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Experiment: 13

DESIGN A SIMPLE TOPOLOGY USING CISCO PACKET TRACER

AIM:

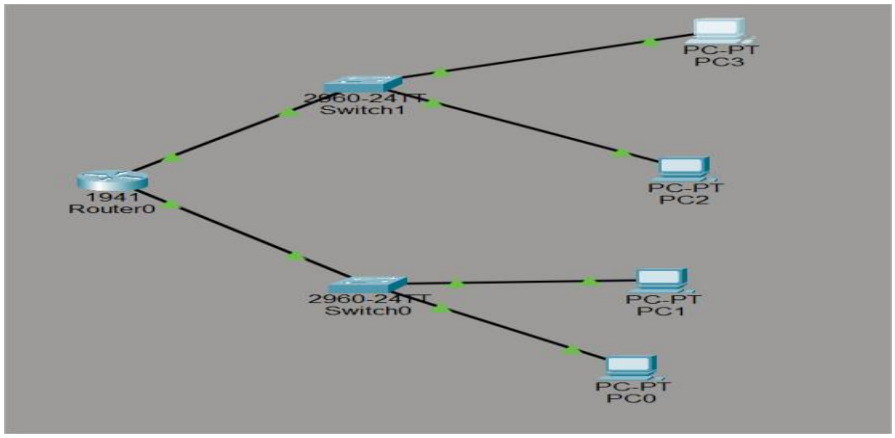
To design a simple network topology using Cisco Packet Tracer that includes one router, two switches, and multiple PCs, and to configure them for successful communication.

INTRODUCTION:

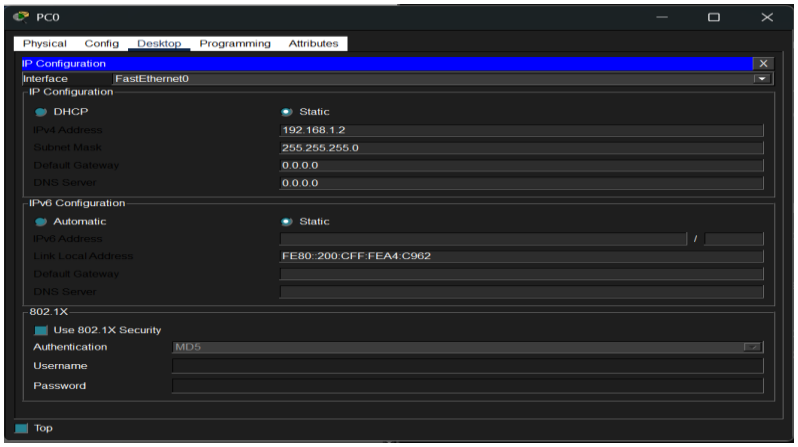
Cisco Packet Tracer is a powerful network simulation tool that allows users to design, configure, and test computer network topologies virtually. By using routers, switches, and PCs, students and professionals can build and practice real-world networking scenarios without physical hardware. In this experiment, a simple topology with one router, two switches, and multiple PCs is designed to demonstrate basic device setup and connectivity

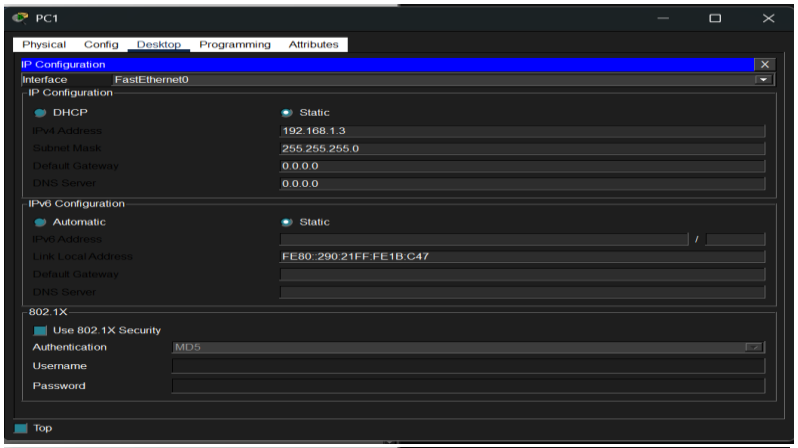
ALGORITHM:

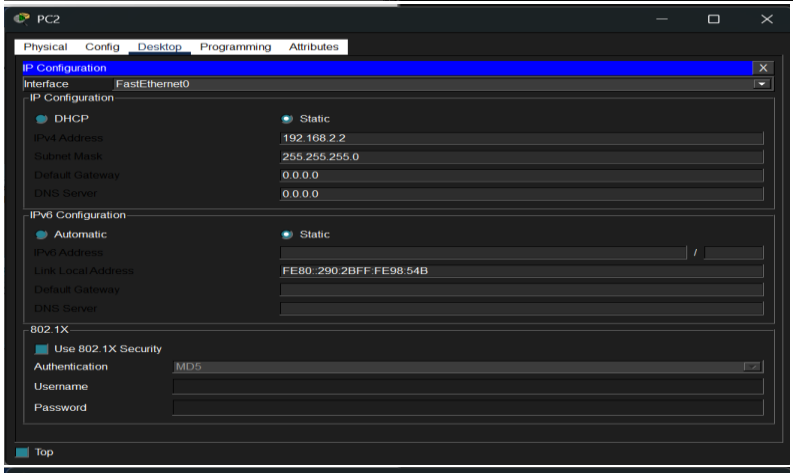
1. Open Cisco Packet Tracer and create a new project workspace.
2. Add Devices:
    - Drag one router, two switches, and multiple PCs onto the workspace.

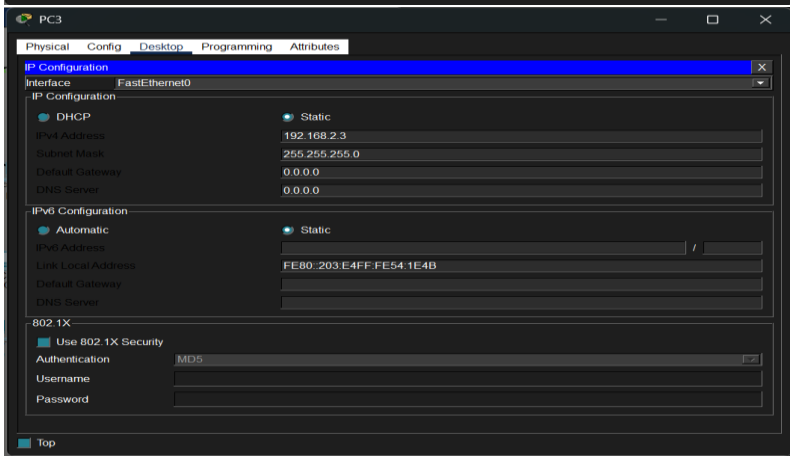


3. Connect Devices:
    - Use straight-through cables to connect each PC to a switch.
    - Connect each switch to a separate interface on the router.
4. Assign IP Addresses:
    - Set appropriate IP addresses for each PC in their respective subnets.


PC0
Physical Config Desktop Programming Attributes
IP Configuration
Interface FastEthernet0
IP Configuration
DHCP Static
IPv4 Address 192.168.1.2
Subnet Mask 255.255.255.0
Default Gateway 0.0.0.0
DNS Server 0.0.0.0
IPv6 Configuration
Automatic Static
IPv6 Address /
Link Local Address FE80::200:CFF:FEA4:C962
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication MD5
Username
Password
Top

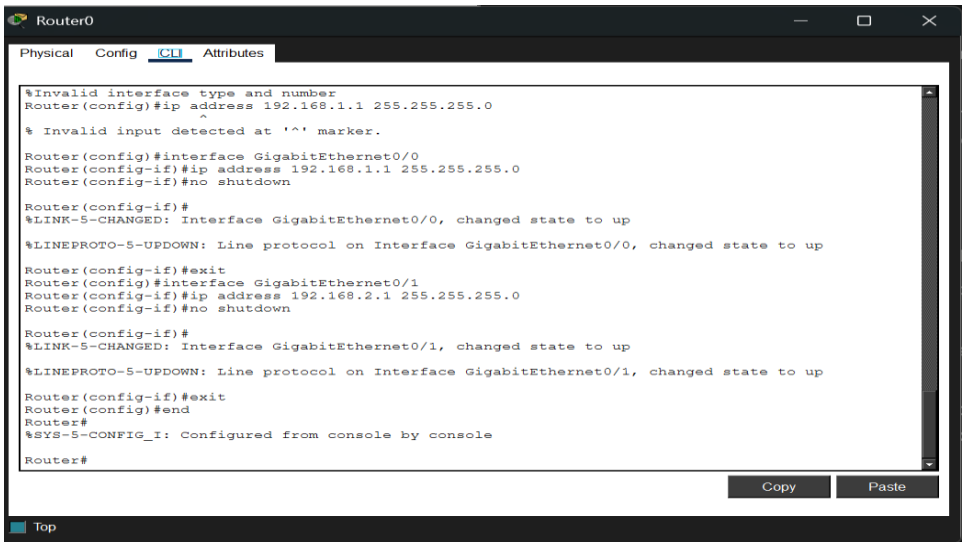

PC1
Physical Config Desktop Programming Attributes
IP Configuration
Interface FastEthernet0
IP Configuration
DHCP Static
IPv4 Address 192.168.1.3
Subnet Mask 255.255.255.0
Default Gateway 0.0.0.0
DNS Server 0.0.0.0
IPv6 Configuration
Automatic Static
IPv6 Address /
Link Local Address FE80::290:21FF:FE1B:C47
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication MD5
Username
Password
Top


PC2
Physical Config Desktop Programming Attributes
IP Configuration
Interface FastEthernet0
IP Configuration
DHCP Static
IPv4 Address 192.168.2.2
Subnet Mask 255.255.255.0
Default Gateway 0.0.0.0
DNS Server 0.0.0.0
IPv6 Configuration
Automatic Static
IPv6 Address /
Link Local Address FE80::290:2BFF:FE98:54B
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication MD5
Username
Password
Top


PC3
Physical Config Desktop Programming Attributes
IP Configuration
Interface FastEthernet0
IP Configuration
DHCP Static
IPv4 Address 192.168.2.3
Subnet Mask 255.255.255.0
Default Gateway 0.0.0.0
DNS Server 0.0.0.0
IPv6 Configuration
Automatic Static
IPv6 Address /
Link Local Address FE80::203:E4FF:FE54:1E4B
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication MD5
Username
Password
Top

5. Configure Router Interfaces:

    - Access the router CLI and assign IP addresses to each connected interface.

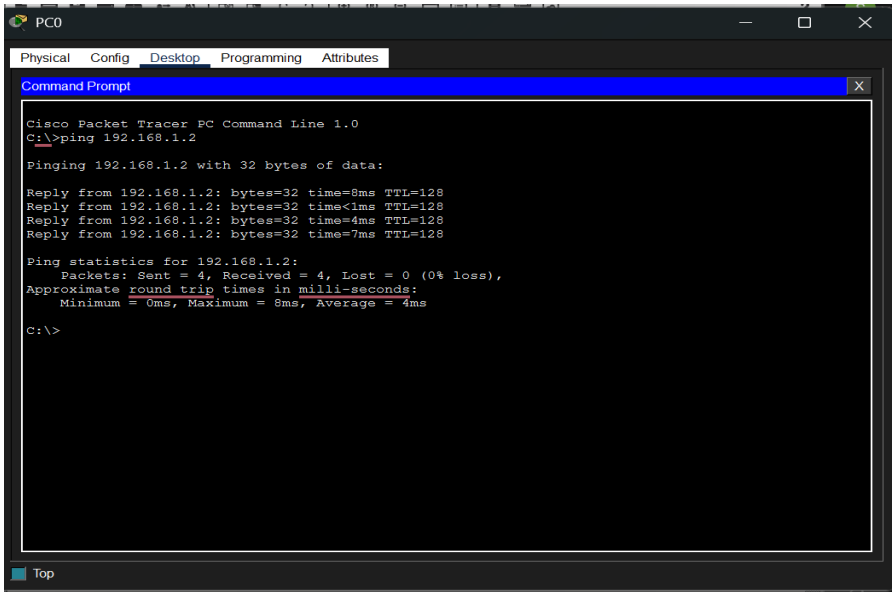


6. Set Default Gateway:

    - Configure each PC's default gateway to match the router interface IP on its subnet.

7. Verify Connectivity:

    - Use the 'ping' command on PCs to check network communication across the topology.



RESULT:

The designed topology, consisting of one router, two switches, and multiple PCs, was successfully configured. All devices were able to communicate with each other across the network, demonstrating correct network setup and connectivity verification using Cisco Packet Tracer.