

# STP Protocols

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This past week I learned more about the different protocols that are used to implement the Spanning Tree network architecture to ensure that Layer 2 loops and broadcast storms are avoided. Some of the protocols include Per-VLAN Spanning Tree+ (PVST+), Rapid Spanning Tree Protocol (RSTP), Rapid PVST+, Multiple Spanning Tree Protocol (MSTP), and Multiple Spanning Tree (MST). Each of the protocols has their own advantages and uses. The common STP is based on the IEEE 802.d standard, the Cisco PVST+ is as well. PVST+ is the Cisco proprietary multi VLAN spanning tree protocol, this protocol allows each VLAN to have a designated root port which aids with load balancing increasing the efficiency of the network. RSTP (Rapid Spanning Tree Protocol) uses the IEEE 802.1w standard and is an upgrade to the traditional Spanning Tree Protocol in that it speeds up the initialization process reducing it by 50% or more. Rapid PVST+ is Cisco's proprietary version of RSTP which combines the benefits of the load balancing from PVST+ with the speedy start of RSTP. MSTP allows multiple VLANs to combine together on one spanning-tree instance. MST is the Cisco implementation of the IEEE 802.1s standard, MSTP which allows up to 16 instances of RSTP.