Assignment - 11

Title : Packet Tracer

Problem Statement:
Configure RIP / OSPF / BGP using packet tracer.

Objectives:
- Installing packet tracer software
- Configuring RIP / OSPF / BGP using packet tracer.

Outcomes:
Students will be able to configure RIP / OSPF / BGP using packet tracer.

Theory:
Packet Tracer:
It is a cross platform visual simulation tool designed by Cisco Systems that allows users to create network topologies and imitate modern computer networks. The software allows users to simulate the configuration of Cisco routers and switches using simulated command line interface.

In addition to simulating certain aspects of computer networks, Packet

Tracer can be used for collaboration. As of Packet Tracer 5.0, Packet Tracer supports multi user system that enables multiple users to connect multiple topologies together over a computer network.

RIP (Routing Information Protocol):
It is a dynamic routing protocol which uses hop count as routing metric to find the best path between the source and destination network. It is a distance vector routing protocol which has AD value 120 & works on the application layer of OSI model. RIP uses port no. 520.

Features of RIP:

1. Updates of the network are exchanged periodically.
2. Updates (routing information) are always broadcasted.
3. Full routing tables are sent in updates.
4. Routers always trust on routing information recieved from neighbour routers.

Open Shortest Path First (OSPF):

It is a link state routing protocol that is used to find the best path between the source and destination router using its own Shortest Path First. OSPF is developed by Internet Engineering Task Force (IETF) as one of the IGP ie. protocol which aims at moving the packet within a large autonomous system. It is a network layer protocol which works on protocol number 89 and uses AD value 110.

Border Gateway Protocol (BGP):

It is used to exchange routing information for internet and is the protocol used between ISP and ASes. This protocol can connect together any internetwork of autonomous system using an arbitrary topology. The only requirement is that each AS have at least one router that is able to run BGP and that router connects to at least on other AS's BGP router. BGP's main function is to exchange network reachability information with other BGP systems.

Conclusion:
Thus, we have successfully installed Packet Tracer and configured RIP/ OSPF/BGP.