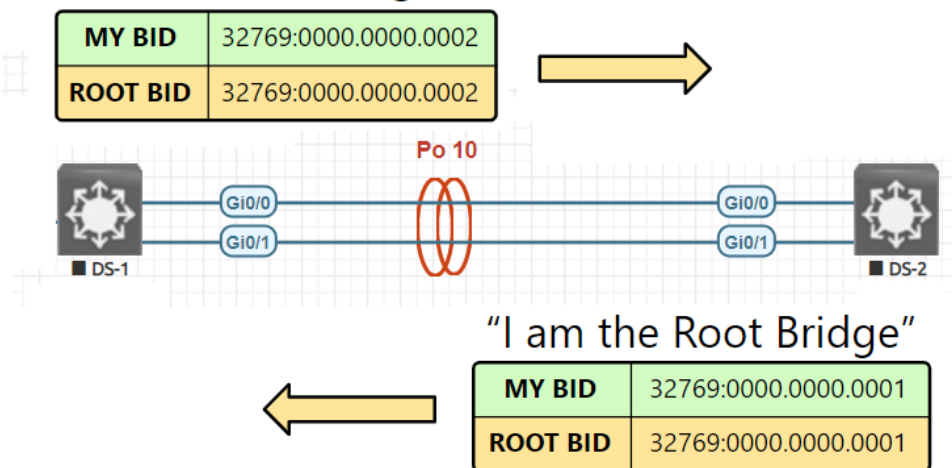


STP Operation:

- o All Cisco Switches in the network running Spanning Tree STP first elect a **Root Bridge**.
- o Root bridge acts as a point of reference for all other Cisco switches in the network.
- o All interfaces of the Root Bridge or Root Switch remain in the forwarding mode.
- o Once the root bridge or Switch is elected, all remaining switches select a single port.
- o That has the shortest path cost to reach the root bridge and marked it as **root port**.
- o After selecting root port, switches determine single designated port for each connection.
- o If multiple ports or interfaces are connected with the same switch or LAN segment.
- o Switch select only one port that has lowest path cost & marks it as the designated port.
- o Once the root port & designated ports are selected, the Switch blocks all remaining ports.
- o The Switches block all other ports to remove any possible or existing loop from network.

"I am the Root Bridge"



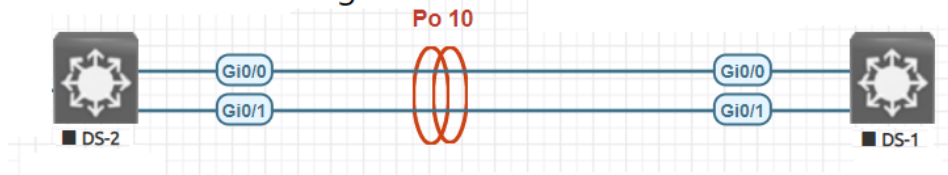
Two switches with default configurations that have been connected with each other and just powered on. The Spanning-Tree process starts with both switches electing and advertising themselves as Root Bridge of the topology. In the BPDU messages, they put their own BID value and the BID of the root bridge known to them at the moment. Each switch is basically saying "I am the Root".

when they exchange the first BPDU messages. When BPDU from DS-1 says that the Root Bridge has a value of 32769:0000.0000.0001. When DS-2 compares this value to the Root Bridge value known to him at the moment 32769:0000.0000.0002 - it is obviously lower. A BPDU message that has a lower Root BID value than your own is called a Superior BPDU. Once DS-2 gets this superior message, it stops advertising itself as root and starts forward this Superior BPDU. At the end of this process, all switches within the topology must agree that there is only one Root Bridge and it is the same from the perspective of each bridge.

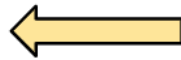
MY BID	32769:0000.0000.0002
ROOT BID	32769:0000.0000.0001



" DS-1 is the Root Bridge"



"I am the Root Bridge"



MY BID	32769:0000.0000.0001
ROOT BID	32769:0000.0000.0001

