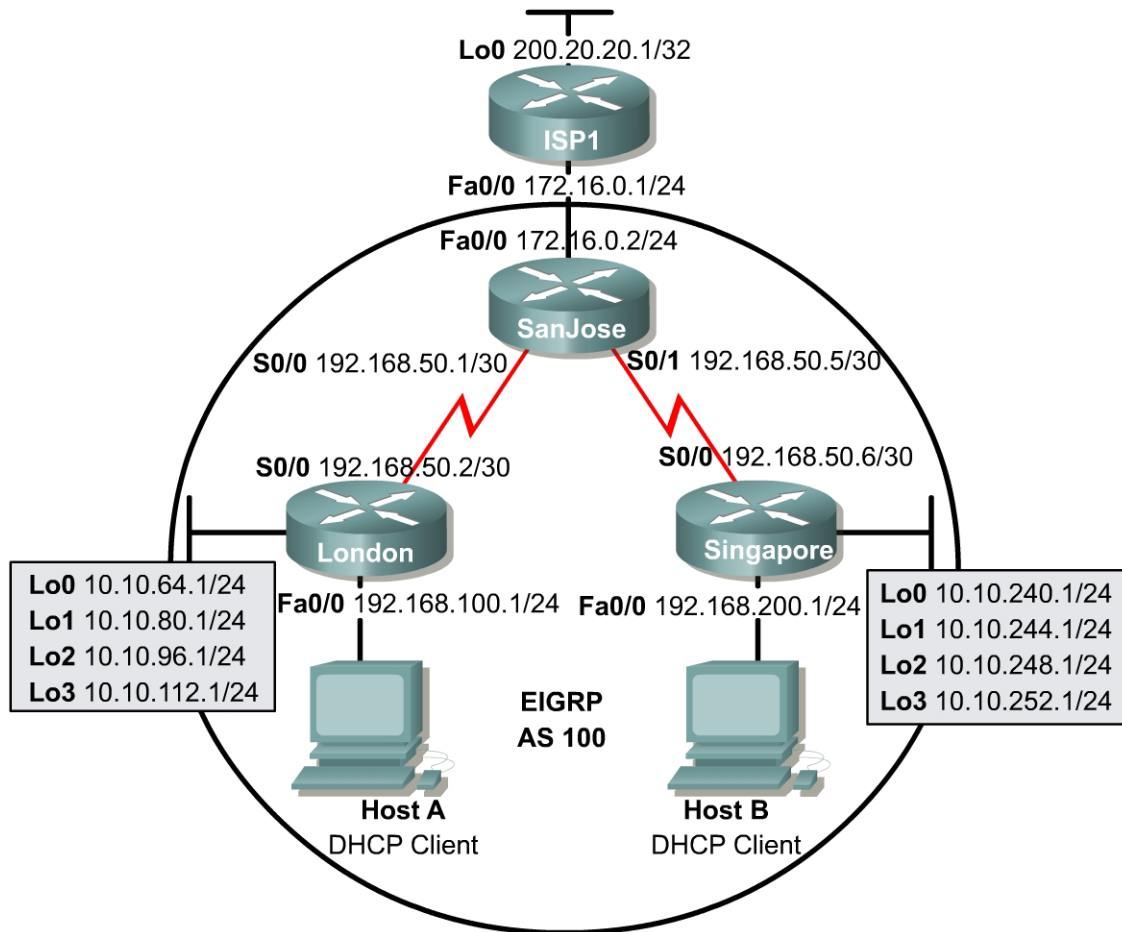## Lab 5.8.1 EIGRP Challenge Lab

Objective

In this lab an EIGRP network will be configured with Network Address Translation (NAT) and Dynamic Host Configuration Protocol (DHCP) services provided by the routers. EIGRP interface address summarization will be configured to reduce the number of routes in the EIGRP routing tables.

Scenario

The International Travel Agency is currently running EIGRP between its overseas and North American headquarters. The ISP recently raised the price on the static IP addresses. In order to alleviate costs, the task of the network engineer is to implement address conservation technologies such as NAT and DHCP. It is also necessary to implement interface address summarization in order to reduce routing table size. To simplify default routing procedures, SanJose should propagate a persistent default route to both overseas headquarters.

Design Considerations

Before beginning this lab, it is recommended that each router be reloaded after erasing its startup configuration. This prevents problems caused by residual configurations. It is also recommended that the network be built and configured according to the diagram, but do not configure EIGRP until the connectivity between directly connected networks has been confirmed. The respective loopback addresses simulate local networks, so no physical connections need to be made.

Implementation Requirements

- A successful `ping` to every interface from every router.

- Advertise a persistent default route from SanJose through EIGRP.

- Configure Network Address Translation (NAT) on SanJose.

- Configure Dynamic Host Configuration Protocol (DHCP) service on London and Singapore routers.

- Configure EIGRP interface address summarization on London and Singapore.

Implementation Completion Tests

- Successful `pings` to the loopback interface of ISP1 from Host A and Host B.

- `show run` and `show ip route` for each router.

- `show ip eigrp neighbor` of the SanJose router.

- `show ip eigrp topology all-links` of the SanJose router.

- `show ip dhcp binding` and `show ip dhcp server statistics` of the London and Singapore routers.

- `show ip nat translations` and `show ip nat statistics` of the SanJose router.