Assignment No:4

Aim:

Using a Network Simulator (e.g. packet tracer) Configure

EIGRP – Explore Neighbor-ship Requirements and Conditions, its K Values Metrics Assignment

and Calculation,

RIPv2 and EIGRP on same network.

WLAN with static IP addressing and DHCP with MAC security and filters

Theory:

EIGRP :

enhanced Interior Gateway Routing Protocol (EIGRP) is an advanced distance-vector routing protocol that is used on a computer network for automating routing decisions and configuration. The protocol was designed by Cisco Systems as a proprietary protocol, available only on Cisco routers. Functionality of EIGRP was converted to an open standard in 2013 and was published with informational status as RFC 7868 in 2016.

EIGRP is used on a router to share routes with other routers within the same autonomous system. Unlike other well known routing protocols, such as RIP, EIGRP only sends incremental updates, reducing the workload on the router and the amount of data that needs to be transmitted.

EIGRP replaced the Interior Gateway Routing Protocol (IGRP) in 1993. One of the major reasons for this was the change to classless IPv4 addresses in the Internet Protocol, which IGRP could not support.
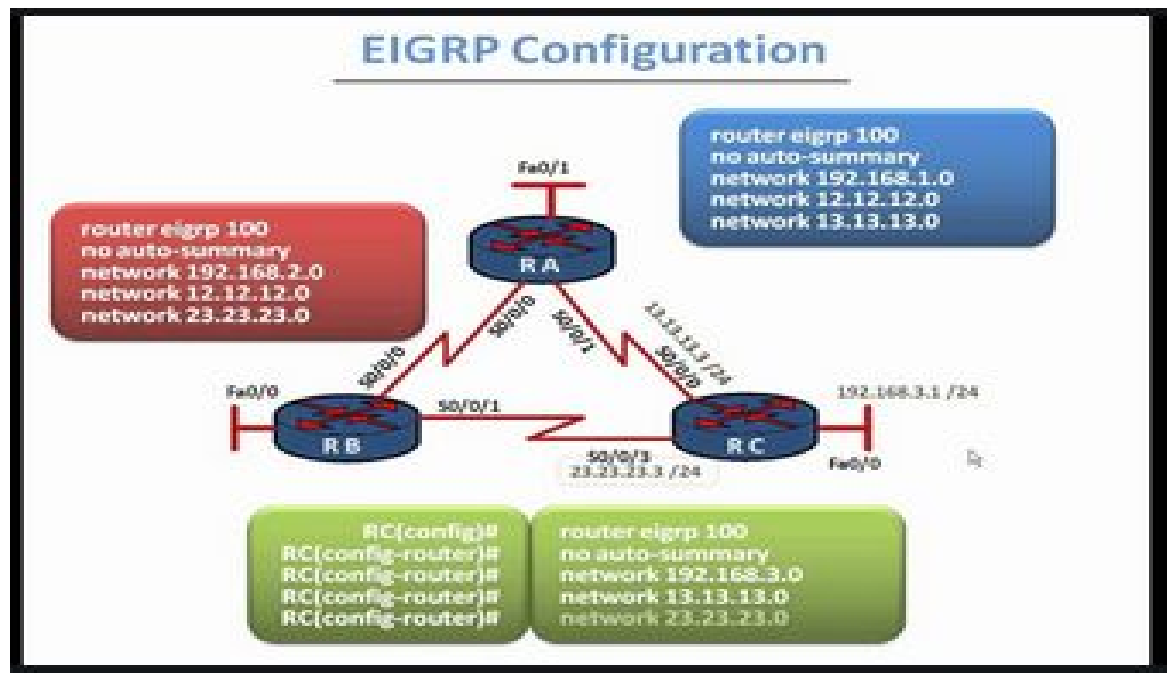
Router# configure terminal

Router(config)# router eigrp 1

Router (config-router)# network 10.201.96.0 0.0.15.255

Router (config-router)# no auto-summary

Router (config-router)# exit

EIGRP Configuration

The Routing Information Protocol (RIP) is one of the oldest distance-vector routing protocols which employ the hop count as a routing metric. RIP prevents routing loops by implementing a limit on the number of hops allowed in a path from source to destination. The largest number of hops allowed for RIP is 15, which limits the size of networks that RIP can support. RIP implements the split horizon, route poisoning and holddown mechanisms to prevent incorrect routing information from being propagated.

RIP uses the User Datagram Protocol (UDP) as its transport protocol, and is assigned the reserved port number 520.
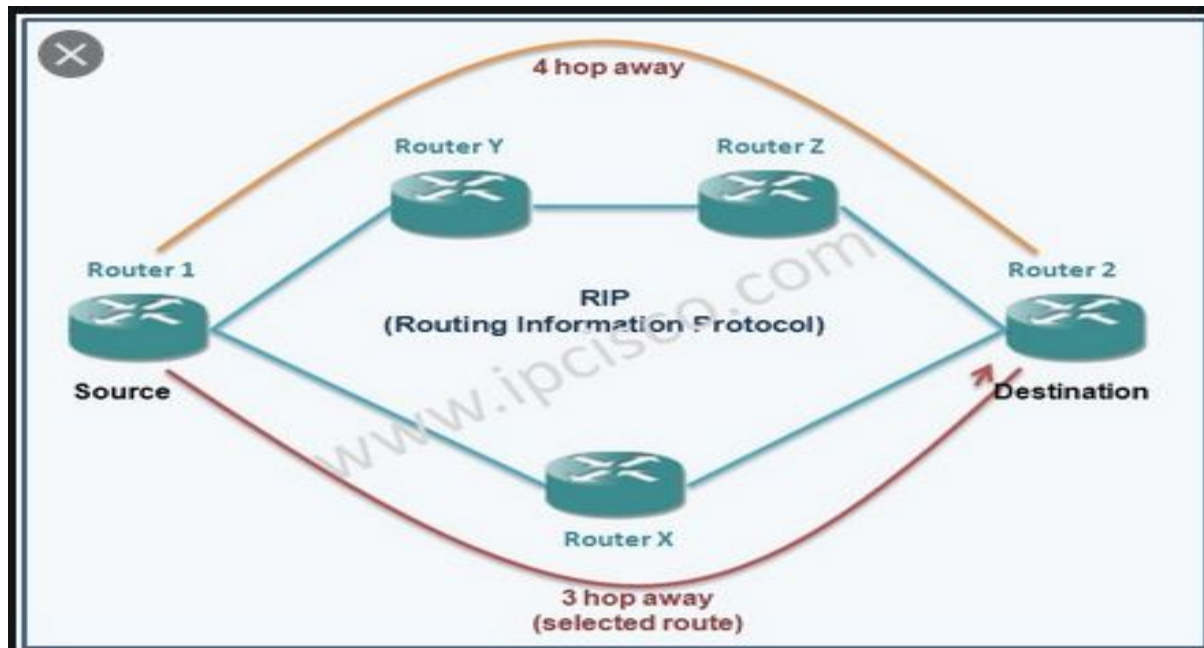
WLAN

A wireless LAN (WLAN) is a wireless computer network that links two or more devices using wireless communication to form a local area network (LAN) within a limited area such as a home, school, computer laboratory, campus, or office building. This gives users the ability to move around within the area and remain connected to the network. Through a gateway, a WLAN can also provide a connection to the wider Internet. Most modern WLANs are based on IEEE 802.11 standards and are marketed under the Wi-Fi brand name. Wireless LANs have become popular for use in the home, due to their ease of installation and use. They are also popular in commercial properties that offer wireless access to their employees and customers.

Conclusion:

In this assignment , i performed simulation of configuration eirgp protocol , rip protocol and WLAN .