Assignment B3

- Title: To study about dynamic routing protocols.
- Problem statement: Configure RIP | OSPF | BGP using packet tracer.
- Learning objectives: To learn about dynamic routing protocol
- Learning outcome: To implement RIP | OSPF | BGP.
- S/w / Hw requirements: cisco Packet Tracer, Fedora OS.
- Theory :-

- Dynamic Routing :

Dynamic routing is a networking technique that provid optimal data routing. Unlike static routing, dynamic routing enables routers to select paths according to real-time logical network layout changes.

Dynamic routing protocols allow routers to share information about the n/w to allow them to select best path to reach a destination.

→ RIP protocol :

Routing Information protocol is an intra-domain routing protocol used with an autonomous system. Intra-domain means routing the packets in a defined domain.

1.) RIP is based on the distance vector-based strategy; so we can consider graph where nodes are routers and links are networks.

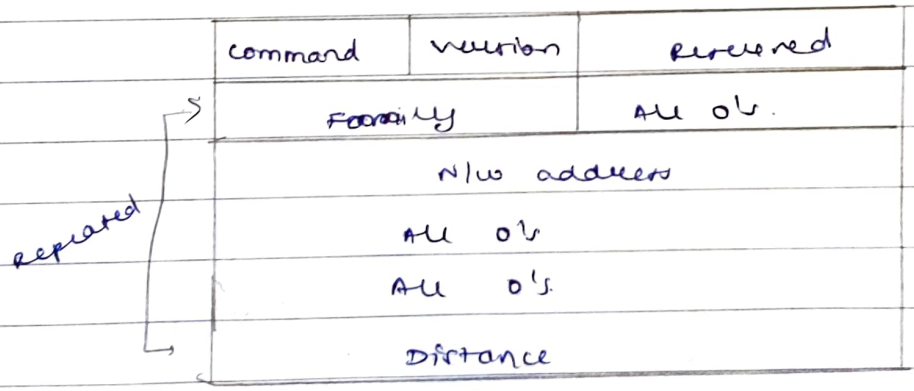
2.) In a routing table, first column is destination

3.) The cost metric is number of hops to reach the destination

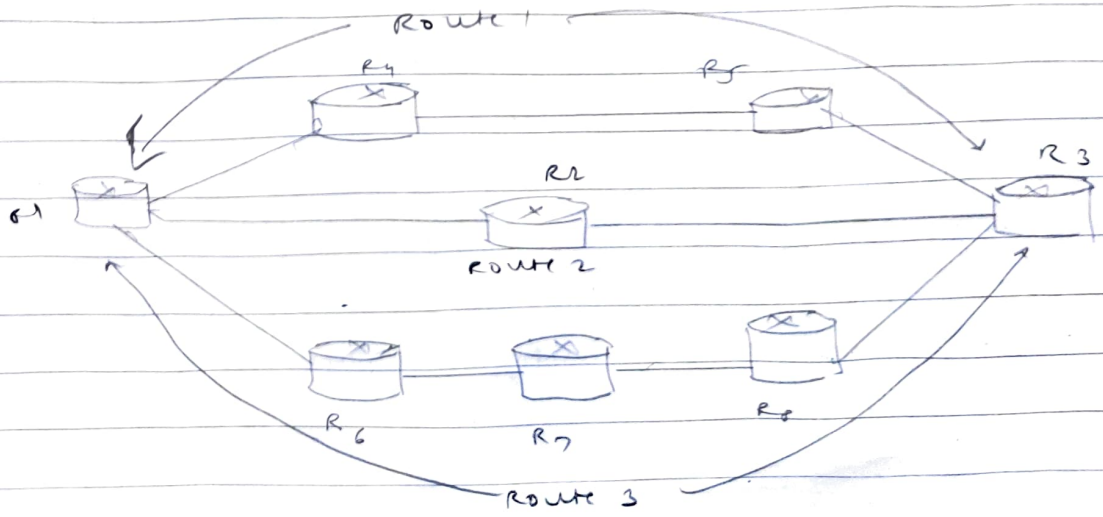
4) In RIP, infinity is 16 which means RIP is useful for small (max number of hop is 15.

- When the router sends the packet to the new segment, then it is counted as 1 hop.

- RIP message format:



- working



Suppose R1 wants to send data to R3, if n/w is configured with RIP, it will choose route 2

- Advantages of RIP:

1) It is easy to configure
2) It has less complexity
3) The CPU utilization is less

Disadvantages of RIP :-

1) In RIP, route is chosen based on hop count metric, so if another route of better bandwidth is available, then that route may not be chosen.
2) It broadcasts routing updates to entire n/w that creates a lot of traffic
3) It faces slow convergence

Conclusion:

We successfully configured RIP in cisco packet tracer.