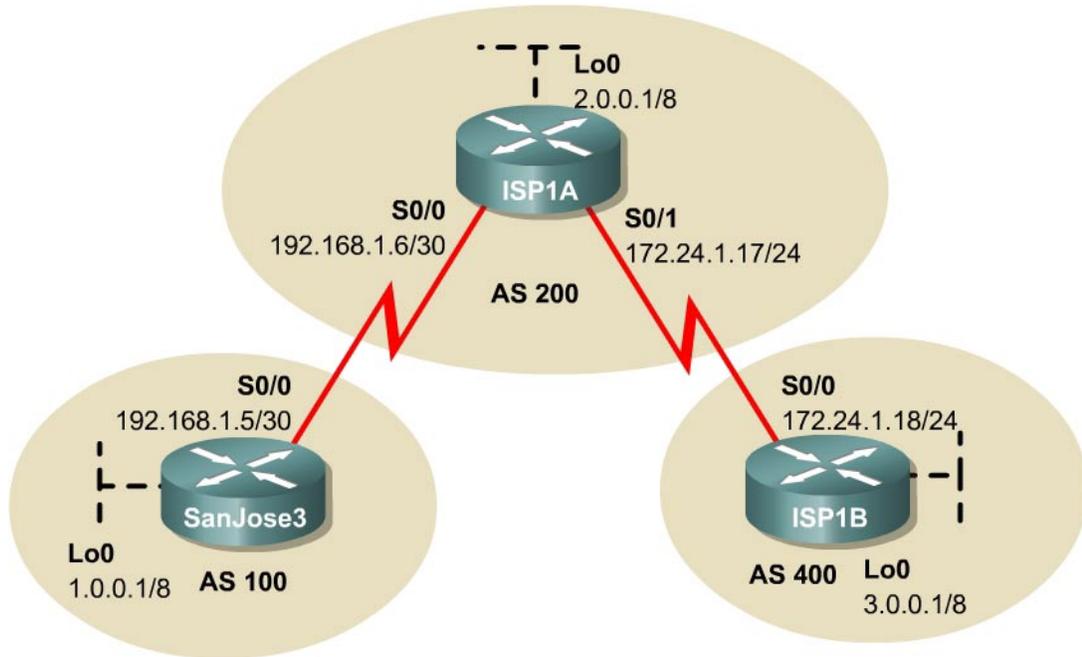


Lab 9.11.4c The BGP COMMUNITIES Attribute



Objective

In this lab, the student will use the COMMUNITIES attribute to enforce routing policy.

Scenario

The International Travel Agency peers with Internet Service Provider ISP1A and exchanges complete routing information with its AS 200. However, as a matter of policy, the International Travel Agency does not want AS 400 to learn about specific routes within the International Travel Agency's AS 100. Configure BGP on SanJose3 so that ISP1A will not forward certain routes to ISP1B in AS 400.

Step 1

Build and configure the network according to the diagram, but do not configure a routing protocol yet. Configure a loopback interface with an IP address for each router, as shown. These loopbacks will simulate networks that reside within each AS.

Use **ping** to test connectivity between all directly connected interfaces.

Step 2

Configure the three routers as EBGP peers. The following is an example of the SanJose3 configuration:

```
SanJose3(config)#router bgp 100
SanJose3(config-router)#neighbor 192.168.1.6 remote-as 200
SanJose3(config-router)#network 1.0.0.0
```

When BGP has been configured on all three routers, use the `show ip route` and `show ip bgp` commands. This will verify that ISP1B has learned about the network, 1.0.0.0/8, that belongs to AS 100.

Step 3

To influence the routing decisions of ISP1A, manipulate the BGP COMMUNITIES attribute of the route being advertised.

Configure SanJose3, as shown in the following:

```
SanJose3(config)#access-list 1 permit 1.0.0.0 0.255.255.255
SanJose3(config)#route-map NO-ONE-NET 10
SanJose3(config-route-map)#match ip address 1
SanJose3(config-route-map)#set community no-export
SanJose3(config-route-map)#route-map NO-ONE-NET 20
SanJose3(config-route-map)#exit
SanJose3(config)#router bgp 100
SanJose3(config-router)#neighbor 192.168.1.6 route-map NO-ONE-NET out
SanJose3(config-router)#neighbor 192.168.1.6 send-community
```

After these commands are entered, issue the `clear ip bgp *` command on ISP1A. Wait a few seconds, and then verify the configuration on ISP1A by entering the following command:

```
ISP1A#show ip bgp 1.0.0.0
```

1. According to the output of this command, what is the community value of this route set to?
-

Now check the routing table on ISP1B to see if this has prevented ISP1A from updating ISP1B. The route to 1.0.0.0/8 should be missing from the routing table of ISP1B. Troubleshoot as necessary.