Packet Tracer - Troubleshoot EtherChannel

Objectives

Part 1: Examine the Physical Layer and Correct Switch Port Mode Issues

Part 2: Identify and Correct Port Channel Assignment Issues

Part 3: Identify and Correct Port Channel Protocol Issues

Background

A junior technician recently configured four switches. Users are complaining that the network is running slowly, and they would like you to investigate.

Port Channel Table

Channel Group	Ports	Protocol
1	S1: G0/1, G0/2 S3: G0/1, G0/2	LACP active
2	S2: G0/1, G0/2 S4: G0/1, G0/2	LACP active
3	S1: F0/23, F0/24 S2: F0/23, F0/24	LACP active
4	S3: F0/23, F0/24 S4: F0/23, F0/24	LACP active
5	S1: F0/21, F0/22 S4: F0/21, F0/22	LACP active
6	S2: F0/21, F0/22 S3: F0/21, F0/22	LACP active

Device Table

Device	Group	Ports
S1	1	G0/1, G0/2
	3	F0/23, F0/24
	5	F0/21, F0/22
S2	2	G0/1, G0/2
	3	F0/23, F0/24
	6	F0/21, F0/22
S3	1	G0/1, G0/2
	4	F0/23, F0/24
	6	F0/21, F0/22

Device	Group	Ports
S4	2	G0/1, G0/2
	4	F0/23, F0/24
	5	F0/21, F0/22

Instructions

Part 1: Examine the Physical Layer and Correct Switch Port Mode Issues

Step 1: Look for access ports.

Examine the switches. When two or more redundant links connect the same switches, Spanning Tree protocol will only put one port in forwarding mode to prevent switching loops. You can see this in Packet Tracer. When physical ports are assigned to an EtherChannel port, they behave as one logical port. Each pair will either be operational or down.

Step 2: Verify ports are in trunk mode.

a. Verify that all physical ports in the topology are configured as trunks. Correct any ports that are in access mode.

b. Correct any EtherChannel ports that are not configured as trunks.

Part 2: Identify and Correct Port Channel Assignment Issues

Step 1: Examine port channel assignments.

The Packet Tracer topology and the Port Channel and Device tables provide details about the physical ports and their EtherChannel assignments. Use the **show etherchannel summary** command to learn how the EtherChannel links are configured. Verify that the switches are configured as shown in the documentation.

Step 2: Correct port channel assignments.

Correct any switch ports that are not assigned to the correct EtherChannel port.

Part 3: Identify and Correct Port Channel Protocol Issues

Step 1: Identify protocol issues.

In 2000, the IEEE released 802.3ad (LACP), which is an open standard version of EtherChannel. For compatibility reasons, the network design team chose to use LACP across the network. The design team has made it a requirement that all ports that participate in EtherChannel need to actively negotiate the link as LACP. Verify that the physical ports are configured as indicated in the topology and Port Channel Table.

Step 2: Correct Protocol issues.

a. Correct any switch ports that are not negotiating using LACP.

b. Reissue the **show etherchannel summary** command to verify that all EtherChannel links are now correctly configured.