# TeraRouting Tester™ Software Module
# OSPF

## Product Overview

The OSPF routing protocol software module works together with all the basic TeraRouting Tester (TRT) features such as the flap scheduler, traffic generator, and integrated results. Advanced functional and performance testing can be conducted in a fully interactive mode, complete with real-time results. Tests can also be scripted and run automatically. A topology editor provides a visual tool for quickly simulating complex networks. Comprehensive IPv6 support is also available with the new OSPFv3 software.

### LSA Support

- Router LSA – Type 1
- Network LSA – Type 2
- Summary LSA – Type 3
- ASBR Summary LSA – Type 4
- External – Type 5
- NSSA – Type 7
- Link – Type 8
- Intra-area Link LSA - Type 9
- Area-local Opaque LSA – Type 10

### OSPF Adjacency Features

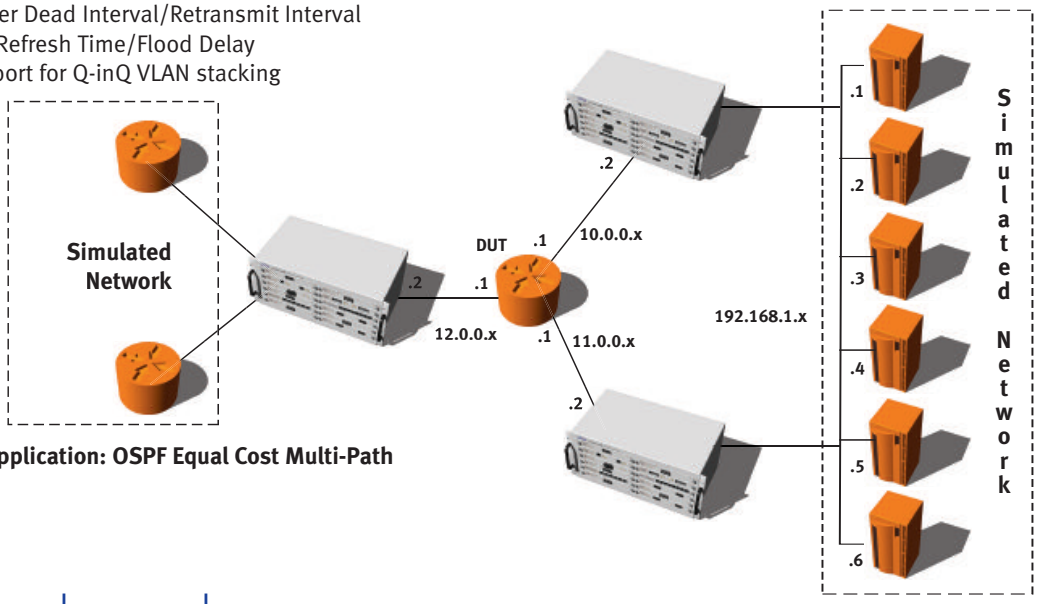
- 100 OSPF adjacencies per port (400 with VLAN)
- 80 OSPFv3 adjacencies per port (350 with VLAN)
- VLAN IDs and priority per adjacency
- ATM VCCs per adjacency
- Emulated adjacencies can be DR, BDR, or None
- IP Address
- Area ID and Router ID
- Cost, MTU, and Hello Interval
- Router Priority and Options
- Router Dead Interval/Retransmit Interval
- LSA Refresh Time/Flood Delay
- Support for Q-inQ VLAN stacking

### OSPF LSA Generator

- Quickly configure logical OSPF tree-like topologies on every adjacency
- Area Types: Regular, Stub, Stub No Summary, NSSA, NSSA No Summary
- Number of router LSAs per area
- Maximum number of point-to-point and broadcast interfaces
- Maximum number of transit networks and routers per transit network
- Number of stub networks and distribution of addresses
- Number of summary networks and distribution of addresses and % of duplicate
- Number of external networks and distribution addresses and % of duplicate
- Can select generated IP address range
- Can specify age, sequence number, and checksum (good/bad)
- All options for each LSA block will have useable defaults

### Router LSA (Type 1) Options

- Supports up to 10,000 router LSAs per module
- Supports up to 100 links per router LSA
- Can copy/paste and duplicate one or more LSAs/links
- Router ID and router options
- Router Type: Virtual Link, Area Border Router, AS Boundary Router
- Supports the following link types: Transit Network, Point-to-Point, Stub Network, Virtual Link




**Application: OSPF Equal Cost Multi-Path**

*TeraRouting Tester OSPF applications*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**Network LSA (Type 2) Options**

- Supports up to 10,000 network LSAs per module
- Supports up to 100 links per network LSA
- Can copy/paste and duplicate one or more LSAs/links
- Router ID; each router ID attached to the network
- DR IP address of the network
- Netmask of the network

**Summary LSA (Type 3) Options**

- Supports millions of summary LSAs
- Can copy/paste and duplicate one or more LSAs
- Router ID and prefix length
- Number of LSAs, start IP address, and Increment value for LSA range
- Metric for LSA range

**ASBR-Summary LSA (Type 4) Options**

- Can copy/paste and duplicate one or more LSAs
- Advertising router ID and ASBR router ID
- Metric

**External/NSSA LSA (Type 5/7) Options**

- Supports millions of external/NSSA LSAs
- Can copy/paste and duplicate one or more LSAs
- Router ID and prefix length
- Number of LSAs, start IP Address, and increment value for LSA range
- Metric and metric type for LSA range
- Forwarding address and route tag

**Area-local Opaque LSA (Type 10) Options**

- Router ID and router options
- TLV Type: router or link
- Opaque ID

**OSPF Flap Events**

- Break/Restore physical link
- Stop/Resume Hellos (all or individual ports/routers)
- Age summary LSAs (all or individual areas)
- Age ASBR summary LSAs (all or individual areas)
- Age external LSAs (all or individual areas)
- Age/Remove router LSAs
- Age/Remove network LSAs
- Re-advertise LSAs (all or individual areas)

**OSPF Real Time and Final Results**

- Port/Router
- Received/Sent Hellos
- Received/Sent Database Descriptors
- Received/Sent Router LSAs
- Received/Sent Network LSAs
- Received/Sent Summary LSAs
- Received/Sent ASBR-Summary LSAs
- Received/Sent External LSAs
- Received/Sent NSSA LSAs
- Received/Sent Requests
- Received/Sent Acks

## Related RFCs

- RFC 1587 – Describes the OSPF NSSA option
- RFC 2328 – Describes OSPF Version 2
- RFC 2329 – OSPF Standardization Report
- RFC 2740 – OSPF Version 3 (for IPv6)

## 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 |

SPIRENT Communications

## 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 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) software module for TRT

**SWF-1239A**

All available software modules for TRT

**SWF-1255A**

SmartBits Automation

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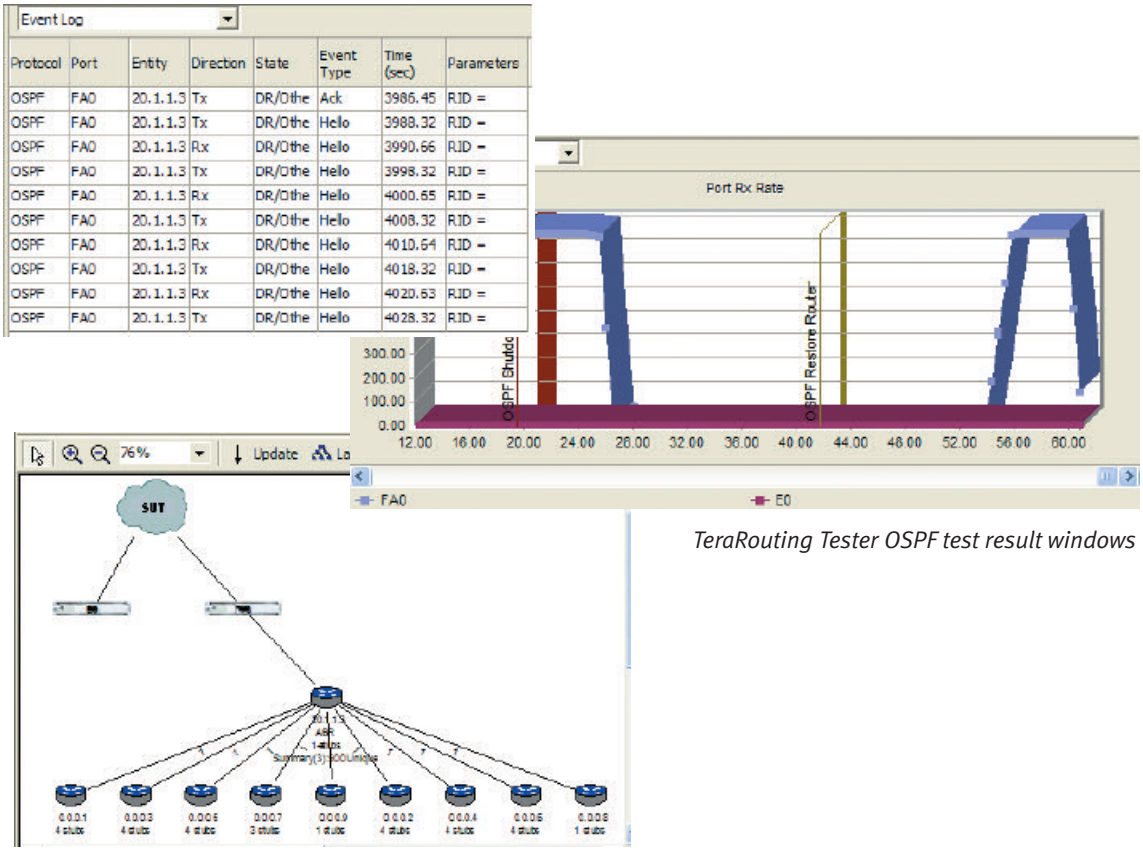
Spirent Global Services provides a variety of professional services, support services and education services — all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at www.spirentcom.com/gs or contact your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




*TeraRouting Tester OSPF test result windows*

*TeraRouting Tester OSPF topology diagram*

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