The Inside Track

Objective

Explain how Layer 3 switches forward data in a small- to medium-sized business LAN.

Scenario

Your company has just purchased a three-level building. You are the network administrator and must design the company inter-VLAN routing network scheme to serve a few employees on each floor.

Floor 1 is occupied by the HR Department, Floor 2 is occupied by the IT Department, and Floor 3 is occupied by the Sales Department. All Departments must be able to communicate with each other, but at the same time have their own separate working networks.

You brought three Cisco 2960 switches and a Cisco 1941 series router from the old office location to serve network connectivity in the new building. New equipment is non-negotiable.

Refer to the PDF for this activity for further instructions.

Resources

- Software presentation program

Directions

Work with a partner to complete this activity.

Step 1:   Design your topology.

   a.   Use one 2960 switch per floor of your new building.

   b.   Assign one department to each switch.

   c.   Pick one of the switches to connect to the 1941 series router.

Step 2:   Plan the VLAN scheme.

   a.   Devise VLAN names and numbers for the HR, IT, and Sales Departments.

   b.   Include a management VLAN, possibly named Management or Native, numbered to your choosing.

   c.   Use either IPv4 or v6 as your addressing scheme for the LANs. If using IPv4, you must also use VLSM.

Step 3:   Design a graphic to show your VLAN design and address scheme.

Step 4:   Choose your inter-VLAN routing method.

   a.   Legacy (per interface)

   b.   Router-on-a-Stick

   c.   Multilayer switching

Step 5:   Create a presentation justifying your inter-VLAN routing method of choice.

   a.   No more than eight slides can be created for the presentation.

b. Present your group's design to the class or to your instructor.

1) Be able to explain the method you chose. What makes it different or more desirable to your business than the other two methods?

2) Be able to show how data moves throughout your network. Verbally explain how the networks are able to communicate using your inter-VLAN method of choice.