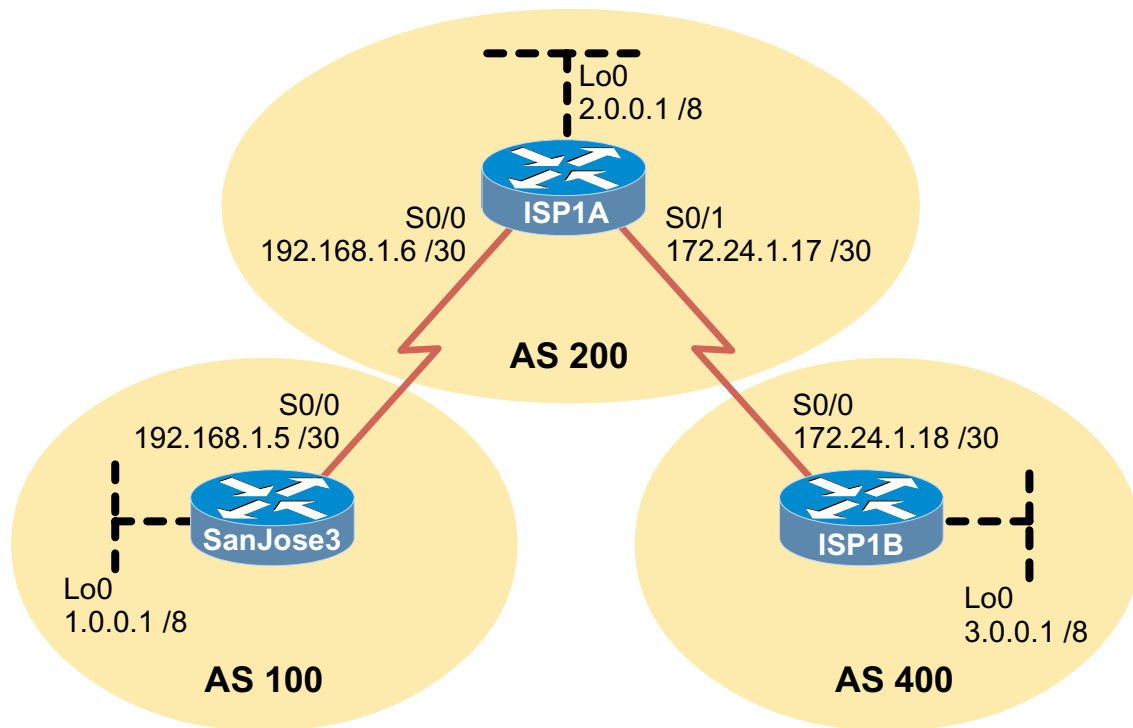


9.7.2 The BGP COMMUNITIES Attribute



Objective

In this lab, you 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. But, 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. You are asked to 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. SanJose3's configuration is shown here as an example:

```
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 you have configured BGP on the three routers, use **show ip route** and **show ip bgp** to verify that ISP1B has learned about AS 100's network, 1.0.0.0/8.

Step 3

As the International Travel Agency's network administrator, you most likely would not have configuration access to ISP1A AS 200's BGP routers. So, to influence ISP1A's routing decisions, you need to manipulate the BGP COMMUNITIES attribute of the route you are advertising.

Configure SanJose3, as shown:

```
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 you enter these commands, issue the **clear ip bgp *** command on ISP1A. Wait a few seconds, and then verify your 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 ISP1B's table to see if you have prevented ISP1A from updating ISP1B. The route to 1.0.0.0/8 should be missing from its table. Troubleshoot, as necessary.