



TeraRouting Tester™ Software Module

Spanning Tree

Product Overview

The Spanning Tree software module includes the emulation of Spanning Tree Protocol (STP) and Rapid Spanning Tree Protocol (RSTP). This module supports STP/RSTP functional and performance tests for Layer 2 loop prevention and convergence. While the appropriate messaging is emulated, Layer 2 traffic can also be generated to verify the device under test's port state and forwarding performance.

Key Features

- Allows spanning tree versions to be run concurrently with each other and with other protocols to test behavior in a realistic system environment
- Simulates millions of unique Layer 2 hosts to populate the DUT's MAC address table
- Provides real-time statistics and graphical result screen presentation to support accurate characterization of transient conditions
- Control plane capture of transmitted and received protocol messaging, including export to protocol decoder for detailed troubleshooting and analysis
- Event log to see detailed protocol exchange without capture and decode
- Flap schedule events supported for functional and negative testing
- Tests with Layer 2 and Layer 3 broadcast, unicast and multicast traffic
- Integrated Layer 2 traffic wizard

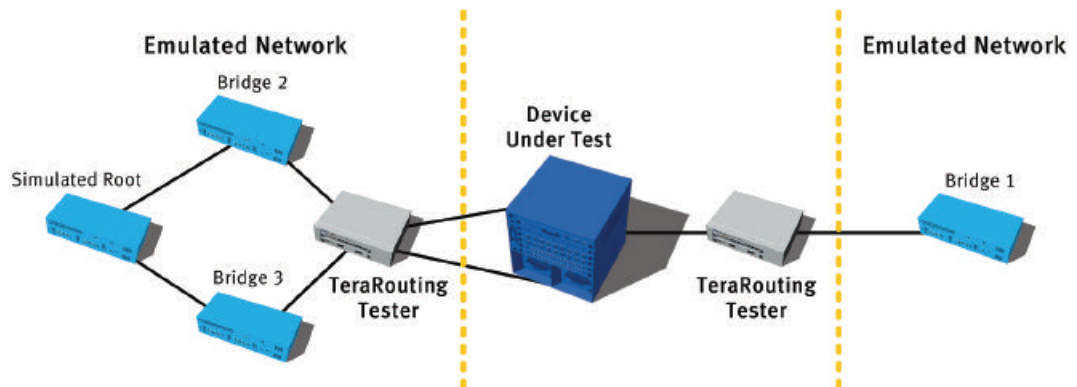
STP/RSTP Features

- Emulate multiple bridges on a single LAN segment
- Root bridge emulation
- Non-root bridge emulation
- Topology simulation emulating a root bridge behind a non-root bridge
- Test and verify root bridge election
- Verify the device under test's ability to process BPDUs
- Modify and test changing timing parameters including: Hello Time, Max Age, Forward Delay and Hold Count
- Stop transmitting BPDUs to verify the DUT recovers and begins to transmit BPDUs
- Monitor BPDU exchange with real-time event log
- Port state emulation
- Port role emulation
- Test the Spanning Tree Algorithm (STA)
- Simulate topology changes to verify redundant paths
- Verify STP/RSTP convergence
- Emulate RSTP point-to-point link type for full duplex Ethernet
- Test RSTP's backward compatibility with STP
- Capture and analyze control plane and data plane traffic
- Test with Layer 2 and Layer 3 broadcast, unicast and multicast traffic
- Send thousands of unique Layer 2 streams to populate the DUT's MAC address table
- Real-time statistics and graphical result screens
- Track results based on per port, per stream, or per user specified group
- Easy to use GUI
- GUI to script export functionality

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Related Standards

- IEEE 802.1D, Spanning Tree Protocol
- IEEE 802.1W, Rapid Spanning Tree Protocol

Supported Modules

Module	Description
LAN-3301A *	10/100/1000Base-T Ethernet, Copper, 2-port, TeraMetrics
LAN-3302A *	10/100Base-TX Ethernet, Copper, 2-port, TeraMetrics
LAN-3311A *	1000Base-X Ethernet, GBIC, 2-port, TeraMetrics ATM OC-3c/OC-12c (STM-1c/STM-4c), 2-port, single mode, 1310nm, TeraMetrics
LAN-3321A	10/100/1000 Mbps and Gigabit Ethernet Fiber, 2-port, TeraMetrics XD
LAN-3325A	10/100/1000 Mbps and Gigabit Ethernet Fiber, 4-port, TeraMetrics XD
LAN-3327A	10/100/1000 Mbps and Gigabit Ethernet Fiber, 1-port, TeraMetrics XD
XLW-3721A	10GBase Ethernet, Optical, XENPAK, 1-port, 2-slot, TeraMetrics

*Indicates end of life modules

Requirements

- TeraRouting Tester software (SWF-1230A)
- A SmartBits® 600x or 6000x chassis and the appropriate modules
- A Pentium™ or greater PC running Windows® 2000/NT/XP, with mouse and color monitor

Ordering Information**SWF-1230A**

TeraRouting Tester with RIP software module

SWF-1231A

OSPF software module for TRT

SWF-1232A

IS-IS software module for TRT

SWF-1233A

MPLS (RSVP-TE, LDP, VPN) software module for TRT

SWF-1234A

BGP software module for TRT

SWF-1235A

IPv6 software module for TRT

SWF-1236A

MultiCast (IGMP, MLD, PIM) software module for TRT

SWF-1237A

Spanning Tree software modules for TRT

SWF-1239A

All available software modules for TRT

SWF-1255A

SmartBits API and Scripting Automation Interface

Spirent Global Services

Spirent Global Services provides a variety of professional services, support services and education services — all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at www.spirentcom.com/gs or contact your Spirent sales representative.

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