

Exp. No. 10

9.10.25

Internet working with Routers & Wireless Networks.

Aim:

- 1) Design & configure a simple internetwork using a router and 2 PCs (wired)
- 2) Design & configure a internetwork using a wireless router, DHCP server & internet cloud.

Part A: Wired Internetwork with Router.

Procedure

1. Router Configuration (Router 1)

Router > enable

Router # config t

Router(config) # interface FastEthernet 0/0

Router (config-if) # ip address 192.168.10.1
255.255.255.0

Router (config-if) # no shutdown

Router (config-if) # interface FastEthernet 0/1

Router (config-if) # ip address 192.168.20.1
255.255.255.0

Router (config-if) # shutdown.

2. PC configuration

PC0 : IP : 192.168.10.2, Subnet : 255.255.255.0

Gateway : 192.168.10.1

PC1 : IP : 192.168.20.2, Subnet : 255.255.255.0,

Gateway : 192.168.20.1

3. Connect PCs to Router using Copper straight through cables.

PC0 → Fast Ethernet 0/0 of Router 1

PC1 → Fast Ethernet 0/1 of Router 1

1. Configure PC with IP 192.168.1.100
2. Configure PC with IP 192.168.1.101
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155. Configure PC with IP 192.168.1.254
156. Configure PC with IP 192.168.1.255

Router: E1000 with wireless WPC5000 module.
Connect to 192.168.1.1 Home Network.

4. Configure PC 1
Enable DHCP on network card automatically.

5. Configure Client Card Server
DHCP Pool: 192.168.1.100-192.168.1.254

DNS: 192.168.1.1
Default Gateway: 192.168.1.1

6. Verify Connectivity
Run a ping test on 192.168.1.1 from PC 1.

Result: Ping successful.

7. Key: 192.168.1.100-192.168.1.254

Result: $9 \frac{14}{10} \times 125$
PC0 can successfully ping PC1 using a simple PDU
Network connectivity verified.

Part B: Wireless Network with DHCP & Internet.

Procedure:

1. Build Topology: PC, wireless Router, Cable Modem, Internet Cloud, Cisco.com server.
2. Configure Wireless Router
LAN IP: 192.168.0.1, DHCP enabled, DNS: 208.67.220.220
SSID: Home Network.
3. Configure Laptop
Replace Ethernet with wireless WPC300N module.
Connect to SSID Home Network.
4. Configure PC
Enable DHCP to obtain IP automatically.
5. Configure Cisco.com server
DHCP Pool: 208.67.220.1 - 208.67.220.50
DNS: 208.67.220.220
IP: 208.67.220.220, Subnet: 255.255.255.6
6. Verify Connectivity
Refresh IP on PC (IPconfig / release → ipconfig / renew)
Ping cisco.com → 4 replies received.

Student observation Questions.

- 1) Key feature of configuring wireless Router & DHCP server.
Provides wireless connectivity assigns IPs dynamically and manage network settings.
- 2) Significance of DHCP server in internetworking
Automatically assigns IP addresses to devices, reducing manual configuration errors.

3 Design a inter network using switch, router & ethernet cables.

Connect PCs to a switch, Switch to router configure IPs and gateways for each device.

Result:

* PC successfully receives IP from DHCP and accessess Cisco.com via wireless network.

* Connectivity verified.

Q. 14/11/25