A computer hardware system connected to a bridge

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I recently completed a lab focused on mastering the art of manually configuring a Spanning Tree Protocol (STP) root bridge for a specific VLAN. The objective was clear: learn how to designate a switch as the root bridge, overriding the default priority of 32,768 (plus the VLAN number) that STP uses to automatically select the root.

In this exercise, I dove into the process of setting the root bridge manually on a Cisco switch, ensuring the Layer 2 network behaves deterministically—something that’s critical for predictable performance and stability. By default, STP elections can be a bit of a wildcard, so taking charge of this configuration felt empowering. It’s a fundamental skill that every network engineer should have in their toolkit, and I enjoyed seeing how a small tweak in priority can shape the entire topology.

I began by setting up the foundation for the lab, focusing on Switch 1 (Sw1) and Switch 2 (Sw2). Following the topology, I configured hostnames on both switches to clearly identify them in the network. With that done, I moved on to creating the VLANs specified in the topology. I carefully entered each VLAN into the configuration on both switches, ensuring they were properly defined and ready for the next steps. It was a straightforward start, but it set the stage for the more detailed work ahead.

Next, I worked on enabling VLAN support across the switches. I configured the VLANs on both Sw1 and Sw2, then double-checked to confirm they were visible on each device, ensuring consistency across the network. To connect the switches, I manually set one of the interfaces to trunk mode on one side, allowing VLAN traffic to flow between them. This step required a bit of attention to detail, but once I saw the VLANs propagating correctly, I knew the trunk was doing its job.

With the VLANs and trunking in place, I shifted focus to configuring the Spanning Tree Protocol (STP) root bridges. On Sw1, I set it as the root bridge for VLANs 2010 and 2030, manually adjusting the priority to the second non-zero value—typically 4096—to ensure it took precedence. Then, on Sw2, I did the same for VLANs 2020 and 2040, assigning it the same priority level for those VLANs. This deliberate split of root bridge responsibilities gave me control over the Layer 2 topology, making the network’s behavior more predictable and aligned with the lab’s goals.

Finally, I wrapped up by verifying everything I’d configured. I ran a series of “show” commands—likely show spanning-tree, show vlan brief, and show interfaces trunk—to check that the VLANs were active, the trunk was operational, and the root bridge assignments were correct. Seeing the output confirm Sw1 as the root for VLANs 2010 and 2030, and Sw2 for VLANs 2020 and 2040, was satisfying. It was a great way to tie the lab together, ensuring every piece of the configuration worked as intended.

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NOTE: The show spanning-tree vlan <vlan number> does not work in packet tracer. This however will work on a physical device; but the concept remains the same.