



SIMPLE NETWORKING PROJECT

CISCO Project 1



CCNA PROJECT WITH SUBASH SUBEDI

SUBASH SUBEDI

Project #1 Case Study and Requirements

Design a network in Cisco Packet Tracer to connects ACCOUNTS and DELIVERY departments through the following:

Each department should contain at least two PCs, one Laptop & Printer .

Appropriate number of switches and routers should be used in the network.

Using the given network 192.168.40.0, all interfaces should be configured with correct IP addresses, subnet mask and gateways.

All devices in the network should be connected using appropriate cables.

Test communication between devices in both ACCOUNTS and DELIVERY departments.

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Technologies Implemented

1. Creating a Simple Network using a Router and Access Layer Switch.

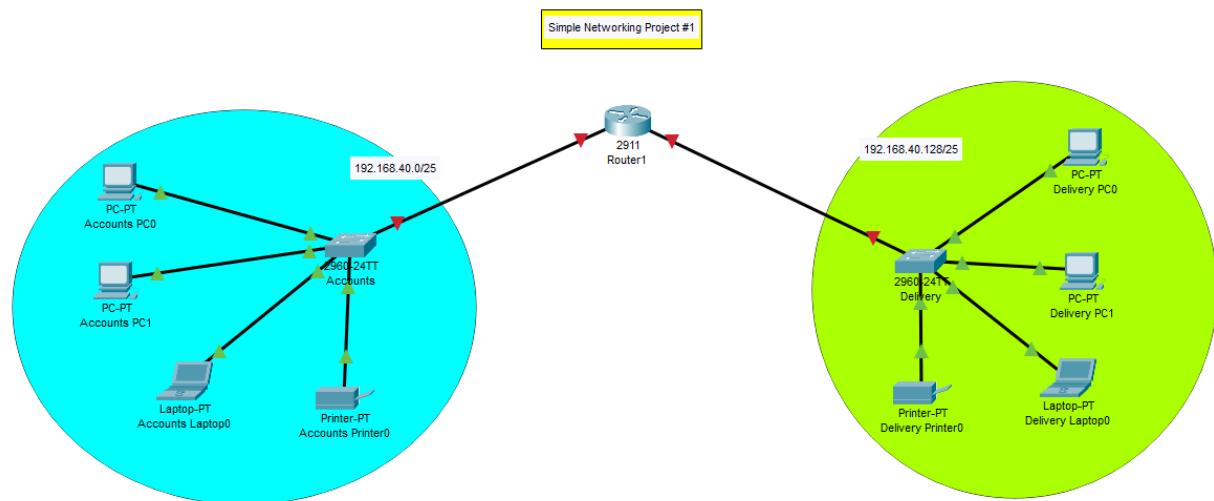


Figure 1

2. Connecting Networking devices with Correct cabling.

1. Copper straight cable

3. Subnetting and IP Addressing.

Network Address: - 192.168.40.0

!st Subnet

Subnet Mask - 255.255.255.128

Network ID - 192.168.40.0

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Range of host – 192.168.40.1-126

Broadcast ID – 192.168.40.127

2nd Subnet

Subnet Mask - 255.255.255.128

Network ID - 192.168.40.128

Range of host – 192.168.40.129-254

Broadcast ID – 192.168.40.255

4. Assigning IP Addresses to Router's interfaces.

Router

CMD of router

```
Router>enable
Router#clock set 22:03:30 27 Jan 2025
Router#configure terminal

Router(config)#hostname TEST_NETWORK
TEST_NETWORK(config)#
TEST_NETWORK(config)#interface gigabitEthernet 0/1
TEST_NETWORK(config-if)#ip address 192.168.40.1 255.255.255.128
TEST_NETWORK(config-if)#no shutdown
TEST_NETWORK(config-if)#exit

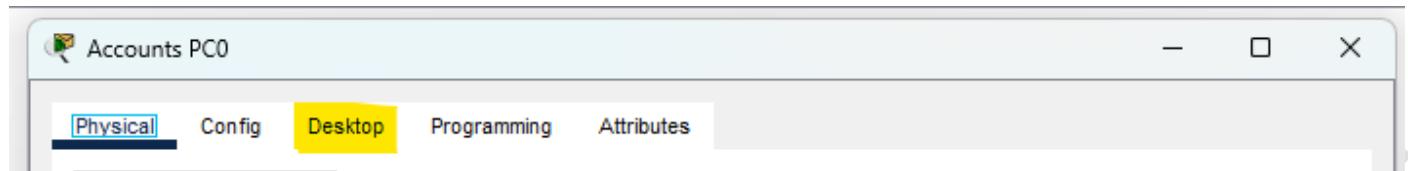
TEST_NETWORK(config)#interface gigabitEthernet 0/2
TEST_NETWORK(config-if)#ip address 192.168.40.129 255.255.255.128
TEST_NETWORK(config-if)#no shutdown

TEST_NETWORK(config-if)#exit
TEST_NETWORK(config)#exit
TEST_NETWORK#wr
```

5. Static IP Address allocation to Host Devices.

Step 1: Double-click/single-click on PC or laptop

Step 2: In the upper session, there will be a desktop option. Click on that desktop.



Step 3: Click on IP configuration and assign the IP accordingly.

Table 1

A screenshot of a "IP Configuration" dialog box. At the top, it says "Interface: GigabitEthernet0". Below that is a section titled "IP Configuration" with a radio button for "DHCP" and one for "Static" (which is selected). Under "IPv4 Configuration", there are four fields: "IP4 Address" (192.168.40.2), "Subnet Mask" (255.255.255.128), "Default Gateway" (192.168.40.1), and "DNS Server" (0.0.0.0). These last three fields are also highlighted with red boxes. At the bottom of the dialog box is a "IPv6 Configuration" section which is currently empty.

6. Test and Verifying Network Communication.

Table 2: Result

```
C:\>ping 192.168.40.2

Pinging 192.168.40.2 with 32 bytes of data:

Reply from 192.168.40.2: bytes=32 time<1ms TTL=128
Reply from 192.168.40.2: bytes=32 time=1ms TTL=128
Reply from 192.168.40.2: bytes=32 time<1ms TTL=128
Reply from 192.168.40.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.40.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ping 192.168.40.130

Pinging 192.168.40.130 with 32 bytes of data:

Request timed out.
Reply from 192.168.40.130: bytes=32 time<1ms TTL=127
Reply from 192.168.40.130: bytes=32 time<1ms TTL=127
Reply from 192.168.40.130: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.40.130:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```