

Lab #2 – Layer 3 Forwarding

Purpose

To learn how Layer 3 forwarding works. You will have two different networks communicating with each other over a third network using RIP.

Procedure

Your two switches (part of your second switch) have been connected via a cross-over patch cable. You will have to do the following to use layer 3 forwarding in your new network.

1. Create a new VLAN in your switches (this will be the new transport network)
 - a. Assign an IP address to this new VLAN in both switches
 - b. Add the ports that connect the switches to this VLAN
2. Enable RIP for your switches and VLANs
3. Add appropriate route(s) to the VLAN(s) so that all networks can communicate
4. Show the VLAN information for both switches
5. Show the routing table in both switches
6. Ping from one original VLAN to all the other VLAN IP addresses
7. Ping from the other original VLAN to all other VLAN IP addresses
8. Ensure your changes are persistent across a reboot of the switches

Turn in

1. The answer to the following question: Why is it necessary to use a cross-over patch cable instead of a straight-through patch cable to connect the two switches? Be specific.
2. A diagram showing your switches and clients, their connections and IP address information
3. All commands entered into the switch to complete the lab (just the commands that were necessary and worked; I don't want to see all commands you tried)
4. The output of the successful commands for questions 4, 5, 6 and 7