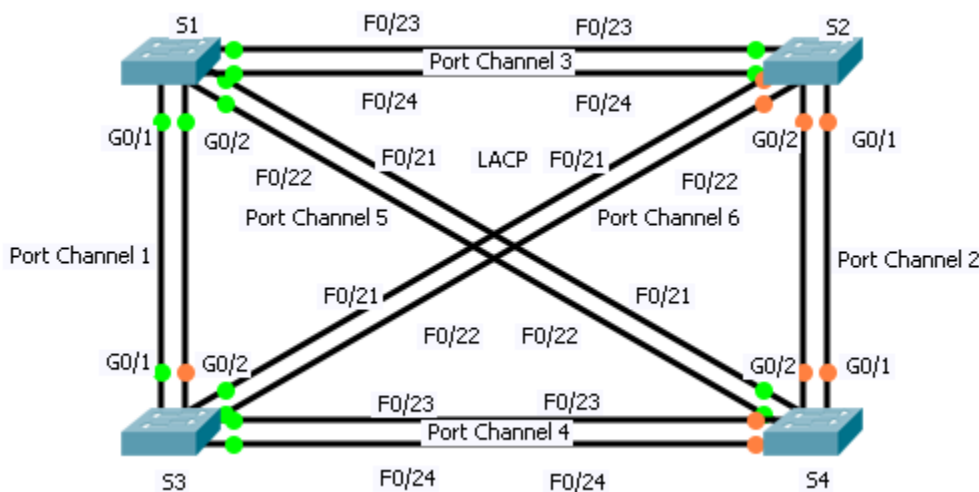


Packet Tracer – Troubleshooting EtherChannel (Instructor Version)

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

Topology



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

Four switches were recently configured by a junior technician. Users are complaining that the network is running slow and would like you to investigate.

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

Step 1: Look for access ports.

Examine the switches. When physical ports are assigned to an EtherChannel port, they behave as one. Each pair will either be operational or down. They will not be mixed with one port green and the other port orange.

Step 2: Set ports to trunking mode.

- Verify that all physical ports in the topology are set to trunking. Correct any that are in access mode.

```
S2(config)# interface range f0/21 - 24
S2(config-if-range)# switchport mode trunk
S2(config-if-range)# interface range g0/1-2
S2(config-if-range)# switchport mode trunk
```

- Correct any EtherChannel ports that are not set to trunking mode.

Instructor Note: Packet Tracer 6.0.1 does not grade the **switchport mode trunk** command in port-channel interfaces.

```
S1(config)# interface port-channel 1
S1(config-if)# switchport mode trunk

S2(config)# interface port-channel 2
S2(config-if)# switchport mode trunk
S2(config-if)# interface port-channel 3
S2(config-if)# switchport mode trunk
S2(config-if)# interface Port-channel 6
S2(config-if)# switchport mode trunk
```

Part 2: Identify and Correct Port Channel Assignment Issues

Step 1: Examine port channel assignments.

The topology illustrates physical ports and their EtherChannel assignments. Verify that the switches are configured as indicated.

```
S1# show etherchannel summary
```

```
<output omitted>
```

1	Po1 (SD)	LACP	Gig0/1 (I)	Gig0/2 (I)
3	Po3 (SU)	LACP	Fa0/23 (P)	Fa0/24 (P)
5	Po5 (SU)	LACP	Fa0/21 (P)	Fa0/22 (P)

```
S2# show etherchannel summary
```

```
<output omitted>
```

2	Po2 (SU)	LACP	Gig0/1 (P)	Gig0/2 (P)
3	Po3 (SU)	LACP	Fa0/23 (P)	Fa0/24 (P)
6	Po6 (SD)	LACP	Fa0/21 (I)	Fa0/22 (I)

```
S3# show etherchannel summary
```

```
<output omitted>
```

1	Po1 (SD)	PAgP	Gig0/1 (I)	Gig0/2 (I)
4	Po4 (SD)	PAgP	Fa0/23 (I)	Fa0/24 (I)
6	Po6 (SD)	PAgP	Fa0/21 (I)	Fa0/22 (I)

```
S4# show etherchannel summary
```

```
<output omitted>
```

2	Po2 (SU)	LACP	Gig0/1 (P)	Gig0/2 (P)		
4	Po4 (SU)	LACP	Fa0/21 (P)	Fa0/22 (P)	Fa0/23 (I)	Fa0/24 (I)
5	Po5 (SD)	-				

Step 2: Correct port channel assignments.

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

```
S4(config)# interface range f0/21 - 22
S4(config-if-range)# channel-group 5 mode active
```

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. All ports that participate in EtherChannel need to actively negotiate the link as LACP, as opposed to PAgP. Verify that the physical ports are configured as indicated.

```
S3# show etherchannel summary
<output omitted>
1      Po1 (SD)          PAgP    Gig0/1 (I) Gig0/2 (I)
4      Po4 (SD)          PAgP    Fa0/23 (I) Fa0/24 (I)
6      Po6 (SD)          PAgP    Fa0/21 (I) Fa0/22 (I)
```

Step 2: Correct Protocol issues.

Correct any switch ports that are not negotiating using LACP.

```
S3(config)# interface range g0/1 - 2
S3(config-if-range)# no channel-group
S3(config-if-range)# channel-group 1 mode active
S3(config-if-range)# interface range f0/21 - 22
S3(config-if-range)# no channel-group
S3(config-if-range)# channel-group 6 mode active
S3(config-if-range)# interface range f0/23 - 24
S3(config-if-range)# no channel-group
S3(config-if-range)# channel-group 4 mode active
```