

EtherChannel Port Aggregation Protocol (PAgP)

AN OVERVIEW

EtherChannel is a port link aggregation technology developed by CISCO

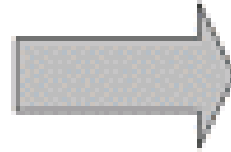
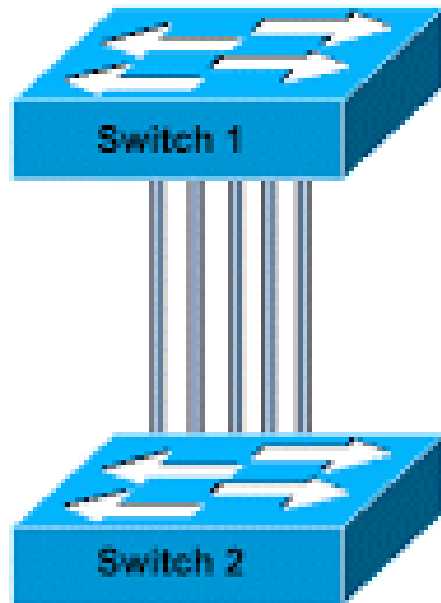
Allows multiple physical Ethernet links (Fast Ethernet or Gigabit Ethernet) to combine into one logical channel

It provides fault-tolerant high-speed links between Switches, Routers, and Servers.



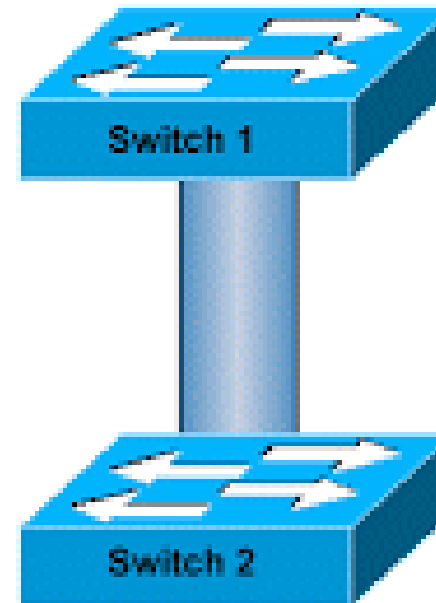
Physical View

Multiple ports are defined as being part of an EtherChannel group



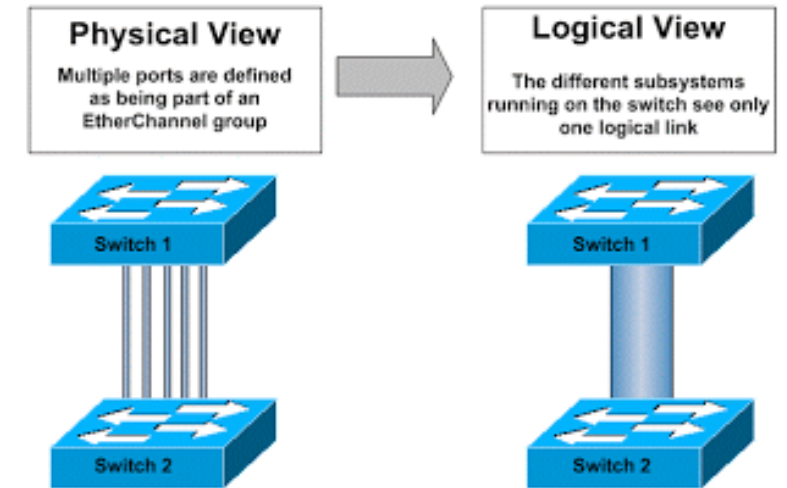
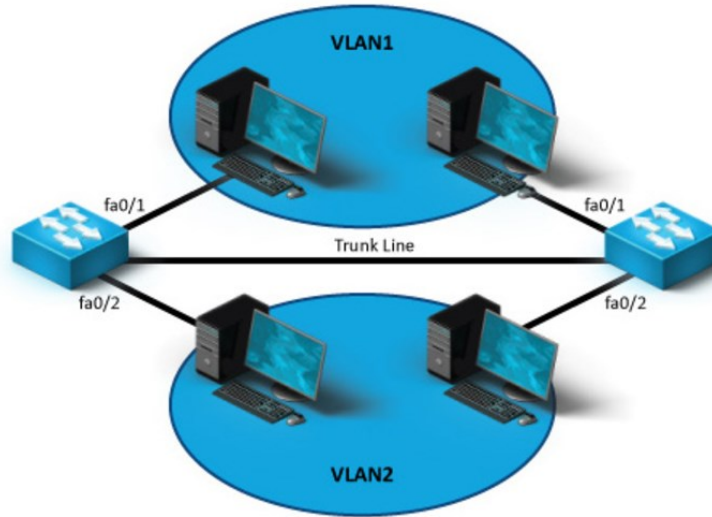
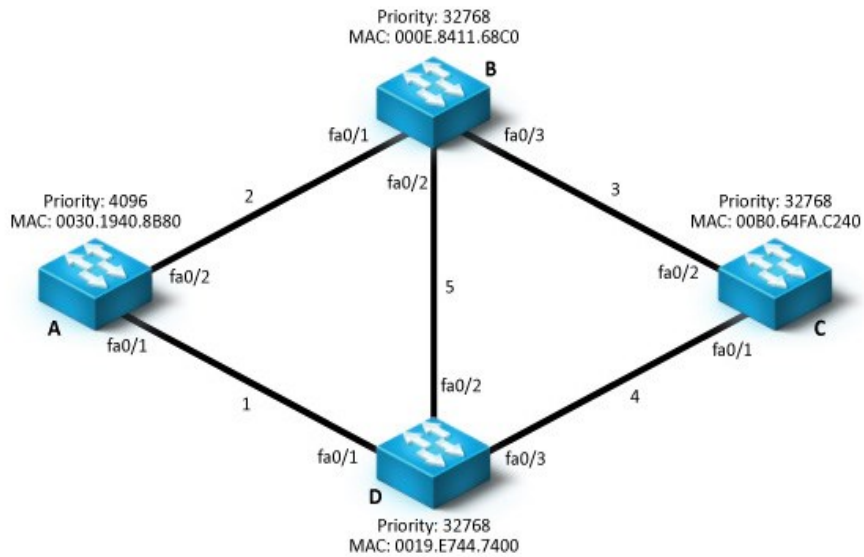
Logical View

The different subsystems running on the switch see only one logical link



So?

What is the difference between STP, Trunk, and EtherChannel?



Configuration options

There are two protocols used for negotiating EtherChannel and Link Aggregation. We can configure EtherChannel in three ways in Cisco Switches.

- **Port Aggregation Protocol (PAgP)** - Cisco Proprietary protocol
- **IEEE Link Aggregation Control Protocol (LACP)** - Industry Standard
- **Manual EtherChannel Configuration** - Without using any negotiation protocol listed above.

PAgP is a Cisco proprietary protocol. It can be used to negotiate EtherChannels **only between Cisco switches**.

Configuration

The ports which are going to be in EtherChannel must be in the shutdown state while configuring the EtherChannel to prevent loops and other related problems.

```
SW1#configure terminal
SW1 (config)#interface range gigabitEthernet 0/1 - 2
SW1 (config-if-range)#channel-group 1 mode desirable
SW1 (config-if-range)#channel-protocol pagp
SW1 (config-if-range)#end
SW1#exit
```

```
SW2#configure terminal
SW2 (config)#interface range gigabitEthernet 0/1 - 2
SW2 (config-if-range)#channel-group 1 mode desirable
SW2 (config-if-range)#channel-protocol pagp
SW2 (config-if-range)#end
SW2#
```

Configuration

```
SW1#configure terminal
```

```
SW1 (config)#interface range gigabitEthernet 0/1 - 2
```

```
SW1 (config-if-range)#channel-group 1 mode ?
```

active	Enable LACP unconditionally
auto	Enable PAgP only if PAgP device is detected
desirable	Enable PAgP unconditionally
on	Enable Etherchannel only
passive	Enable LACP only if LACP device is detected

Questions?
