AIM: To Simulate the Border Gateway protocol using cisco packet Tracer.

Description:

Border Gateway protocol (BGP) is the routing protocol for the internet. Border Gateway protocol is used to exchange the routing information for the internet and in the protocol is used between ISP which are different AS or

The protocol can connect together any internetwork of autonomous system using an arbitory topology. The only requirement in that each AS have atleast one router that is able to run BGP and that is router connect to at least one other AS's BGP router.

BGP's main function in to exchange network reachability information with other BGP systems. Border Gateway protocol construct an autonomous system's graph based on the information exchanged between BGP router.

Procedure:

Step1: Construct a two networks AS100 and AS200 and connect them with a serial DTE cable as shown below.
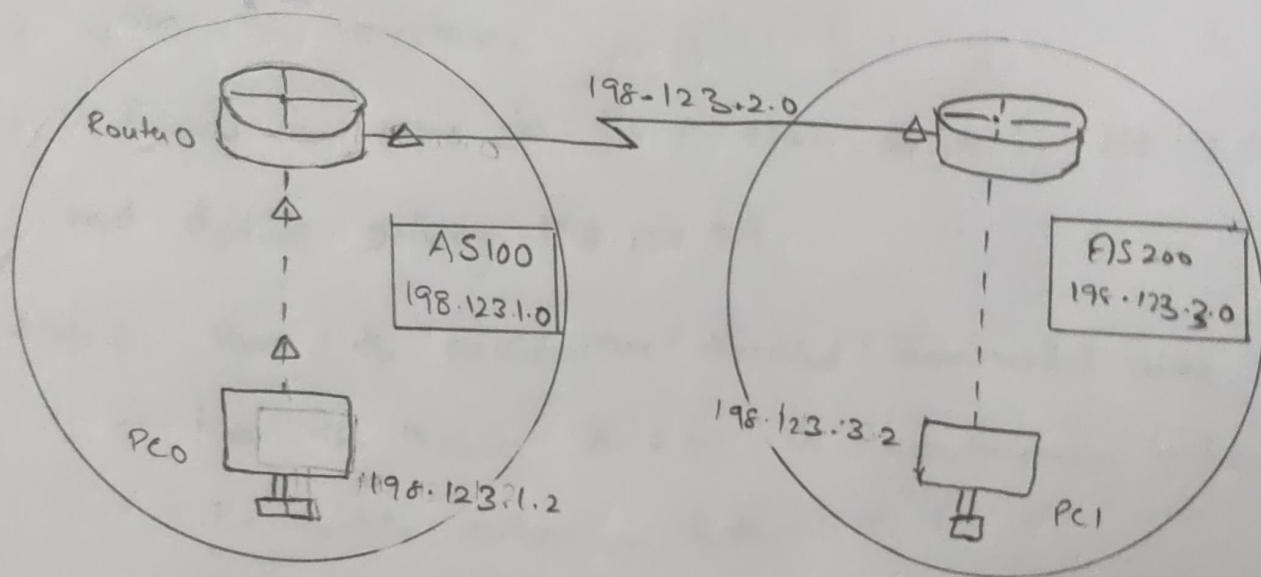
There are 3 Autonomous Systems which have ip address es as

AS 100 — 198. 123. 1. 0

AS 200 — 198. 123. 3. 0

Connection AS — 198. 123. 2. 0

The PC 0 has of AS 100 has the ip address 198. 123. 1. 0

Step2: Set the ip address to the PC 0 and PC1 of AS100 and AS 200 respectively.

click PC 0 and click m× tab > ip configuration Desktop a
and then enter ip address 198-123.1.2 and click
enter then it do automatically assigns subnet mask
and Assign default gateway has 198.123.1.1, and
close the window.

Repeat the same for PC1 also- assign ip 198.123.3.2
and default gateway 198.123.3.1.

Step 3: Here, the packets are travelled / transmitted along
blw the router and PC in an autonomous System
i.e. within autonomous System

But we need to transmit the data blw the two
Autonomous Systems. So, we need to establish a connection
blw autonomous Systems.

Step 4: Click on the router and select the config tab and
enter ip address for Route 0 has 198.123.1.1, and
Route 1 → 198.123.3.1 and switch them on ON.

Step 5: click on the router and select the config and
select the serial 2/0 and enter ip address

as 198.123.2.1 and set clock rate to 64000 and on other route in serial 2/0 without clock. so, we need set ip address has 198.123.2.2 and clock rate as not set. set the both routers to ON.

Step 6 : click on the router and relet the cli Tab enter the below commands.

firstly, we need to exit

then

cli

   # exit

(Router)(config)# BGP has route bgp 100

Router (config) # network 198.1283.1.0

Router (config) # network 198-123.2.0

Router (config)# neighbor 198.123.2.2 remote-as 200

Router (config)# neighbor 198.123.3.2 remote-as 200

Router (config) # exit

Router O is configured with BGP Protocol.

Step 7: Configure Router 1 of AS 200. using below commands in CLI of router 1.

(Router) (config) # exit
Router (config) # router bgp 200
Router (config) # network 198.123.2.0
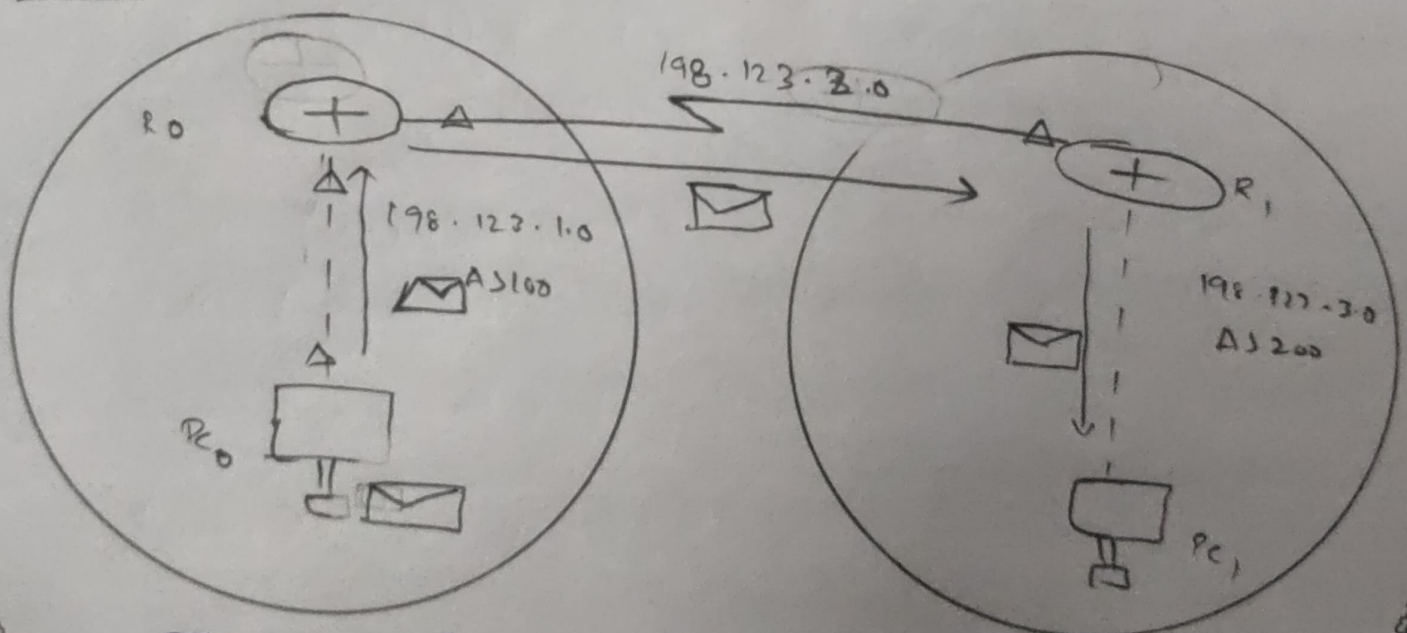Router (config) # network 198.123.3.0
Router (config) # neighbor 198.123.2.1 remote-as 100
Router (config) # neighbor 198.123.1.2 remote-as 100
Router (config) # exit.

Router 1 in also configured with BGP. protocol.

Output:

The packet from PC0 of AS100 is received by PC1 of AS200.