

M³

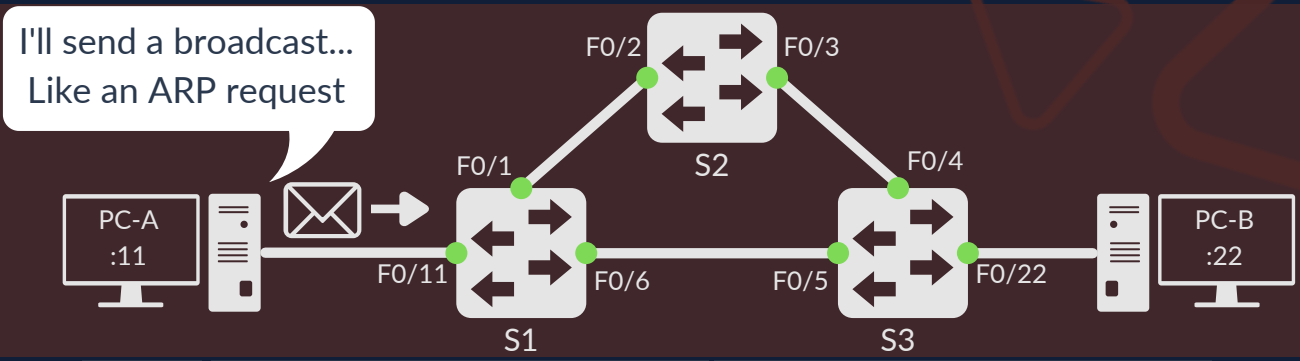
THE LOGIC BEHIND

Spanning Tree Protocol

THE PERFECT STORM

Part 1

A broadcast frame is sent from PC-A to broadcast mac address :FF. When S1 received this frame it will populate the Mac-Address-Table, linking PC-A's Mac Address with interface F0/11 where it is connected. S1 then duplicates the frame and "Floods" it out all active interfaces except the one it came from.



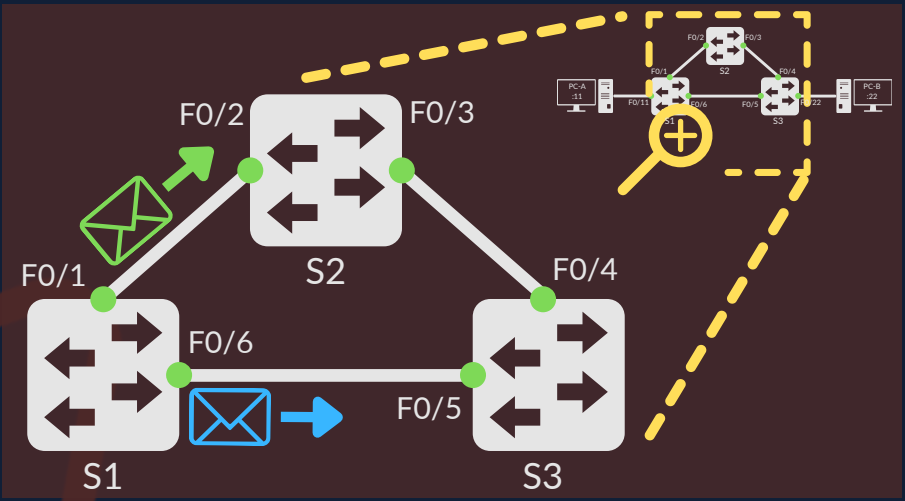
S1	Physical Address	Interface
	:11	F0/11

S2 and S3 receive the frames and populate their Mac-Address-Tables accordingly. Like S1 they will now duplicate the frame and flood them.

S1	Physical Address	Interface
	:11	F0/11

S2	Physical Address	Interface
	:11	F0/2

S3	Physical Address	Interface
	:11	F0/5



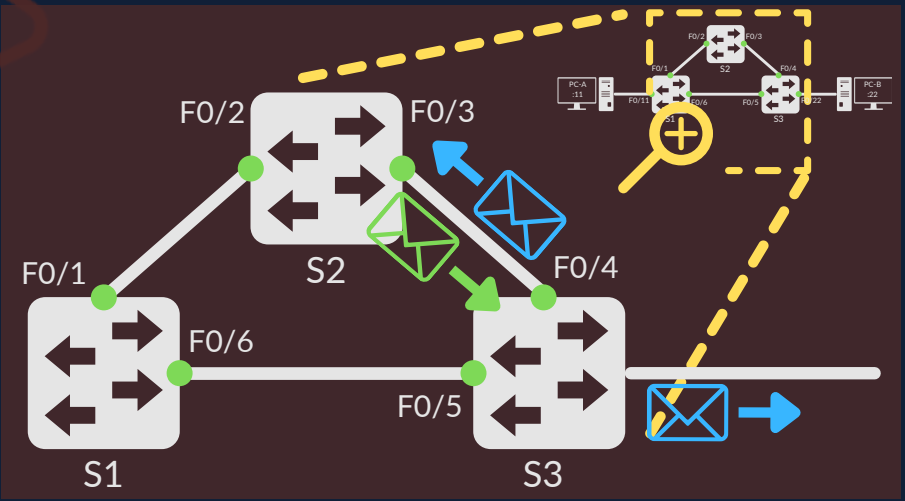
The problem with looped topologies now become clear. Focus on the **Green Frame** received by S3. The frame source MAC address is :11 (PC-A) and is received on F0/4.

S3 believes this latest information is the more accurate and updates its MAC table, removing the old entry in the process. S2 does the same, respectively. The frames are duplicated and flooded.

S1	Physical Address	Interface
	:11	F0/11

S2	Physical Address	Interface
	:11	F0/2
	:11	F0/3

S3	Physical Address	Interface
	:11	F0/5
	:11	F0/4

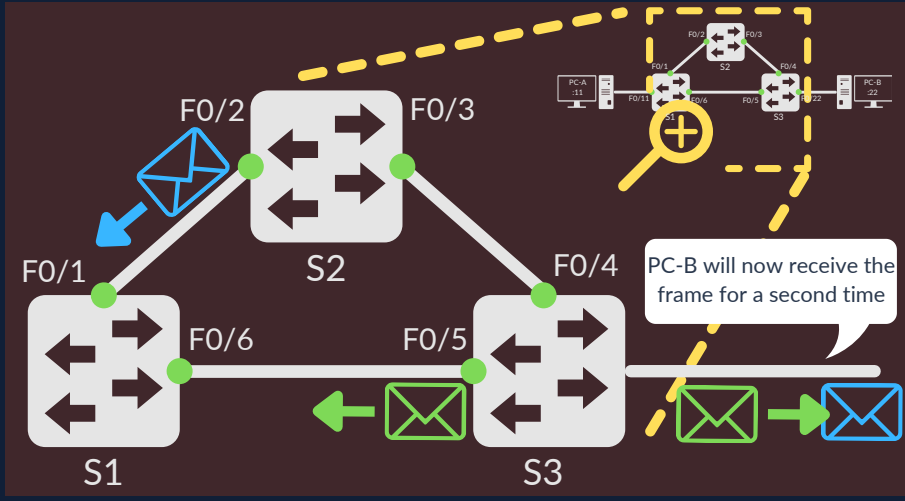


S1 receives copies of **Blue** and **Green** frames it originally duplicated. Assuming their arrival is **Blue** then **Green** the mac table will look like displayed. Mac Table instability is born. but the worst is yet to come...

S1	Physical Address	Interface
	:11	F0/11
	:11	F0/1
	:11	F0/6

S2	Physical Address	Interface
	:11	F0/3

S3	Physical Address	Interface
	:11	F0/4



S1 will receive the **Blue** frame (update the mac table) duplicate it and flood. Then receive the **Green** frame (update the mac table) duplicate it and flood. The whole ugly process start over

