SPIRENT TESTCENTER

RFC 3918 MULTICAST BENCHMARK TEST PACKAGE

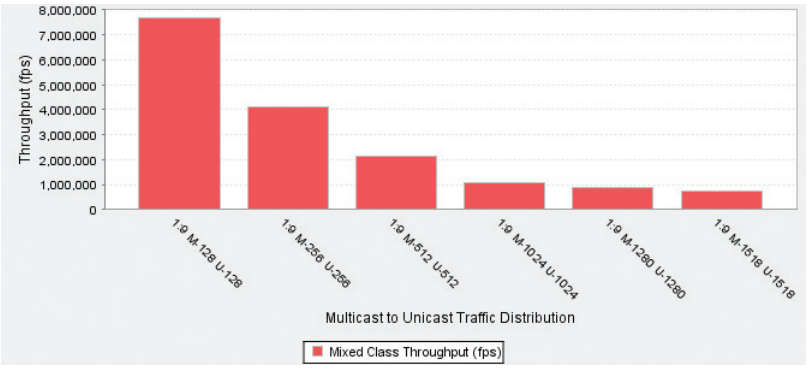
RFC 3918 is the industry leading IP Multicast benchmarking test specification. Utilizing Spirent TestCenter™ next generation architecture, RFC 3918 benchmarking can execute faster with nanosecond accuracy at 10 Gigabit, high-density scale.

FEATURES & BENEFITS

- Measure latency and jitter as part of Mixed Class Throughput in a single test
- IPv4 IGMP versions 1, 2 and 3
- IPv6 MLD versions 1 and 2
- Multiple unicast to multicast ratios
- Arbitrary number of multicast sources
- Additional monitor port to explicitly check for flooded multicast frames
- Test with jumbo frames and verify low-latency and wire-rate
- Test performance of different IMIX distributions
- Measure impact of FIFO, FILO, LIFO and LILO
- Large number of ports with millions of streams
- Reduce time-to-test through easy configuration and fast execution wizards
- Summary and comprehensive detailed results using the Spirent TestCenter Results Reporter

This package provides automated performance testing of multicast capable network devices per IETF RFC 3918, Methodology for IP Multicast Benchmarking. Included in this package are test cases for the following:

- Mixed Class Throughput with unicast and multicast frames by finding the maximum rates at which none of the offered frames are dropped
- Frame Loss rate throughout the entire range of configured multicast groups, rates and frame sizes
- Multicast Throughput by finding the maximum rates at which none of the offered frames are dropped
- Latency by measuring the minimum, average and maximum transmit delay
- Frame forwarding start and stop time duration measurement for joining and leaving multicast groups
- Maximum number of multicast groups supported while maintaining ability to forward multicast frames



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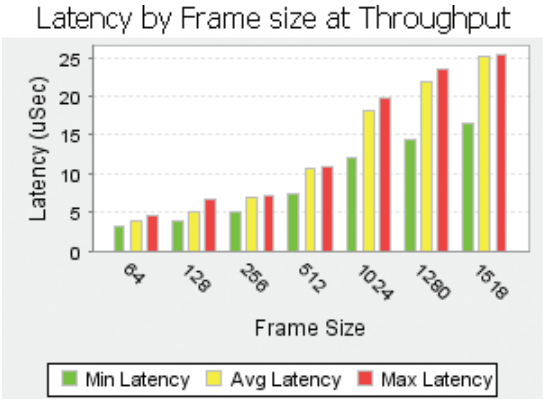

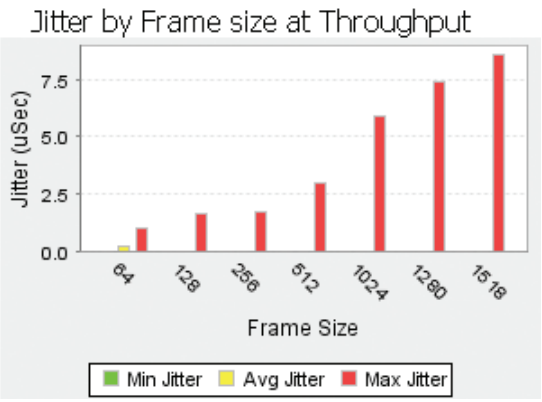

TECHNICAL SPECIFICATIONS*

Key Tests

- Mixed Class Throughput
- Scaled Group Forwarding Matrix
- Aggregated Multicast Throughput*
- Multicast Forwarding Latency*
- Multicast Join/Leave Latency*
- Multicast Group Capacity*

*Test cases available with 2.40 release

Traffic Control

- Multicast to Unicast traffic ratios
- Even and Weighted Multicast Distribution modes
- Same or different unicast and multicast frame size
- Fixed, Random, Step, Custom and iMIX frame sizes
- Ports, IP and Group addresses step values
- IP, UDP, TCP header types
- DiffServ Code Point (DSCP) settings
- Multiple 802.1p,Q VLANs per port or subnet
- Customization of editable streams after using the wizard

Test Control

- Number of trials
- Duration in seconds or by frame burst
- Test start delay
- Delay after transmission
- Join and Leave Group delay
- Multicast message Tx Rate control

Learning Parameters

- Learning frequency modes
  - No learning
  - Learn after topology change
  - Learn after frame size change
  - Learn before every iteration
- Frame rate
- Repeat count
- Frame sizes same as test or user-defined
- Cyclic address resolution
- ARP Packet rate
- ARP Retry count

SUPPORTED MODULES & PLATFORMS

- TPK-1042 is supported on all Spirent TestCenter Ethernet modules

ORDERING INFORMATION

- RFC 3918 Multicast Benchmark Test Package: TPK-1042
- IGMP/MLD Host IP Multicast Base Package: BPK 1003A/B
- Packet Generator Analyzer Package A: BPK 1001A

System and hardware requirements are specified in the BPK-1001A Packet Generator Analyzer Package A data sheet.

AMERICAS 1-800-SPIRENT • +1-818-676-2683 • sales@spirent.com

EUROPE AND THE MIDDLE EAST +44 (0) 1293 767979 • emeainfo@spirent.com

ASIA AND THE PACIFIC +86-10-8518-2539 • salesasia@spirent.com

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