

## Implementing DHCP

Eli Chang

MSSA Cohort #2

## Diagram Exercise 2

2/8/2020

### Implementing DHCP

The administrators have configured the DHCP server in the Toronto regional office and the wired and wireless devices in each branch office. The range of IP addresses for each device and branch has been determined as well. DHCP is to lease IP addresses to the requested clients automatically and quickly. For wired devices, the lease duration has set up with eight days; the lease lasts one day for the wireless devices. Every eight day for the wired devices and every 24 hours for wireless devices should request DHCP for the lease renewal

Each router in each branch has the DHCP relay agent so that when the DHCP clients broadcast a requested packet to DHCP, the relay agent would act as a middleman between DHCP servers and clients to reduce traffic. For example, the Houston branch office has over 500 devices, and if more than 200 devices request DHCP for the lease renewal, the DHCP server might experience overwork. However, with the relay agent, the traffic goes to DHCP with unicast so that it could reduce the amount of task DHCP could do at the same time.

When the packets are sent to the DHCP server via the relay agent, they go to the primary DHCP server in the Toronto regional office. In the London head office, the DHCP failover has been established for high-availability. If the DHCP server in the regional office goes down, the DHCP server in the head office would be able to provide the leases to the DHCP clients. The relay agents have both IP addresses for DHCP servers in Toronto and London so that they would know where to send the packets wherever is possible.

