



SPIRENT TESTCENTER

UNICAST ROUTING BASE PACKAGE—RIP PROTOCOL

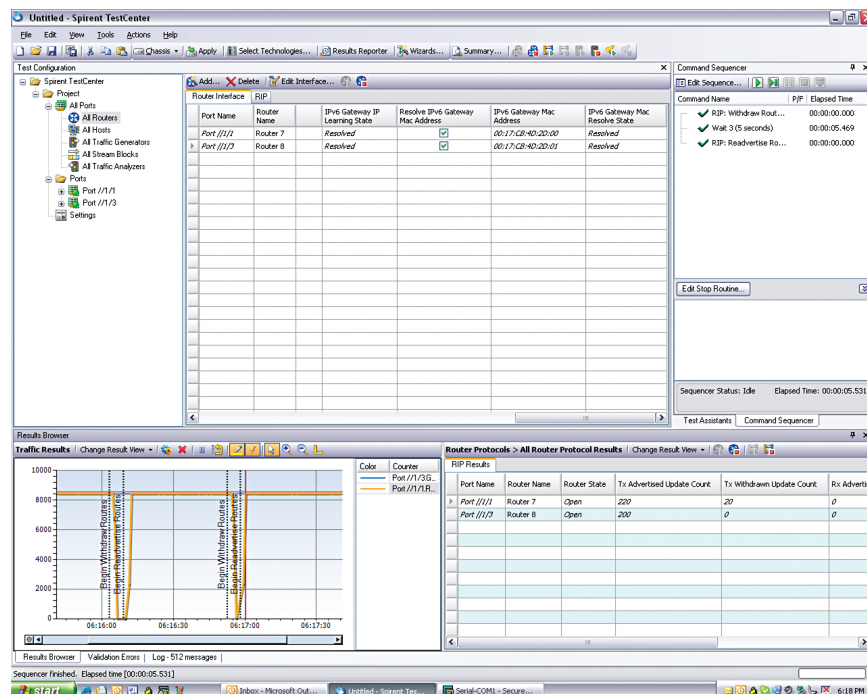
The Unicast Routing Base Package is a Spirent TestCenter™ component that enables network equipment manufacturers, service providers and large enterprises to quickly evaluate and troubleshoot routing functionality, performance and scalability of any routing device or network.

APPLICATIONS

- Performance testing of routers and networks under typical or extreme traffic load conditions for minutes, hours and days
- Emulate large-scale RIP networks on all ports with data-plane traffic going to each network advertised from all transmitting ports
- Qualify routers during development, quality assurance, and final regression testing, re-qualify routers after software or firmware upgrades and perform comparative analysis of routers during vendor selection

Spirent TestCenter's Unicast Routing Base Package supports RIP for IPv4 and IPv6 routing, and integrates them with BGP, OSPF and IS-IS to emulate real-world network topologies. Combine the Unicast Routing Base Package with the MPLS or Multicast Base Packages to test an infinite variety of realistic network topologies.

This package is an integrated component of Spirent TestCenter and works with other Spirent TestCenter components providing concurrent support for all key network protocols, including MPLS, BFD, DHCP, QoS, Multicast, and wire-rate IPv4 and IPv6 data-plane traffic.



FEATURES & BENEFITS

- Test the migration of routed networks from IPv4 to IPv6 under realistic deployment scenarios
- Quick and easy to use RIPv1, RIPv2 and RIPv6 features
- Test scalability and protocol functionality in the same test by running multiple protocols concurrently on each port
- Quickly builds hundreds or thousands of emulated routers with the router wizard
- Simulate real network conditions and see results on demand any time during a test without starting and stopping the protocols or traffic
- Log the real-time exchange of control-plane messages and test over any media type or encapsulation supported by Spirent TestCenter

TECHNICAL SPECIFICATIONS FOR RIP

- Router wizard and RIP Route Generator emulate hundreds of routers and generates hundreds of thousands of routes per port
- Create large routing tables with metrics and user-defined route prefix length distributions
- Router Configuration Options per emulated router: RIP version, Multicast, Broadcast, or Unicast update type, enable BFD, simple or MD-5 keyed authentication, Update Interval, maximum routes per update, Inter-Update Delay and Update Jitter timers
- Route Configuration Options: Number of routes, starting IP prefix, prefix length, route increment, next hop, metric and tag
- Use the Command Sequencer and real-time graphs with integrated events to evaluate key performance parameters of routers or networks while responding to common undesirable network events on the control plane
- Activate, deactivate, and reactivate OSPF routers and LSAs to build scalability tests that add objects over time
- Interactive and Command Sequencer events: Start or stop RIP, Establish RIP, Advertise RIP, Pause Updates, Resume Updates, Readvertise Routes, Withdraw Routes, View Routes
- Interactive commands to flap (withdraw or age-out, and readvertise) individual routes or route blocks or by route type
- Integrated with RIP and BFD for convergence and scalability testing including Interactive BFD commands: Admin Up or Down, Stop and Resume PDUs, Enable or Disable Demand Mode, Initiate Poll, and Set Diagnostic State and per router BFD results
- Detailed per-router RIP protocol and state counters including: router state (Not Started, Open or Closed), TX Advertised Update Count, TX Withdrawn Update Count, RX Withdrawn Update Count, RX Advertised Update Count, and RX Withdrawn Update Count
- Per test, port, and router RIP protocol and route summaries for RIPv1/2 and RIPv6 include: Number of RIP ports per test, number of RIP routers per test, number of active RIP routers per port and test, number of IPv4 routes, number of IPv6 routes, summary statistics for the number of RIP routers in the following states: Up, Down, Open and Closed
- Integrated support for RIPv1 and RIPv2 protocol conformance testing with the BPK-1024A Conformance Application Base Package and the TPK-1018 for RIPv1 and RIPv2 protocol testing
- Integrated data-plane traffic enables users to send, receive, inspect and accumulate statistics at wire-rate, which allows users to test data-plane outer convergence and network high availability features like BFD—users can monitor the affects that router configurations have upon traffic and QoS classes in real time
- Integrated with traffic wizard to quickly build traffic between traffic endpoints behind emulated routers
- View Routes command allows users to see routes advertised by the RIP neighbor router per emulated router and optionally save the routes to a file (txt or csv) for later analysis
- Support offered for routers with multiple IPv4 and IPv6 interfaces running different RIP versions with and traffic generation on a single port allows users to test the migration of routed networks from IPv4 to IPv6 under realistic deployment scenarios
- Support for bi-directional capture and real-time decoder (BPK-1029A) which supports ladder diagrams for RIP routers—view protocol events as they occur
- Each protocol has its own configurable timers to enable functional testing
- Support for Ethernet, ATM and SONET media types and all associated encapsulations to test over any supported media and encapsulation
- Support for GRE tunneling on a per router basis to test over any supported tunnel mode

SUPPORTED MODULES/PLATFORMS

- Supports all Spirent TestCenter test modules and personality cards
- Series 2000 modules provide higher performance than Series 1000 modules; contact your Spirent representative for details
- BPK-1004A/B supports all Spirent TestCenter test modules and personality cards. BPK-1004B should be used with Series 2000 test modules.

SYSTEM REQUIREMENTS

Minimum PC, UNIX, or Linux Requirements by System Size

- For Small Port System (2-25 ports)
 - Minimum Requirement—2.4 GHz Intel Pentium 4 processor (or equivalent), 512 MB RAM and 10 GB of free disk space
 - Recommended System—Intel Core™ 2 Duo E6300 processor (or equivalent), 2 GB of free RAM, and 10 GB of free disk space
- For Medium Port System (26-75 ports)
 - Minimum Requirement—3 GHz Intel Pentium 4 processor (or equivalent), 2 GB of free RAM, 15 GB of free disk space
 - Recommended System—Intel Core 2 Duo E6400 processor (or equivalent), 4 GB free RAM, 100 GB of free disk space
- For Large System (76 ports and above)
 - Minimum Requirement—Intel Core 2 Duo E6400 processor (or equivalent), 3 GB free RAM, 100 GB free space on hard drive
 - Recommended System—Intel Core 2 Duo E6600 processor (or equivalent), 4 GB of RAM, 100 GB of free disk space

Spirent TestCenter Hardware Requirements

- Pentium® or greater PC running Windows® XP Professional SP2 with mouse/color monitor required for GUI operation (See Minimum PC Requirements section)
- One Ethernet cable and one 10/100/1000Mbps Ethernet card installed in the PC A SPT-2000A Spirent 2U Chassis and Controller, SPT-5000A Spirent 5U Chassis and Controller or SPT-9000A Spirent 9U Chassis and Controller
- Operating system languages supported: English, French, German, Italian, Japanese, Korean and Chinese (traditional and simplified)
- Operating systems supported: Windows XP SP2, Windows 2003 Server (32 bit), RedHat EL3 and EL5, Solaris 8.0 and 10.0
- WAN-2003A and SFP-4002A personality module required for ATM testing
- BPK-1066A required for BFD protocol testing
- BPK-1006A/B required for MPLS testing
- BPK-1001A/B required for packet generator/analyzer features
- BPK-1029A required for real-time capture/decode feature
- BPK-1024A required for Conformance Testing
- TPK-1018 required for RIPv1 and RIPv2 protocol conformance testing

ORDERING INFORMATION

Part numbers ending in “A” indicate the standard performance version; those ending “B” indicate the high performance version.

Unicast Routing Base Package A—Supports up to 10 emulated routers per port: BPK-1004A

Unicast Routing Base Package B—Supports up to the maximum supported emulated routers per port: BPK-1004B

RELATED STANDARDS

- RFC 1058—Describes RIP Version 1
- RFC 2453—Describes RIP Version 2
- RFC 2080—RIPng for IPv6
- Draft-ietf-bfd-v4v6-1hop-06.txt—Describes BFD operation for single hop protocols

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