

Lab 6

Configure Routers Using Dynamic Routing

What is Routing?

Routing is the process of selecting best paths in a network or *routing* is the process of moving *packets* across a network from one host to another. It is usually performed by dedicated devices called *routers*. Each intermediary router performs routing by passing along the message to the next router. Part of this process involves analyzing self-configuring *routing tables* to determine the *best* (i.e., optimal) path.

There are two basic methods of building a routing table:

- Static Routing
- Dynamic Routing

A *Dynamic Routing Table* is created, maintained, and updated by a routing protocol running on the router. Examples of routing protocols include RIP (Routing Information Protocol), EIGRP (Enhanced Interior Gateway Routing Protocol), and OSPF (Open Shortest Path First).

Routers do share dynamic routing information with each other, which increases CPU, RAM, and bandwidth usage. However, routing protocols are capable of dynamically choosing a different (or better) path when there is a change to the routing infrastructure.

Aims of This Lab

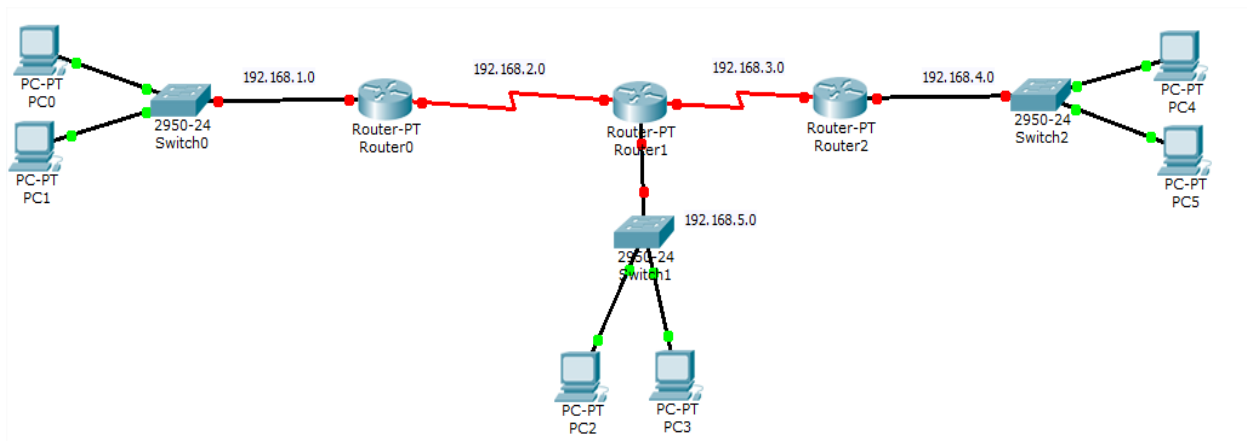
- The aim of this Lab is to show how to design WAN using Routers.

- The aim of this Lab is to show how to configure routers using EIGRP Protocol.
- The aim of this Lab is to show how to configure routers to be DHCP with addition to its function.
- After this Lab, the Student can know how to configure routers dynamically.

Experiment Procedure

1. Design Network

- Design three LANs; each one consists of two Computers and switch.
- Select three routers type Router PT (generic).
- Connect each router to one LAN.
- Connect all routers to each other via serial bus as shown in figure below.
- Put note about the address you want to use for each LAN.



A. Configure router interface and IP

1. Enable
2. Config t

3. Interface <type>< number>
4. Ip address <address>< mask>
5. Clock rate 64000
6. No sh

B. Configure Dynamic Routing

1. Enable
2. Config t
3. Router eigrp <**any number** must be used for all router in the networks>
4. Network <network IP>
5. Repeat step 4 if there are another networks
6. exit

Questions (put the answer in your report)

1. What is the main function of router?
2. What is the routing table?
3. What is the meaning of Dynamic routing?
4. How to design WAN?