

# PVLANS; STP (Part 1)

## Essentials: STP Basics, Root Bridge, port roles

### Agenda

- Pop Quiz (NB: moving to Wed as of next week)
- In The News: Sleep is actually essential for learning!  
<https://arstechnica.com/science/2017/01/rem-sleep-lets-the-brain-cut-and-strengthen-new-connections/>
- Take up any questions from previous days
- Cover: Private VLANs
  - See lecture notes from previous day for references
- Start: Ch 4 – STP

### Assigned Readings and Lab work

- Read FLG Ch 4 p. 119-179; due by *next* Fri @ 10am
- Cisco online test Ch 3, due by **Tue Jan 31 @ 11:59pm**
- Lab 4: PVLANS
- Pre-lab & post-lab as per the regular schedule

### STP Elections and Port roles

For all STP elections, the “best” value is always the **lowest** value.

To elect the **root bridge**, the following criteria are used in order:

1. Bridge ID (= switch priority [1st ]+ MAC address [2nd , tie breaker])

To elect the root port, the following criteria are used in order:

1. Accumulated Cost to Root bridge (= received in BPDU + cost of last link)
2. Bridge ID (of sender; = switch priority [1st ]+ MAC address [2nd ])
3. (A) Port ID (of sender; = port priority [1st ] + port number [2nd ])  
(B) Port ID (of local switch; = port priority + port number [tie breaker])

To elect a designated port on an inter-switch segment, use the following criteria:

1. Lowest cost to root (of each sender)
2. Bridge ID (of sender; = priority [1st ]+ MAC address [2nd ])
3. Port ID (of all segment; = port priority + port number [tie breaker])

... All ports not elected as Root port or Designated port go to the Blocking state!

### **IMPORTANT!**

Don't overlook potential traffic **on the link** between Designated & Blocking ports!

## Exercise

1. Identify the complete STP state.
2. Identify **how** each port receives its state

## Notes

Assume that:

- all costs are equal
- all priorities default
- all link costs are identical

