

IEEE 802.1 standard (STP)

The IEEE 802.1 standard (STP) is used to create a loop-free Layer 2 network.

This protocol uses the bridge ID (a field inside BPDU packets) to elect root bridge. It is 8 bytes in length. The first two bytes are the Bridge Priority, which is an integer in the range of 0 – 65,535 (default is 32,768). The last six bytes are a MAC address supplied by the switch.

In STP, lower bridge ID values are preferred. To compare two bridge IDs, the priority is compared first. If two bridges have equal priority, then the MAC addresses are compared.

For example, if switch A (MAC=0800.1100.1111) and B (MAC=0800.1100.2222) both have a priority of 10, then switch A will be selected as the root bridge because it has lower MAC.