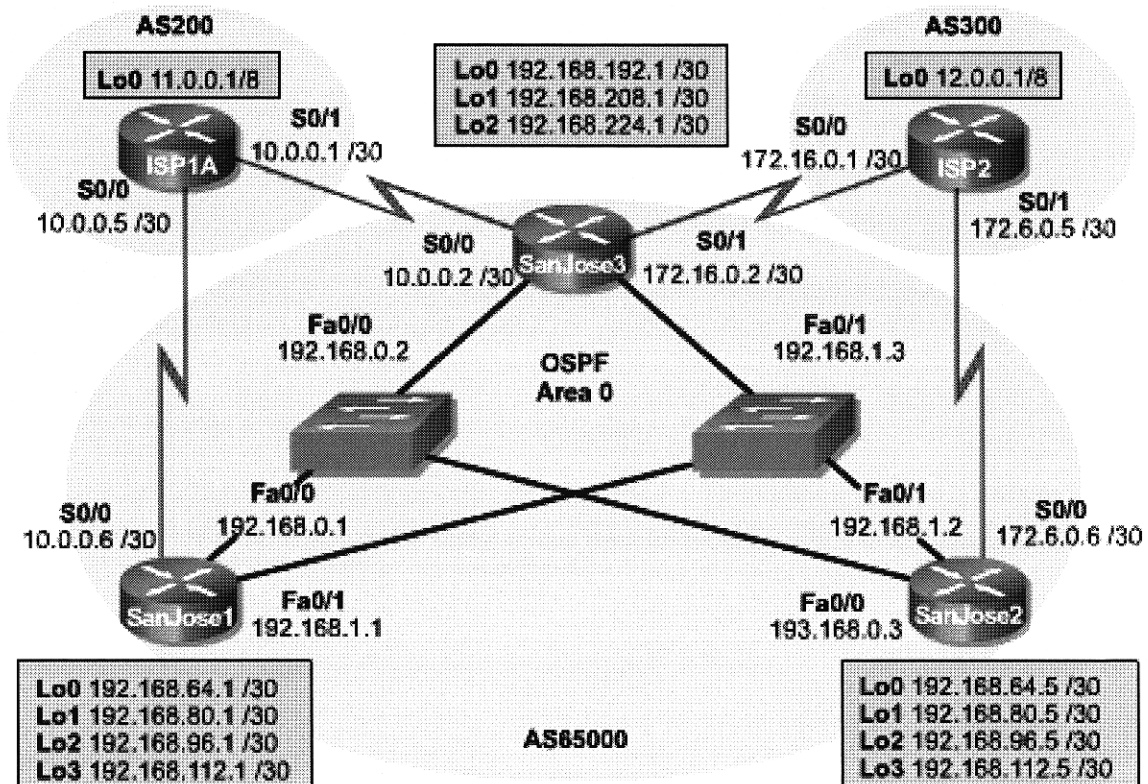


## Lab 9.12.1 BGP Challenge Lab



### Objective

Configure EBGP between the company's core routers and the two ISP routers. Configure IBGP with peers to create a network that will provide the International Travel Agency with a fully meshed, reliable, and efficient core network.

### Scenario

The International Travel Agency relies heavily on the Internet for advertisement, sales, and communication within the company and with their customers throughout the world. They have, therefore, decided to contract with two ISPs. They are connected as shown in the figure. The company requires its network to be readily available and reliable at all times. The loopback addresses on the ISP1A and ISP2 routers represent other customers. The loopback addresses on the San Jose routers represent networks to regional headquarters and local branch offices.

### Implementation Requirements

- Configure EBGP between the International Travel Agency core routers and ISP1A and ISP2.
- Configure IBGP between the International Travel Agency core routers.

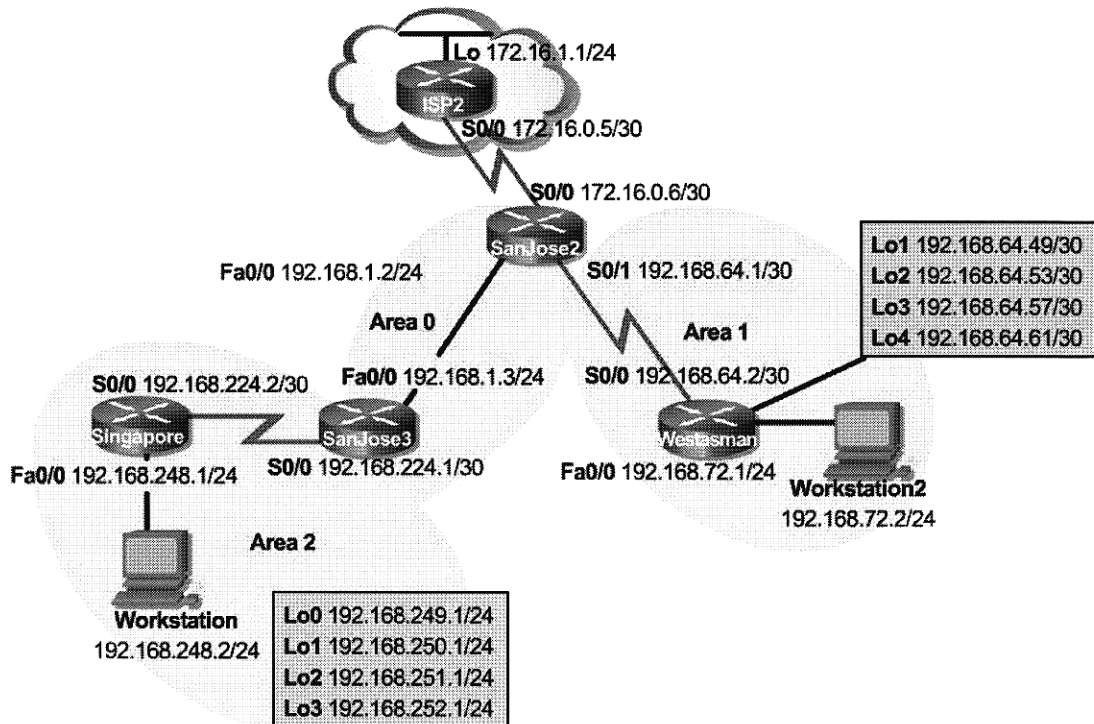
- Only the internal 192.168.0.0 network should be advertised to ISP1A and ISP2 distributed access lists.
- SanJose1 should be able to communicate with ISP2 through SanJose3. SanJose2 should be able to communicate with ISP1A through SanJose3 using next-hop-self.
- SanJose1 will use ISP1A as its primary ISP through its direct link, and SanJose2 will use ISP2 as its primary ISP.
- If either direct link of SanJose1 or SanJose2 fails for any reason, all traffic should automatically be routed through SanJose3 to either ISP1A or ISP2.
- The International Travel Agency's AS number 65000 should be prevented from being advertised beyond the ISP1A and ISP2 routers to the outside world. It also should not be advertised to their other customer networks, for example, loopback addresses.

### Implementation Completion Tests

- A successful ping to every network interface from every router.
- The `show` command verifies that routing tables contain the routes specified by the requirements.

DRAFT

## Lab 6.10.1 OSPF Challenge Lab



### Objective

In this lab, create a multiarea OSPF autonomous system that includes a totally stubby area, injection of external routes, and a persistent default route toward the ISP.

### Scenario

As the Enterprise Network Administrator for International Travel Agency, responsibilities include, but are not limited to, designing and implementing internetwork connectivity. To ensure success by reducing complexity, start scaling the network by connecting only the Asia region and one local site, Westasman, to the San Jose corporate headquarters and ISP2. When satisfied with the results, implement all other regions and sites.

### Design Considerations

At this point, Westasman is in stub Area 1 with one exit point and no need to redistribute external routes. The router at Westasman has been in service for several years and might not be able to keep up with a large OSPF internetwork. The autonomous system also has only one exit point to the Internet. Therefore, creating a totally stubby area is preferred.

Instead of the administrative burden of many static routes, use a stable default route advertised through OSPF. There is concern about route flapping if the WAN link to ISP2 is unstable. A persistent default route to ISP2 is required.

When provisioning the network, the memory and processor had been upgraded on SanJose2. It is intended for it to be the ASBR and the DR for any area that requires one.

Only summarized or unique networks should be advertised through Area 0.

### Implementation Requirements

- Configure NAT overload on SanJose2 S0/0 interface. Therefore, no routing is necessary on ISP2.
- Configure Area 1 as a totally stubby area.
- Advertise a persistent default route from SanJose2 through OSPF.
- SanJose2 will always be the DR in Area 0.
- SanJose3 will never be the DR in Area 0.
- Summarize routes at the ABR and ASBR. When summarizing inter-area routes, the summary routes may need to be configured on a router other than the router originating the routes.

### Implementation Completion Tests

- Successful pings to ISP2 from workstation1 and workstation2.
- Successful pings between workstation1 and workstation2.
- Only a default route in the Westasman route table, injected from SanJose2.
- The `show` command verifies that SanJose2 is DR.
- The `show ip route` command shows summary addresses for all loopback networks.
- All loopback addresses can be reached from anywhere in the network.
- Two minutes after a WAN link failure, by disconnecting the serial cable from ISP2, an E2 default route is still present in Singapore.