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Simple Networking project using Cisco Packet Tracer

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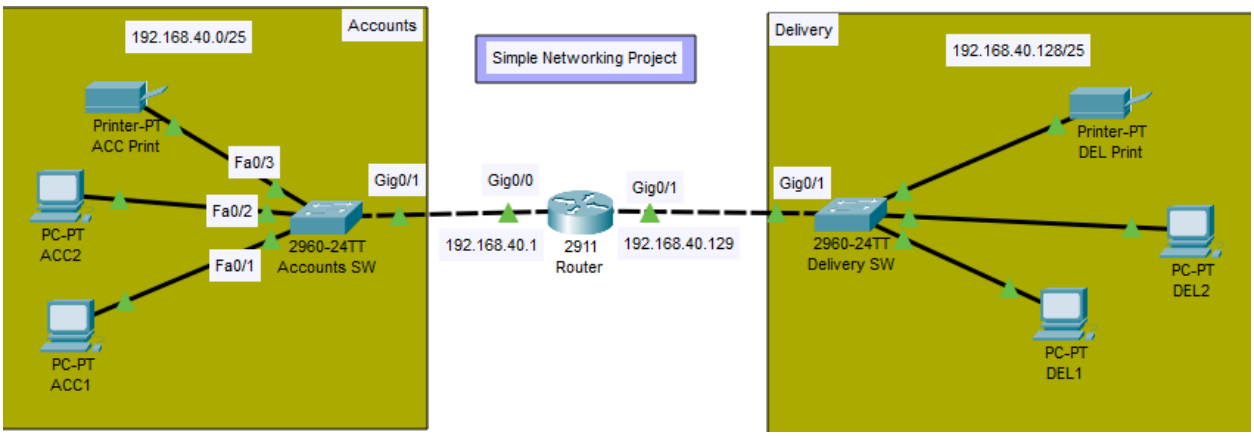
Tags	



Task: To design a network in CISCO Packet Tracer to connect Accounts and Delivery departments

⇒ Each department contains at 2 PCs and a Printer. We have assigned

1 Switch ⇒ Accounts and 1 Switch ⇒ Delivery departments respectively.

⇒ The Base IP Address is 192.168.40.0, all devices should be configured as per the IP and appropriate Subnets.

→ Network Address: **192.168.40.0**

→ Number of Subnets = 2

Thus, 2^n → 2^1 = 2 Subnets

N[Network Bits]=1 Bit

So, subnet Mask ⇒ **255.255.255.128**

Based on the N [Network Bits], the possible available **H [Host Bits] = 7 Bits**

Assignable IP Addresses = 2^h - 2 ⇒ 2^7-2 = 128 - 2 = 126 Host IPs

Thus, the Subnets would look like:

1st Subnet

> 💡 Subnet Mask = 255.255.255.128
>
> Network IP = 192.168.40.0
>
> Host IP = 192.168.40.1 to 192.168.40.126
>
> Broadcast IP = 192.168.40.127

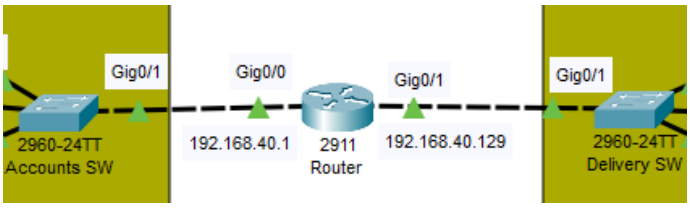
2nd Subnet

> 💡 Subnet Mask = 255.255.255.128
>
> Network IP = 192.168.40.128
>
> Host IP = 192.168.40.129 to 192.168.40.254
>
> Broadcast IP = 192.168.40.255

⇒ Cables used for the connection is decided based on the concept of DTE [Data Terminating Equipment] and DCE [Data Communication Equipment].

- DTE - DCE ⇒ *Switch ↔ Device* are connected using **copper straight through cable**
- DTE - DTE ⇒ *Switch ↔ Router* are connected using **copper crossover cable**

⇒ Router Configuration for communication and connectivity between both departments.



Router and Switch connection seen in the image above shows the following configuration:

→ Router [Gig0/0] ↔ Accounts SW [Gig0/1]

→ Router [Gig0/1] ↔ Delivery SW [Gig0/1]

The IP configuration details for all the Devices on the Network is as follows:

Device	IP Address	Subnet Mask	Default Gateway
ACC1	192.168.40.2	255.255.255.128	192.168.40.2
ACC2	192.168.40.3	255.255.255.128	192.168.40.2
ACC Print	192.168.40.4	255.255.255.128	192.168.40.2
DEL1	192.168.40.130	255.255.255.128	192.168.40.129
DEL2	192.168.40.131	255.255.255.128	192.168.40.129
DEL Print	192.168.40.132	255.255.255.128	192.168.40.129

⇒ Testing the connectivity between Accounts and Delivery departments.

Fire	Last Status	Source	Destination	Type	Color	Time(sec)
	Successful	ACC1	DEL Print	ICMP		0.000
	Successful	ACC Print	DEL1	ICMP		0.000
	Successful	ACC2	DEL2	ICMP		0.000