## 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 configurable

### BGP Session Features

- 600 BGP-4 or 200 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

### 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

### 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)
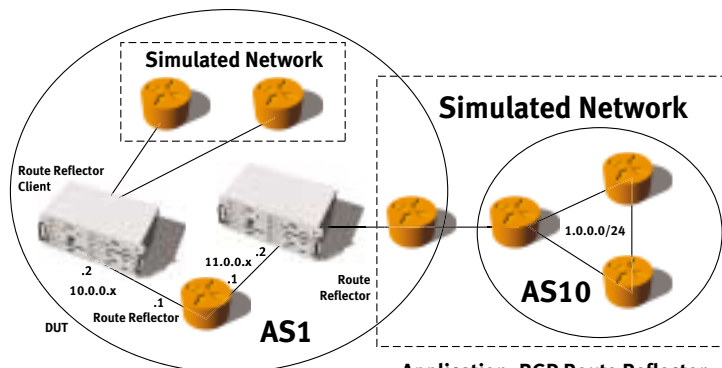- Re-advertise Routes

### 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

**Application: BGP Route Reflector**

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*TeraRouting Tester BGP applications*

- Sent/Received Opens
- Routes in last updates
- Outstanding Routes
- Sent/Received Error and Sub-error codes with text

### Related RFC's

- 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 3065 – Describes BGP4 autonomous systems confederations

### Supported Modules

| Module | Description |
|---|---|
| LAN-3301A | 10/100/1000Base-T Ethernet, Copper, 2-port, TeraMetrics module |
| LAN-3302A | 10/100Base Ethernet, Copper, 2-port, TeraMetrics module |
| LAN-3311A | 1000Base Ethernet, GBIC, 2-port, TeraMetrics module |
| POS-3505As | POS OC-48c, 1-port, single mode, 1310nm, TeraMetrics module |
| POS-3505Ar | POS OC-48c, 1-port, single mode, 1550nm, TeraMetrics module |
| POS-3511A | POS OC-3c/OC-12c, 2-port, multi-mode, 1300nm, TeraMetrics module |
| POS-3511As | POS OC-3c/OC-12c, 2-port, single mode, 1310nm, TeraMetrics module |
| POS-3519As | POS OC-192c, 1-port, 2-slot, single mode, 1310nm, TeraMetrics module |
| POS-3519Ar | POS OC-192c, 1-port, 2-slot, single mode, 1550nm, TeraMetrics module |
| XLW-3721A | 10GBase Ethernet Optical, XENPAK, 1-port, 2-slot, TeraMetrics module |

### Requirements

- TeraRouting Tester software (SWF-1230A)
- An SMB-600 or SMB-6000B chassis.
- An IBM or compatible Pentium™ PC running Windows® 98/2000/NT, with mouse and color monitor.
- Microsoft Excel 97 or Microsoft Excel 2000.

### 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-1234A**
BGP software module for TRT

**SWF-1235A**
IPv6 software module for TRT

**SWF-1239A**
All available software modules for TRT

**SWF-1255A**
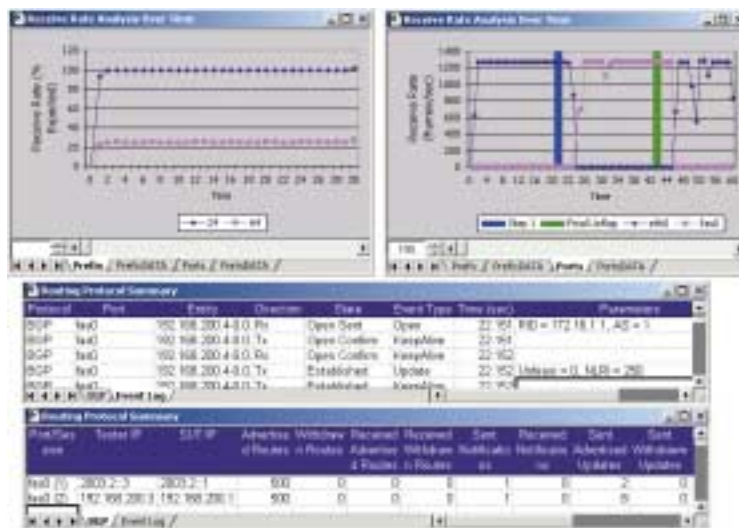SMB API and Scripting Automation Interface

**SUS-SMB**
12-month Software Update Support Service

*TeraRouting Tester BGP test results screens*

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