# STP LAB CONFIGURATION GUIDE

Cisco CCNA 200-301 Practical Series | Tasks 6.1 – 6.3



## 1. TOPOLOGY & DEFAULT IEEE PORT COST REFERENCE

| Switch Device | Uplink Interface 1 | Uplink Interface 2 | Default Base Priority | VLAN 1 Priority |
|---|---|---|---|---|
| **Switch 1 (SW1)** | GigabitEthernet 0/1 (to SW2) | GigabitEthernet 0/2 (to SW3) | 32,768 | 32,769 |
| **Switch 2 (SW2)** | GigabitEthernet 0/1 (to SW1) | GigabitEthernet 0/2 (to SW3) | 32,768 | 32,769 |
| **Switch 3 (SW3)** | GigabitEthernet 0/1 (to SW1) | GigabitEthernet 0/2 (to SW2) | 32,768 | 32,769 |

**IEEE STP Port Costs:** 10 Mbps = **100** | 100 Mbps = **19** | 1 Gbps = **4** | 10 Gbps = **2**

## 2. TASK 6.1: VERIFY THE DEFAULT ROOT BRIDGE

Run on all three switches to inspect the Bridge ID and locate the elected Root Bridge:

```
SW1> enable
SW1# show spanning-tree
! (Or condensed view: show spanning-tree summary)
! Note: "show spanning-tree vlan 1 root" is not supported on 2960; use "show
spanning-tree vlan 1"
```

> **Verification Criteria:** The winning switch displays `This bridge is the root` under Root ID, and all its active ports display Role **Desg** and Status **FWD**. Non-root switches display one **Root** port and one **Altn BLK** (Alternate/Blocked) port.

## 3. TASK 6.2: CHANGE THE ROOT BRIDGE (FORCE SW1)

Configure SW1 with a lower priority in increments of 4096 to guarantee it wins the Root Bridge election:

```
SW1> enable
SW1# configure terminal
SW1(config)# spanning-tree vlan 1 priority 4096
SW1(config)# exit
SW1# write memory

! Verification Command
SW1# show spanning-tree vlan 1
```

> **Expected Result:** SW1 priority becomes **4097** (4096 + VLAN 1). SW1 displays `This bridge is the root`, and both `Gig0/1` and `Gig0/2` become Designated Forwarding ports (`Desg FWD`).

## 4. TASK 6.3: MANIPULATE ROOT PORT VIA PORT COST

Inflate the direct link cost on SW2 (facing SW1) to force STP to re-elect its Root Port via SW3:

```
SW2> enable
SW2# configure terminal
SW2(config)# interface gigabitEthernet 0/1
SW2(config-if)# spanning-tree cost 100
SW2(config-if)# exit
SW2(config)# exit
SW2# write memory

! Verification Command
SW2# show spanning-tree vlan 1
```

## 5. QUICK CLI SUMMARY

| Action | Cisco IOS Command | Configuration Mode |
|---|---|---|
| Inspect STP Status | `show spanning-tree` | Privileged EXEC (#) |
| Force Root Bridge | `spanning-tree vlan 1 priority 4096` | Global Config (config)# |
| Adjust Port Cost | `spanning-tree cost 100` | Interface Config (config-if)# |
| Reset Port Cost | `no spanning-tree cost` | Interface Config (config-if)# |