



TeraRouting Tester™ Software Module MPLS

Product Overview

The MPLS routing protocol software module works together with all of the basic SmartBits TeraRouting Tester (TRT) features, including the flap scheduler, traffic generator, and integrated results. Both MPLS signaling protocols—RSVP-TE and LDP—are supported. MPLS VPNs are also fully supported. A configuration wizard is provided to simplify the creation of complex network topologies. All tests can be conducted in a fully interactive mode.

Key Features

- Supports RSVP-TE and LDP
- Supports 2547bis, 6PE, Martini (PWE) VPNs, and K. Kompella draft VPLS
- Supports VPLS over LDP or BGP; K. Kompella implementation uses BGP
- Generates up to 64,000 LSPs
- All common attributes and TLVs are configurable
- Interactive configuration and testing
- Real-time results

LDP Features

- 250 LDP sessions per module
- Up to 64,000 LSPs per module
- Direct and targeted hellos
- Downstream unsolicited and downstream on demand LSPs
- Configurable hello and keep alive timers
- Implicit and explicit null labels
- VC encapsulation for Martini and VPLS
- Incoming and outgoing LSPs

RSVP-TE Features

- 5000 RSVP-TE sessions per module
- Ingress and egress tunnels
- Implicit and explicit null labels
- Explicit routing support

- Traffic engineering parameters
- Configurable hello interval
- Configurable setup and hold priorities
- RSVP option flag support
- Optional include or exclude affinities

MPLS VPN Features

- Martini-draft Layer-2 VPNs
- Virtual Private LAN Service (VPLS)
- K. Kompella Draft Virtual Private LAN Service (VPLS)
- RFC 2547bis Layer-3 VPNs
- Layer-3 IPv6 VPNs
- Thousands of emulated VRFs and VCs
- Emulates 1000 Layer-3 PE routers
- Emulates 250 Layer-2 PE routers
- Easy-to-use configuration wizards

MPLS Real-time and Final Results

- LSP labels
- LSP setup latency and rate
- LSP setup mode
- VPN setup and throughput
- Control traffic (hellos, keep alives, etc.)
- Data traffic throughput and latency
- Comprehensive event log
- Tabular and graphical results

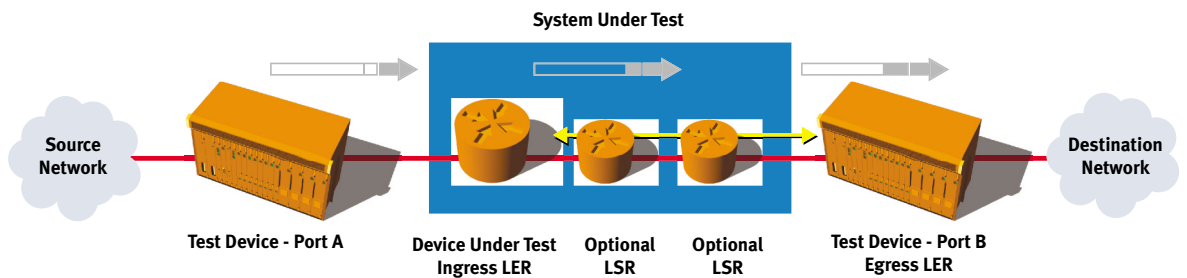
RELATED RFCs and Drafts

- RFC 2547bis – MPLS BGP VPNs
- RFC 2858 – MultiProtocol BGP
- RFC 3031 – MPLS Architecture
- RFC 3036 – LDP
- RFC 3209 – RSVP for MPLS
- draft-martini-l2circuit-encap-mpls-04
- draft-martini-l2circuit-trans-mpls-09
- draft-lasserre-vkompella-ppvnp-vpls-04
- draft-ietf-l2vpn-vpls-bpp-00
- draft-ietf-l2vpn-vpls-bgp-02

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TeraRouting Tester MPLS applications



Analyze | Assure | Accelerate™

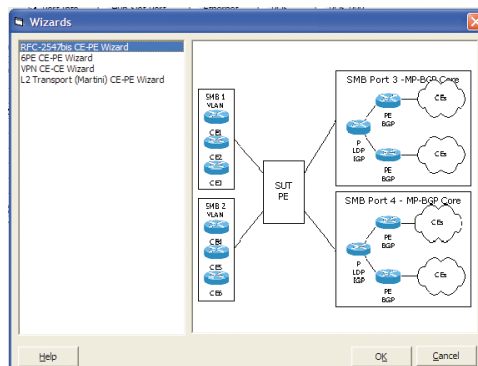
Supported Modules

Module	Description
ATM-3451A	ATM OC-3c (STM-1c), 2-port, multi-mode, 1300nm, TeraMetrics
ATM-3451As	ATM OC-3c (STM-1c), 2-port, single mode, 1310nm, TeraMetrics
ATM-3453A	ATM OC-3c/OC-12c (STM-1c/STM-4c), 2-port, multi-mode, 1300nm, TeraMetrics
ATM-3453As	ATM OC-3c/OC-12c (STM-1c/STM-4c), 2-port, single mode, 1310nm, TeraMetrics
LAN-3301A	10/100/1000Base-T Ethernet, Copper, 2-port, TeraMetrics
LAN-3302A	10/100Base-T Ethernet, Copper, 2-port, TeraMetrics
LAN-3306A	10/100Base-T Ethernet, Copper, 4-port, TeraMetrics XD
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
POS-3505As	POS OC-48c (STM-16c), 1-port, single mode, 1310nm, TeraMetrics
POS-3505Ar	POS OC-48c (STM-16c), 1-port, single mode, 1550nm, TeraMetrics
POS-3511A	POS OC-3c/OC-12c (STM-1c/STM-4c), 2-port, multi-mode, 1300nm, TeraMetrics
POS-3511As	POS OC-3c/OC-12c (STM-1c/STM-4c), 2-port, single mode, 1310nm, TeraMetrics
POS-3519As	POS OC-192c (STM-64c), 1-port, 2-slot, single mode, 1310nm, TeraMetrics
POS-3519Ar	POS OC-192c (STM-64c), 1-port, 2-slot, single mode, 1550nm, TeraMetrics
XFP-3731A	10GBase Ethernet, XFP MSA, 1-slot, TeraMetrics
XLW-3721A	10GBase Ethernet, XENPAK MSA, 1-port, 2-slot, TeraMetrics

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Requirements

- TeraRouting Tester software (SWF-1230A or SWF-1239A)
- A SmartBits® 600x, or 6000x chassis with the appropriate hardware modules
- A Pentium™ or greater PC running Windows® 2000/NT/XP, with mouse and color monitor

Ordering Information

SWF-1230A

TeraRouting Tester (TRT) with RIP software module

SWF-1231A

OSPF software module for TRT

SWF-1232A

IS-IS software module for TRT

SWF-1233A

MPLS software module for TRT

SWF-1234A

BGP software module for TRT

SWF-1235A

IPv6 software module for TRT

SWF-1236A

Multicast software module for TRT

SWF-1237A

Spanning Tree (STP/RSTP, PVST+/RPVST+) software module for TRT

SWF-1239A

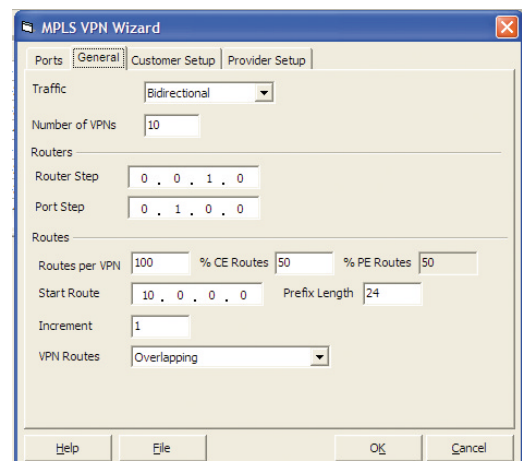
All available software modules for TRT

SWF-1255A

SmartBits Automation and Scripting Interface

Spirent Global Services

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TeraRouting Tester MPLS setup and test result windows