Packet Tracer - Implement EtherChannel

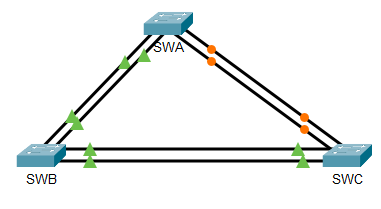
**Text

Description automatically generated**

|  |  |
| --- | --- |
| **NAME** | **MOHAMAD SAIFUL NIZAM BIN ABD AZIZ** |
| **NO. MATRIC** | **A179830** |
| **INSTRUCTOR** | **TS. DR. WAN FARIZA BINTI FAUZI** |

Packet Tracer - Implement EtherChannel

# Objectives



Part 1: Build the network

Part 2: Configure EtherChannel

# Background

You have been assigned the task of designing an EtherChannel implementation for a company that wants to improve the performance of their switch trunk links. You will try several different ways of implementing the EtherChannel links in order to evaluate which is the best for the company. You will build the topology, configure trunk ports, and implement LACP, PAgP and static EtherChannels.

# Instructions

## Build the network.

Use the table below to build the switch topology.

### Obtain the devices that are required.

* + - 1. Click the **Network Devices** icon in the bottom tool bar.
      2. Click the **Switches** entry in the submenu.
      3. Locate the **2960** switch icon. Click and drag the icon for the 2960 switch into the topology area.
      4. Repeat the step above so that there are **three** 2960 switches in the topology area.
      5. Arrange the devices into a layout that you can work with by clicking and dragging.

### Name the devices.

The devices have default names that you will need to change. You will name the devices **SWA**, **SWB**, and **SWC**. You are changing the display names of the devices. This is the text label that appears below each device. It is **not** the host name. Your display names must match the names that are given in this step **exactly**. If a display name does not match, you will not be scored for your device configuration.

* + - 1. Click the device display name that is below the device icon. A text field should appear with a flashing insertion point. If the configuration window for the device appears, close it and try again by clicking a little further away from the device icon.
      2. Replace the current display name with the appropriate display name.
      3. Repeat until all devices are named.

### Connect the devices.

* + - 1. Click the orange lightning bolt Connections icon in the bottom toolbar.
      2. Locate the Ethernet straight-through cable icon. It looks like a solid black diagonal line.
      3. To connect the device, click the Ethernet straight-through cable icon and then click the first device that you want to connect. Select the correct port and then click the second device. Select the correct port and the devices will be connected.
      4. Connect the devices as specified in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| Port Channel | Devices | Port Connections | Type |
| 1 | SWA to SWB | G0/1 to G0/1 | PAgP |
| 1 | SWA to SWB | G0/2 to G0/2 |  |
| 2 | SWA to SWC | F0/21 to F0/21 | LACP |
| 2 | SWA to SWC | F0/22 to F0/22 |  |
| 3 | SWB to SWC | F0/23 to F0/23 | Static |
| 3 | SWB to SWC | F0/24 to F0/24 |  |

Blank Line - no additional information

**Topology**

|  |
| --- |
| * Allow your network to converge, then copy and paste a snapshot/printscreen of your resulting network topology here * Explain what you understand from the observed link indicators. * Three switches are connected to each other via two cables, according to the topology. Not all the links have link aggregations configured, and network failure will result from the inconsistency. |

## Configure EtherChannel

Open configuration window

On each switch, configure the ports that will be used in the Port Channels as static trunk ports.

### Configure a PAgP EtherChannel.

Configure Port Channel 1 as a PAgP EtherChannel between SWA and SWB. Both sides should negotiate the EtherChannel.

* + - 1. On SWA and SWB, add ports G0/1 and G0/2 to Port Channel 1 with the **channel-group 1 mode desirable** command. The **mode desirable** option enables the switch to actively negotiate to form a PAgP link. **Note:** Interfaces must be **shutdown** before adding them to the channel group.

SWA(config)# **interface range g0/1 – 2**

SWA(config-if-range)# **shutdown**

SWA(config-if-range)# **channel-group 1 mode desirable**

SWA(config-if-range)# **no shutdown**

SWB(config)# **interface range g0/1 - 2**

SWB(config-if-range)# **shutdown**

SWB(config-if-range)# **channel-group 1 mode desirable**

SWB(config-if-range)# **no shutdown**

The message “Creating a port-channel interface Port-channel 1” should appear on both switches when the channel-group is configured. This interface designation will appear as Po1 in command output.

* + - 1. Configure the logical interface (Port Channel 1) to become a trunk by first entering the interface port-channel number command and then the switchport mode trunk command. Add this configuration to both switches SWA and SWB.

SWA(config)# **interface port-channel 1**

SWA(config-if)# **switchport mode trunk**

SWB(config)# **interface port-channel 1**

SWB(config-if)# **switchport mode trunk**

### Configure a LACP EtherChannel.

Configure Port Channel 2 as an LACP channel between SWA and SWC. In this case, **SWA initiates negotiation with SWC**. **SWC does not initiate negotiation** of the channel.

You can refer to the procedure shown in Step 1 using the appropriate modes.

### Configure a Static EtherChannel

Configure Port Channel 3 channel as a static EtherChannel between SWB and SWC. In this case, EtherChannel is formed without any negotiation.

You can refer to the procedure shown in Step 1 using the appropriate modes.

**Reflection**

* + - 1. Explain how you verify your configured EtherChannels.

Use the 'show etherchannel summary' command and ‘show interfaces trunk’ to verify the topology of the network before and after EtherChannels were configured.

|  |
| --- |
| * Again, allow your network to converge, then copy and paste a snapshot/printscreen of your resulting network topology (after EtherChannels have been implemented) here. Compare to the above snapshot. * Explain what you understand from the observed link indicators. * After configuration, all the ports are now up state. * The blocked state will be unblocked. * SWA linked to SWB on Gigabit-Ethernet 0/1 and Gigabit-Ethernet 0/2 port connections. * Port-channel 1 linked by using PAgP Ether-channel mode desirable for both SWA and SWB. * SWA linked to SWC on Fast-Ethernet 0/21 and Fast-Ethernet 0/22 port connections. * Port-channel 2 linked by using LACP Ether-channel mode active on SWA and LACP mode passive on SWC. * Show that only SWA initiates negotiations with SWC, and that SWC only responds to SWA initiating negotiations because SWC is in passive mode. * SWB linked to SWC to Fast-Ethernet 0/23 and Fast-Ethernet 0/24 port connections. * Port-channel 3 linked by using Static Ether-channel mode on for both SWB and SWC. * Show that SWC will only turn on if SWB is turned on. It will be forced to construct an ether-channel without any negotiation. If the links between SWB and SWC fail, troubleshooting will become more difficult. |

Close configuration window

End of document