



STP Versions

Version / Feature	STP (Legacy STP / CST)	PVST	PVST+	RSTP	RPVST+	MST
Algorithm	Legacy ST	Legacy ST	Legacy ST	Rapid ST	Rapid ST	Rapid ST
Standard	802.1D (1998)	Cisco	Cisco	802.1w (2004)	Cisco	802.1s, 802.1Q (2003 / 2005)
No. of STP Instances	1x Instance	One instance per vlan	One instance per vlan	1x Instance	One instance per vlan	Configurable
Trunking types supported	N/A	ISL	802.1Q, ISL	N/A	802.1Q, ISL	802.1Q, ISL
Failover Timer	30–50 seconds	6 seconds (3 Hello intervals)	<small>www.networkwalks.com</small>	6 seconds (3 Hello intervals)		6 seconds (3 Hello intervals)

STP Link Costs

Data Rate	STP Cost	RSTP Cost
4 Mbps	250	5,000,000
10 Mbps	100	2,000,000
16 Mbps	62	1,250,000
100 Mbps	19	200,000
1 Gbps	4	20,000
2 Gbps	3	10,000
10 Gbps	2	2,000
100 Gbps	N/A	200
1 Tbps	N/A	20

STP Timers (Intervals)

Hello	Forward Delay	Max Age
<i>BPDU sending Interval</i>	<i>Listening + Learning time</i>	<i>Time before Br Port saves its CBPDU info</i>
Range: 1-10s (Def= 2 sec)	Range: 4-30s (Def= 15 sec)	Range: 4-60s (Def= 20 sec)

STP Toolkit (Features)

STP Convergence Optimization Features

Port Fast	Bypasses Listening+Learning states (Recommended on Access Ports only)
Uplink Fast	Provides fast convergence (3-5s) after a direct link failure
Backbone Fast	Provides fast convergence (by Max_Age) after an indirect link failure

STP Filter Features

BPDU Filter	Stops a port from sending/receiving BPDUs
BPDU Guard	Shutowns a PortFast enabled port if a BPDU is received
Root Guard	Prevents external SWs from becoming Root

STP Loop Prevention

Loop Guard	Prevents an alternate or root port from becoming designated in the absence of BPDUs
UDLD (Unidir. Link Detection)	Monitors the physical configuration of the cables and detect unidirectional links

