Internet dan Aplikasinya
TUGAS 2 : mengkoneksikan sebuah LAN dengan Packet Tracer

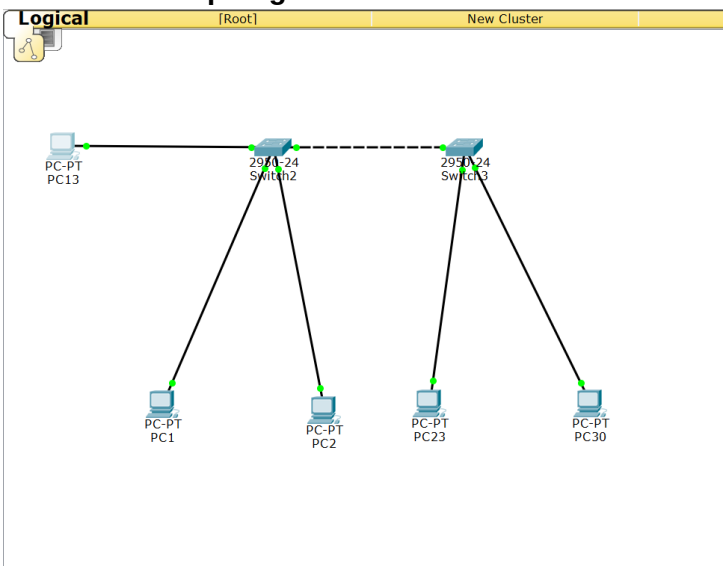
Oleh :

Nama : Vincentcia Istanti Murni H

NIM : 235314008

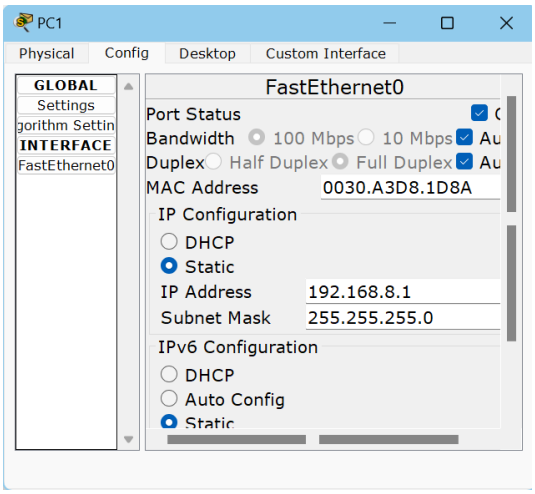
PROGRAM STUDI INFORMATIKA
FAKULTAS SAINS DAN TEKNOLOGI
UNIVERSITAS SANATA DHARMA
YOGYAKARTA
2024

A. Screenshot Topologi

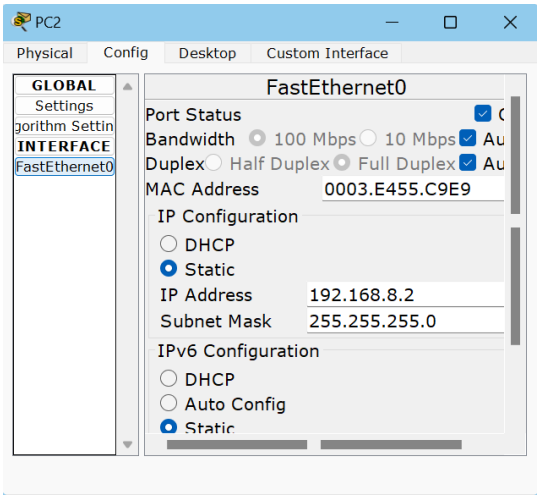


B. Screenshot IP setiap PC

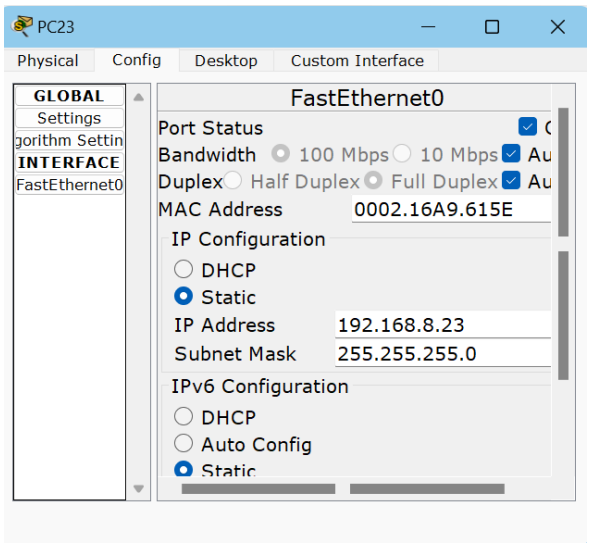
- **PC1**



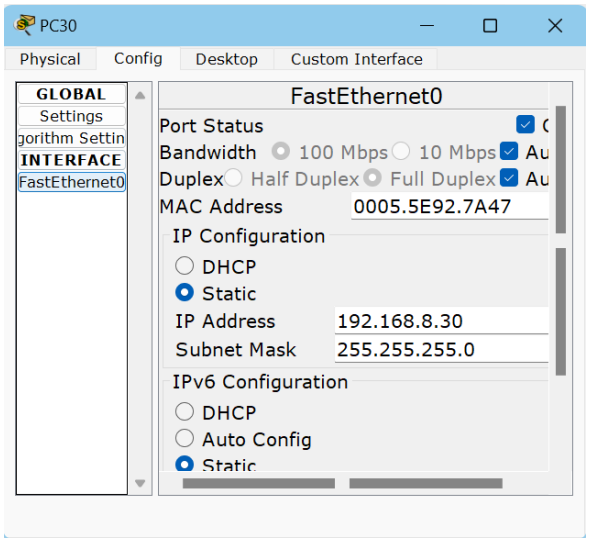
- **PC2**



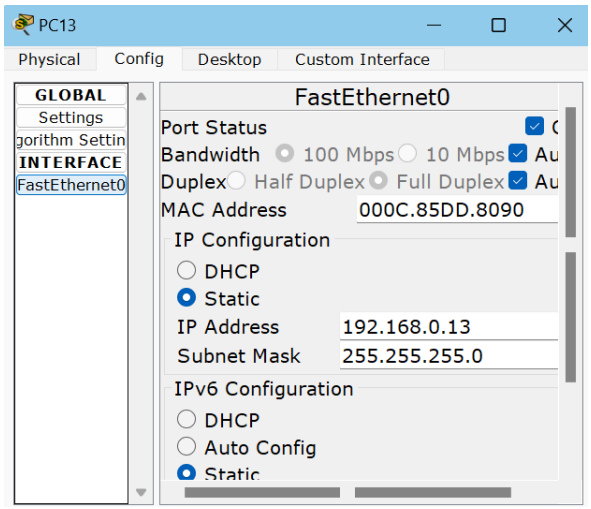
➢ **PC23**



➢ **PC30**

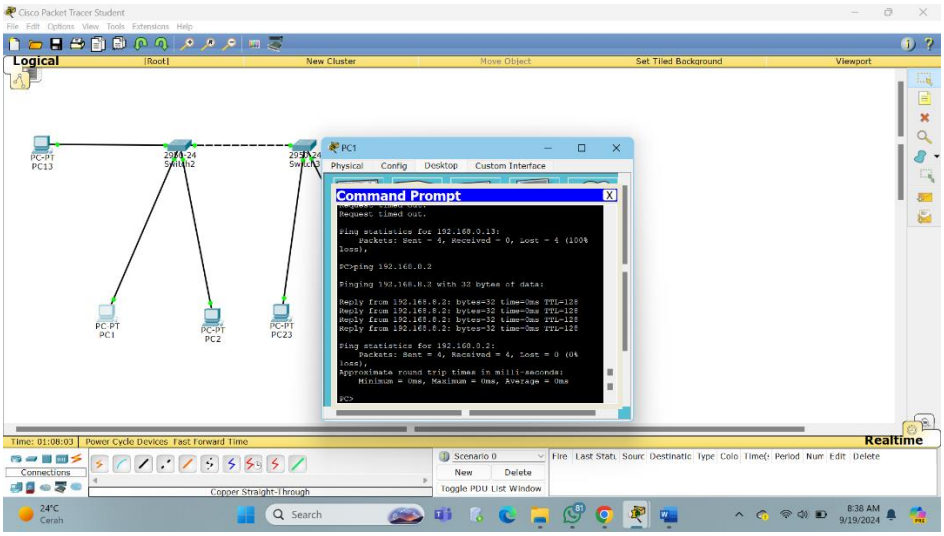


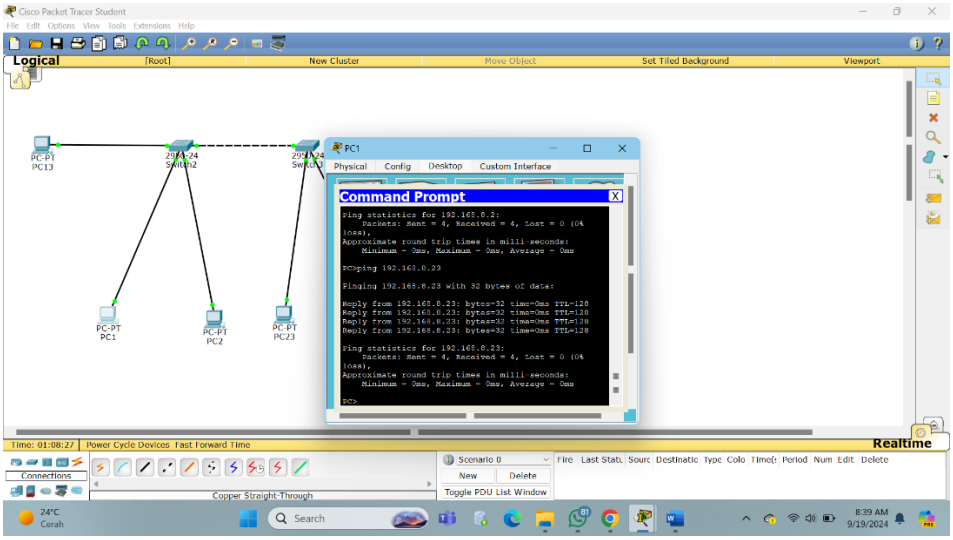
➢ **PC13**

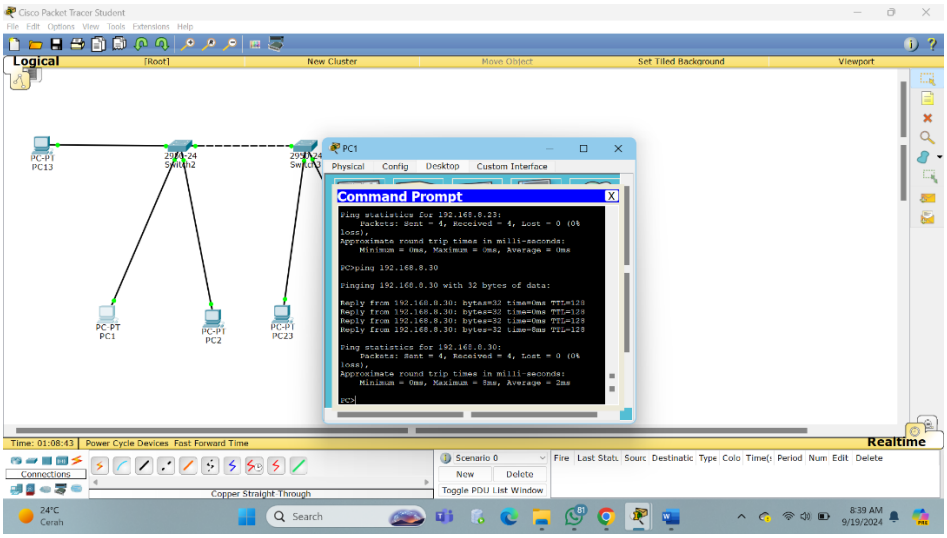


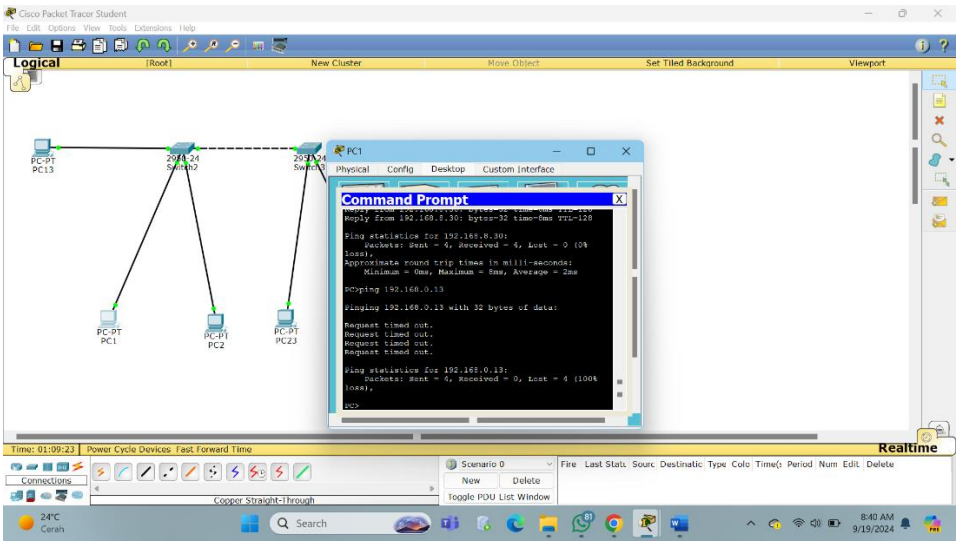
C. Screenshot Bukti Ping

- **PC1**

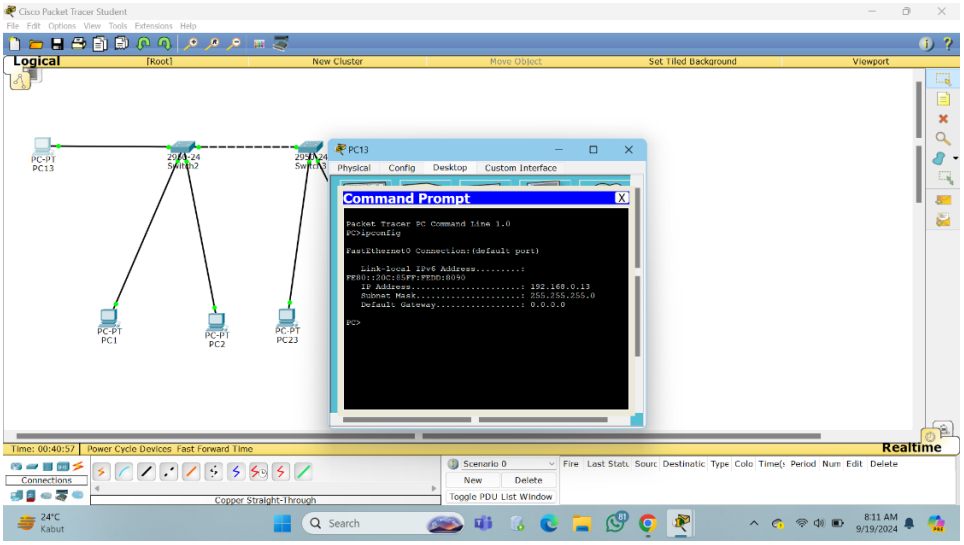


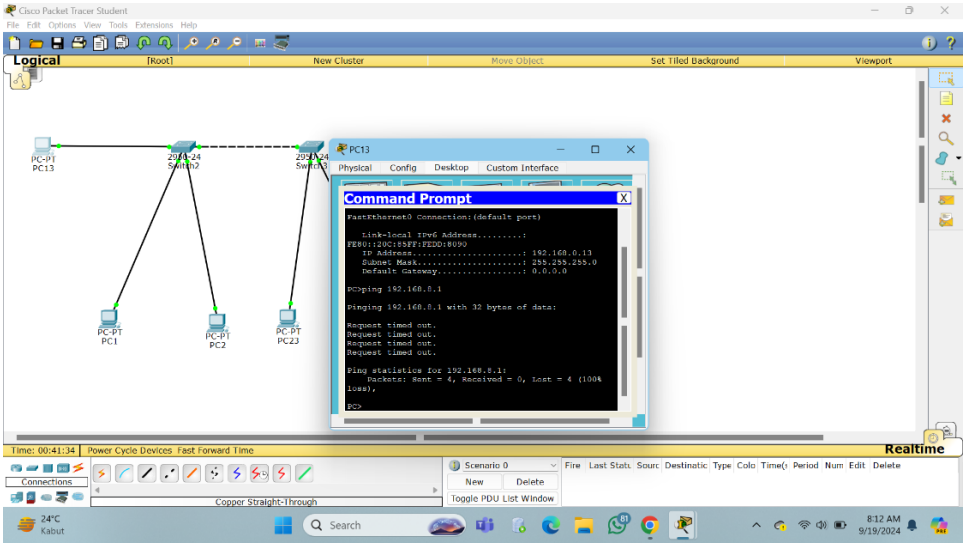


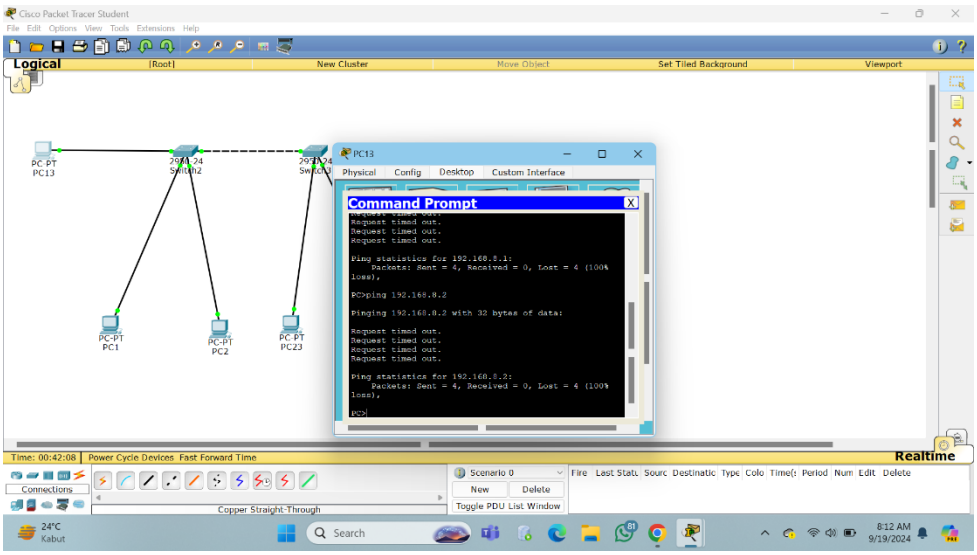


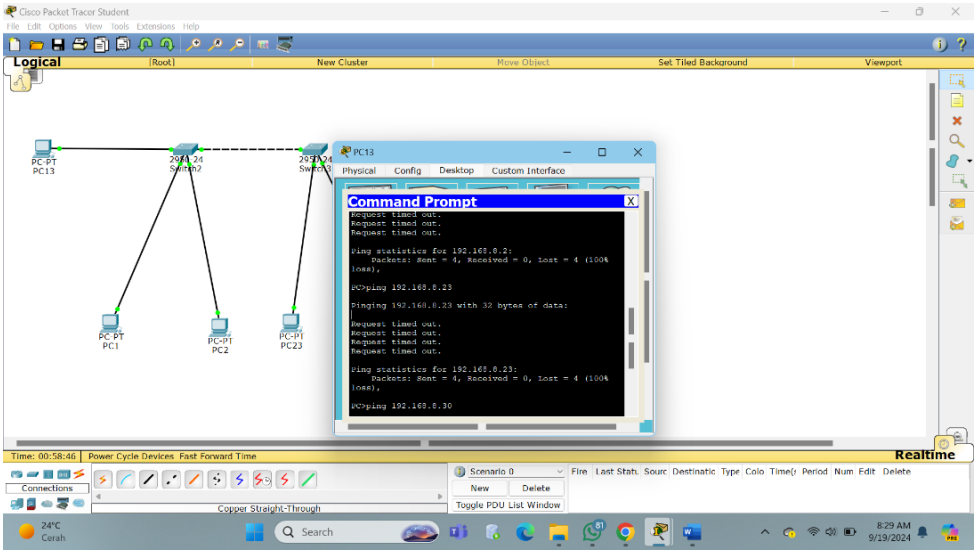

Cisco Packet Tracer Student
Logical
PC1
Physical Config Desktop Custom Interface
Command Prompt
Reply from 192.168.8.30: bytes=32 time=8ms TTL=128
Ping statistics for 192.168.8.30:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 8ms, Average = 2ms
PC>ping 192.168.0.13
Pinging 192.168.0.13 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.0.13:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>
Realtime

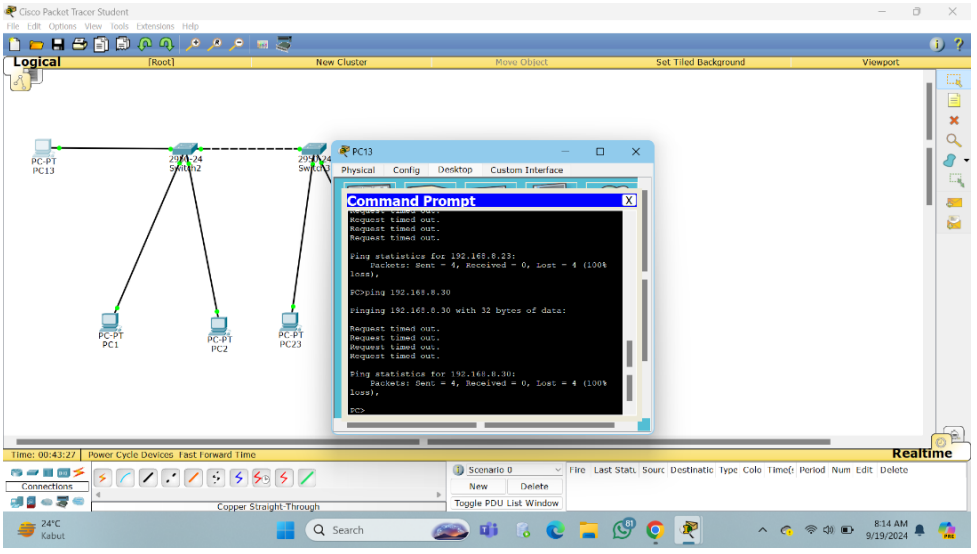
- **PC13**


Cisco Packet Tracer Student
Logical
PC13
Physical Config Desktop Custom Interface
Command Prompt
Packet Tracer PC Command Line 1.0
PC>ipconfig
FastEthernet0 Connection:(default port)
Link-local IPv6 Address.....:
FE80::20C:85FF:FED0:8090
IP Address.....: 192.168.0.13
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 0.0.0.0
PC>
Realtime


Cisco Packet Tracer Student
Logical
PC13
Physical Config Desktop Custom Interface
Command Prompt
FastEthernet0 Connection:(default port)
Link-local IPv6 Address.....:
FE80::20C:85FF:FED0:8090
IP Address.....: 192.168.0.13
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 0.0.0.0
PC>ping 192.168.8.1
Pinging 192.168.8.1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.8.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>
Realtime


Cisco Packet Tracer Student
Logical
PC13
Physical
Config
Desktop
Custom Interface
Command Prompt
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.8.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>ping 192.168.8.2
Pinging 192.168.8.2 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.8.2:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC-PT PC13
PC-PT PC1
PC-PT PC2
PC-PT PC23
Time: 00:42:08
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
8:12 AM
9/19/2024


Cisco Packet Tracer Student
Logical
PC13
Physical
Config
Desktop
Custom Interface
Command Prompt
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.8.2:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>ping 192.168.8.23
Pinging 192.168.8.23 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.8.23:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>ping 192.168.8.30
PC-PT PC13
PC-PT PC1
PC-PT PC2
PC-PT PC23
Time: 00:58:46
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
8:29 AM
9/19/2024


Cisco Packet Tracer Student
Logical
PC13
Physical
Config
Desktop
Custom Interface
Command Prompt
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.8.23:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC>ping 192.168.8.30
Pinging 192.168.8.30 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.8.30:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PC-PT PC13
PC-PT PC1
PC-PT PC2
PC-PT PC23
Time: 00:43:27
Power Cycle Devices
Fast Forward Time
Realtime
Connections
Copper Straight-Through
Scenario 0
New
Delete
Toggle PDU List Window
8:14 AM
9/19/2024

D. Analisa/Kesimpulan

Jenis Kabel Ethernet Antar Hub/Switch:

Untuk menghubungkan antar hub atau switch, digunakan kabel Ethernet tipe crossover. Kabel ini dirancang untuk menghubungkan dua perangkat yang sama jenisnya (seperti switch ke switch) tanpa memerlukan perangkat tambahan seperti hub atau switch tambahan.

IP Address dan Subnet Mask:

- PC1: 192.168.8.1, subnet mask 255.255.255.0 (/24)
- PC2: 192.168.8.2, subnet mask 255.255.255.0 (/24)
- PC23: 192.168.8.23, subnet mask 255.255.255.0 (/24)
- PC30: 192.168.8.30, subnet mask 255.255.255.0 (/24)

Pembuktian Koneksi melalui Ping:

1. Ping dari PC1 ke PC2:
    - Buka Command Prompt pada PC1.
    - Jalankan perintah: ping 192.168.8.2.
    - Jika konfigurasi IP dan subnet mask benar, ping akan berhasil menunjukkan koneksi yang terbentuk antara PC1 dan PC2.
2. Ping dari PC1 ke PC23:
    - Jalankan perintah: ping 192.168.8.23.
    - Jika Switch2 dan Switch3 terkoneksi dengan benar dan subnet yang digunakan sama, ping akan berhasil.
3. Ping dari PC1 ke PC30:
    - Jalankan perintah: ping 192.168.8.30.
    - Hasil positif menunjukkan bahwa seluruh perangkat dalam jaringan menggunakan subnet yang sama dan dapat berkomunikasi.

Analisis Kasus PC13:

- IP Address PC13: 192.168.0.13, subnet mask 255.255.255.0 (/24).
- PC13 menggunakan subnet yang berbeda dari PC lain (192.168.8.x). Akibatnya, PC13 tidak bisa terhubung dengan PC lain dalam jaringan ini, karena semua PC lain berada di subnet 192.168.8.0/24, sementara PC13 berada di subnet 192.168.0.0/24.
- Ketika PC13 mengirimkan paket ke jaringan, paket-paket ini tidak akan diterima oleh PC lain karena PC lain menganggap bahwa PC13 berada di jaringan yang berbeda.

Cara Agar PC13 Dapat Terkoneksi:

Agar **PC13** dapat terkoneksi dengan PC lainnya:

1. Ubah IP address PC13 menjadi satu subnet yang sama dengan PC lain, misalnya: **192.168.8.13** dengan subnet mask **255.255.255.0**.
2. Alternatifnya, jika tidak ingin mengubah IP address PC13, tambahkan **router** untuk menghubungkan dua subnet yang berbeda (192.168.0.0/24 dan 192.168.8.0/24). Router akan meneruskan paket-paket antar subnet tersebut.

Dengan demikian, PC13 bisa berkomunikasi dengan PC lain setelah berada dalam subnet yang sama atau melalui routing jika subnetnya berbeda.