media for connecting b/w devices that operate at ^{diff} OSI layer.
3. Copper crossover - This cable type is the Ethernet media for connecting b/w devices that operate at same OSI layer.
4. Fiber - Fiber media is used to make connections b/w Fiber ports.
5. Phone - Phone line connections can only be made b/w devices with modem port.
6. Coaxial - Coaxial media is used to make connections between coaxial ports such as a cable modem connected to a packet tracer cloud.
7. Serial DCE and DTE - Serial connections, often used for WAN links, must be connected between serial ports.
8. Octal - The 8-port asynchronous cable provides the high density connector on one end and 8 RJ-45 plug on the other.

1. Create a topology and simulate sending a Simple PDU from source to destination using Hub and Switch as connecting devices and demonstrate ping Message.

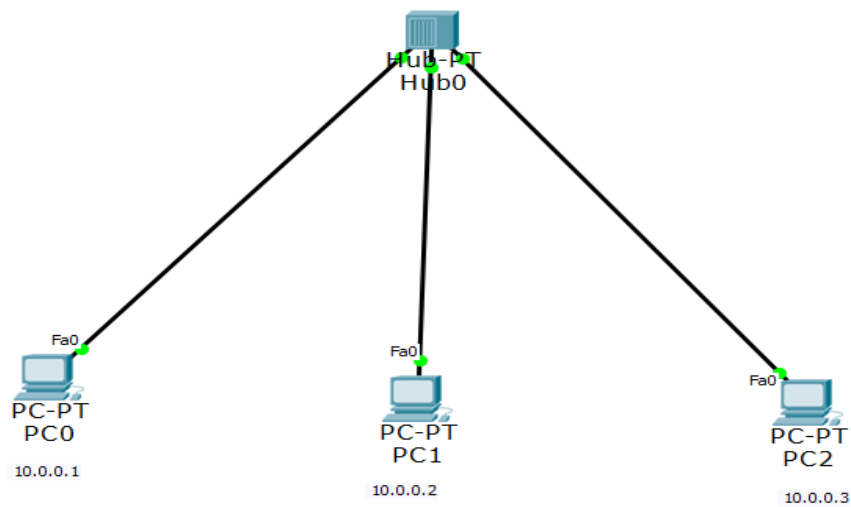


Hub *12 ports

Switch

- | | |
|---|--|
| 1. It is a broadcast device | 1. This point to point device. |
| 2. It Operates at physical layer | 2. It Operates a datalink layer. |
| 3. It is not an intelligent device | 3. It is an Intelligent device |
| 4. It Simply broadcast the Incoming packet. | 4. It uses the switching table to find correct destination |
| 5. It can be used as a repeater. | 5. It cannot be used as a rep |
| 6. Not Very costly | 6. Very costly. |
| 7. Not a Sophisticated device | 7. It is Sophisticated. |
| 8. Transmission mode is | 8. Transmission device is |

Connection between Hub and PCs:-



Output:-

```
Packet Tracer PC Command Line 1.0
PC>ping 10.0.0.1

Pinging 10.0.0.1 with 32 bytes of data:

Reply from 10.0.0.1: bytes=32 time=19ms TTL=128
Reply from 10.0.0.1: bytes=32 time=13ms TTL=128
Reply from 10.0.0.1: bytes=32 time=19ms TTL=128
Reply from 10.0.0.1: bytes=32 time=1ms TTL=128

Ping statistics for 10.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 19ms, Average = 13ms

PC>ping 10.0.0.2

Pinging 10.0.0.2 with 32 bytes of data:

Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128
Reply from 10.0.0.2: bytes=32 time=0ms TTL=128

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 = 0ms, Average = 0ms

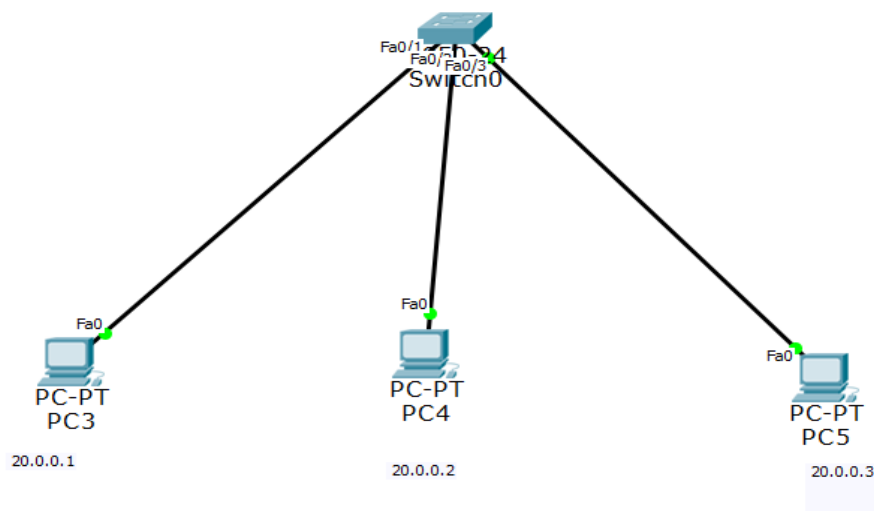
PC>ping 10.0.0.3

Pinging 10.0.0.3 with 32 bytes of data:

Reply from 10.0.0.3: bytes=32 time=1ms TTL=128
Reply from 10.0.0.3: bytes=32 time=1ms TTL=128
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128
Reply from 10.0.0.3: bytes=32 time=0ms TTL=128

Ping statistics for 10.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```


Connection between Hub and PCs:-



Output:-

```
Packet Tracer PC Command Line 1.0
PC>ping 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data:

Reply from 20.0.0.1: bytes=32 time=5ms TTL=128
Reply from 20.0.0.1: bytes=32 time=5ms TTL=128
Reply from 20.0.0.1: bytes=32 time=4ms TTL=128
Reply from 20.0.0.1: bytes=32 time=14ms TTL=128

Ping statistics for 20.0.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 14ms, Average = 7ms

PC>ping 20.0.0.2

Pinging 20.0.0.2 with 32 bytes of data:

Reply from 20.0.0.2: bytes=32 time=0ms TTL=128
Reply from 20.0.0.2: bytes=32 time=0ms TTL=128
Reply from 20.0.0.2: bytes=32 time=1ms TTL=128
Reply from 20.0.0.2: bytes=32 time=0ms TTL=128

Ping statistics for 20.0.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC> ping 20.0.0.3

Pinging 20.0.0.3 with 32 bytes of data:

Reply from 20.0.0.3: bytes=32 time=0ms TTL=128
Reply from 20.0.0.3: bytes=32 time=0ms TTL=128
Reply from 20.0.0.3: bytes=32 time=0ms TTL=128
Reply from 20.0.0.3: bytes=32 time=0ms TTL=128

Ping statistics for 20.0.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```