Linking Up (Instructor Version)

Instructor Note: Red font color or Gray highlights indicate text that appears in the instructor copy only.

Objective

Describe link aggregation.

Instructor Note: This modeling activity is best completed in very small groups and then shared with another group or the class.

Scenario

Many bottlenecks occur on your small- to medium-sized business network, even though you have configured VLANs, STP, and other network traffic options on the company's switches.

Instead of keeping the switches as they are currently configured, you would like to try EtherChannel as an option for, at least, part of the network to see if it will lesson traffic congestion between your access and distribution layer switches.

Your company uses Catalyst 3560 switches at the distribution layer and Catalyst 2960 and 2950 switches at the access layer of the network. To verify if these switches can perform EtherChannel, you visit the *System Requirements to Implement EtherChannel on Catalyst Switches*. This site allows you to gather more information to determine if EtherChannel is a good option for the equipment and network currently in place.

After researching the models, you decide to use a simulation software program to practice configuring EtherChannel before implementing it live on your network. As a part of this procedure, you ensure that the equipment simulated in Packet Tracer will support these practice configurations.

Resources

- World Wide Web connectivity
- Packet Tracer software
- Word processing or spreadsheet software

Directions

Step 1: Visit *System Requirements to Implement EtherChannel on Catalyst Switches*.

a. Pay particular attention to the Catalyst 3560, 2960, and 2950 model information.

b. Record any information you feel would be useful to deciding whether to use EtherChannel in your company.

Step 2: Create a matrix to record the information you recorded in Step 1b, including:

a. Number of ports allowed to bundled for an EtherChannel group

b. Maximum group bandwidth supported by bundling the ports

c. IOS version needed to support EtherChannel on the switch model

d. Load balancing availability

e. Load balancing configuration options

f. Network layers supported for EtherChannel operation

Step 3: Open Packet Tracer.

a. Notice how many ports are available to bundle for EtherChannel on all three switch models.

b. Check all three models to see how many EtherChannel groups you could create on each model.

c. Make sure the IOS version is recent enough to support all EtherChannel configurations.

d. Do not configure your simulated network, but do check the models available in the Packet Tracer to make sure they will support all the EtherChannel configuration options.

Step 4: Share your matrix with another group or the class.

Instructor – Example Activity Solution

EtherChannel Requirements	Catalyst 3560	Catalyst 2960	Catalyst 2950
Maximum number of ports allowed for channel groups	8	8	8
Etherchannel bandwidth created per group	800 Mbps 8 Gbps	800 Mbps 2 Gbps	800 Mbps 2 Gbps
Minimum IOS Version supported	12.1(19)EA	12.2(25)FX	12.0(5.2)WC(1)
Load balancing types	MAC or IP address Source or destination Source and destination	MAC or IP address Source or destination Source and destination	MAC address Source or destination
OSI Model layers supported for configuration	Layers 2 and 3	Layers 2 and 3	Layer 2
Packet Tracer program IOS version	1.2(37)SE1	12.2(25r)FX	12.1(22)EA4
Number of Packet Tracer ports available for channel groups	24 FastEthernet 2 GigabitEthernet	24 FastEthernet 2 GigabitEthernet	24 FastEthernet

Identify elements of the model that map to IT-related content:

- EtherChannel
- EtherChannel switch models
- Bandwidth for channel groups
- EtherChannel configuration layers
- IOS for switch models using EtherChannel