RIP IP ROUTING TO CONNECT AN HEAD OFFICE AND A BRANCH OFFICE WITH ISP NETWORK

Configuring dynamic IP routing RIP (Routing Information Protocol) with ISP network. This will be done in a LAB of connecting two offices together, head office and branch office, the purpose is for both to be able to communicate or share data or information through network protocols or let just say to route traffics between the branches. However, if the organization that has more than one branch, that will still be possible.

The LAB will be done by placing 2811 Cisco router and 2960 Cisco switch in each office. The routers will serve as a DHCP server and will connect both office together and each router in the office will be connected to the switch to provide network to all LAN devices from the router. The project will be done using Cisco Packet Tracer.

Please have in mind that this is a practical Lab, in real world to connect the 2 branches together the organization will have to lay a fiber optic cable or use a fixed wireless internet (fixed wireless transmit signal through the air from a nearby tower which means they provide a cable free connection.

Starting the configuration:(HO-ROUTER)

en

conf t

hostname HO-ROUTER

int f0/1

ip add 200.50.5.1 255.255.255.0

This ISP address will connect port from Head office to Branch office

no shutdown

Purpose of doing no shutdown is for the port to come up to allow traffic to pass through them because by default all port are shutdown by cisco as it been the default state of all Cisco routers

exit

int f0/0

ip add 192.168.4.1 255.255.255.0

The IP address will serve as the default gateway for all devices at the Head Office

no shutdown

end

wr

(BO-ROUTER)

en

conf t

hostname BO-ROUTER

int f0/1

ip add 200.50.5.2 255.255.255.0

This ISP address will connect port from Branch office to Head office

no shutdown

exit

int f0/0

ip add 192.168.5.1 255.255.255.0

The IP address will serve as the default gateway for all devices at the Branch Office

no shutdown

end

wr

Configuring DHCP server on (HO-ROUTER)

en

conf t

ip dhcp pool HO-NETWORK

network 192.168.4.0 255.255.255.0

default-router 192.168.4.1

end

wr

Configuring DHCP server on (BO-ROUTER)

en

conf t

ip dhcp pool BO-NETWORK

network 192.168.5.0 255.255.255.0

default-router 192.168.5.1

end

wr

Configuring IP RIP routing on (HO-ROUTER)

en

conf t

router rip

no auto-summary

network 192.168.4.0

network 200.50.5.0

end

wr

In RIP routing when routing from Head office you have to use the Head Office LAN address and the ISP address or if there are more port connected to the router you have to add it

Configuring IP routing on (BO-ROUTER)

en

conf t

router rip

no auto-summary

network 192.168.5.0

network 200.50.5.0

end

wr

In RIP routing when routing from Branch office you have to use the Branch Office LAN address and the ISP address or if there are more port connected to the router you have to add it

sh ip route

This command will show us our IP route

That is the end of the configuration

You have to put all device to auto get IP in order for DHCP server to assign IP to them all. Ping from each devices to see if they will communication with each other as it is important to check if all process are working fine.

RIP is a distance-vector routing protocol which helps vector to know or assign the best route to channel the traffic to and it is mostly used in a small or medium sized organization networks

NOTE: Port numbers in this Lab are the numbers of port we connected our cables, this can be different in your situation if you connect your cables to a different port. Therefore you have to use the port numbers during the configuration.