Exp. No. 10
9.10.25

Internet working with Routers & Wireless Networks.

Aim:

1) Design & configure a simple internetwork using a router and 2PCS (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) # shut down.

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

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Result:

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: 208.67.22022

SSID: Home Network.

3. Configure laptop

Replace Ethernet with wireless WPC300N module.

Connect to SSID HomeNetwork.

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; 255.255.255.0

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.

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Result:

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

* Connectivity verified.