



TeraRouting Tester™ Software Module

BGP

Product Overview

The BGP routing protocol software module works together with all the basic TeraRouting Tester (TRT) features such as the Flap Scheduler, Traffic Generator, and integrated results. Both BGP-4 and BGP-4+ are supported. Key features include:

- Millions of routes
- Route generator with Internet prefix length distribution
- Confederations and route reflectors are supported
- All common attributes are dynamically configurable

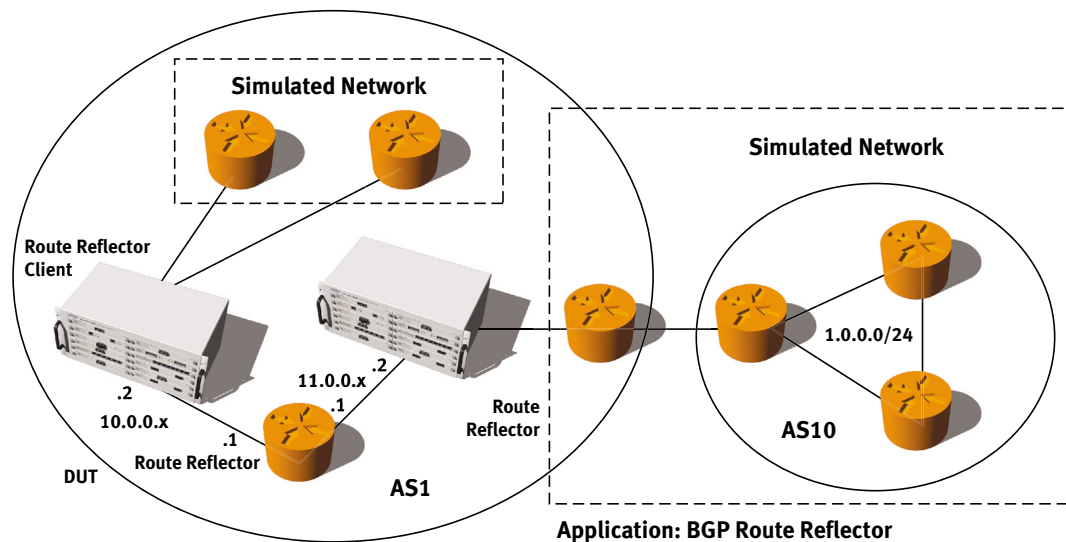
BGP Session Features

- 1500 BGP-4 or 1000 BGP-4+ peer sessions per port
- VLAN IDs and priority per port
- E-BGP, I-BGP, and confederation sessions are supported
- AS numbers are configurable
- Multi-hop sessions are supported with unique gateways
- TTL is configurable per session

- QoS is configurable for all BGP sessions
- Stagger start on sessions is configurable
- Each session can optionally only listen for starts
- Hold timer and Keep Alive timers are configurable
- Address Family Indicator (AFI) is configurable
- Routes per update are configurable
- Inter-update delay is configurable
- Support for MD5 authentication
- Support for Q-in-Q VLAN stacking

BGP Route Generator

- Quickly generates millions of routes
- Select prefix distribution: Internet, Even, or Exponential
- Select prefix range (1 – 128)
- Optionally generate duplicate routes on other ports with longer AS or higher local preference
- Optionally weight the routes across ports
- Optionally prevent route aggregation
- Can select generated IP address range
- All attributes and options for each route block will have useable defaults



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TeraRouting Tester BGP applications

BGP Route Block Options

- Can copy/paste and duplicate one or more route blocks
- Prefix length
- Number of routes
- Start route IP address
- Increment value for IP address range
- Origin attribute
- Segment type attribute
- AS path attribute (up to 25 AS numbers in each path)
- Next hop attribute
- MED attribute
- Local preference attribute
- Atomic aggregate
- Aggregate IP address and AS
- Community attribute list
- Route reflectors with originator and cluster list

BGP Flap Events

- Break physical link
- Restore physical link
- Break TCP session (all or individual sessions)
- Restore TCP session
- Stop Keep Alive (all or individual sessions)
- Resume Keep Alive
- Withdraw routes (any % of different categories)
- Re-advertise routes

BGP Real Time and Final Results

- Session IP addresses
- Session state
- Total advertised routes
- Total withdrawn routes
- Received advertised routes
- Received withdrawn routes
- Sent/Received notifications
- Sent/Received updates
- Sent/Received Keep Alives
- Sent/Received opens
- Routes in last updates
- Outstanding routes
- Sent/Received error and sub-error codes with text

Related RFCs

- RFC 1771 – Describes BGP4, the current version of BGP
- RFC 1997 – Describes BGP4 communities
- RFC 2796 – Describes BGP4 route reflection
- RFC 2842 – Describes BGP4 capabilities advertisement
- RFC 2858 – Multiprotocol Extensions for BGP
- RFC 3065 – Describes BGP4 autonomous systems confederations

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

Requirements

- TeraRouting Tester software (SWF-1230A)
- 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 (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 (STP/RSTP, PVST+/RPVST+) software module for TRT

SWF-1239A

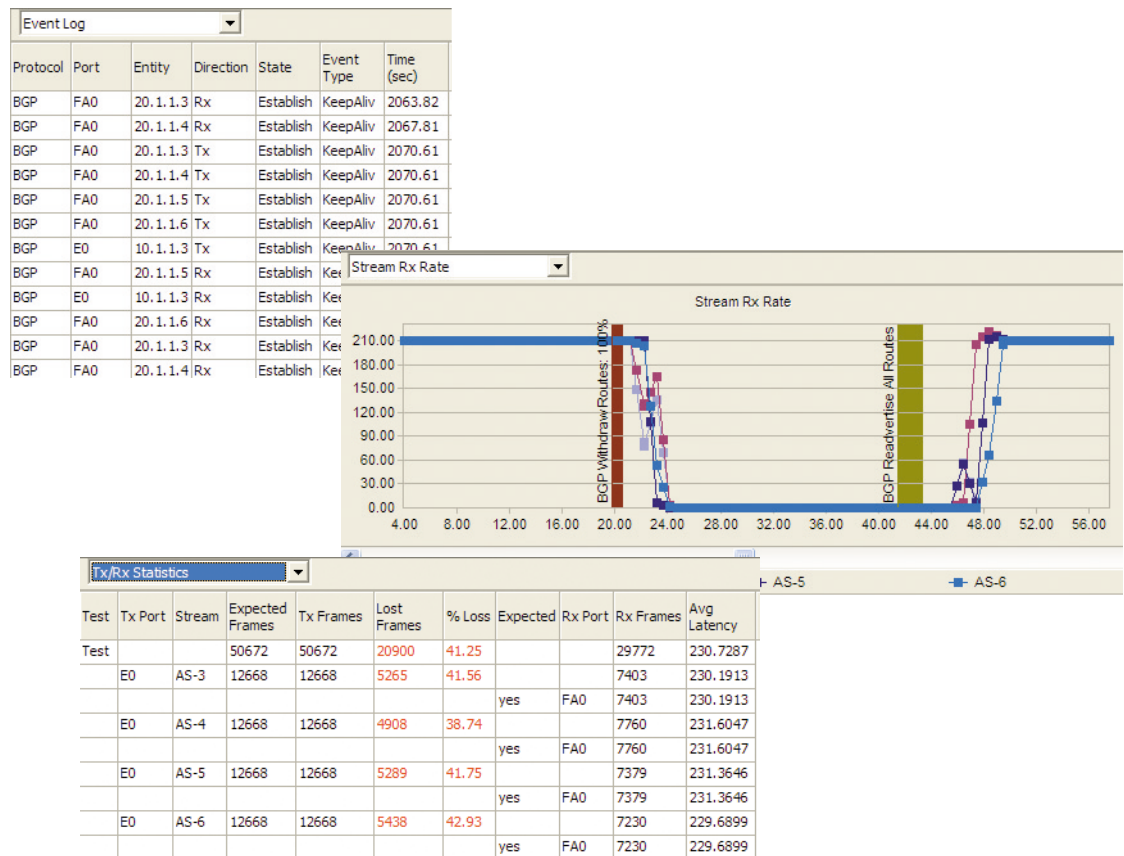
All available software modules for TRT

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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