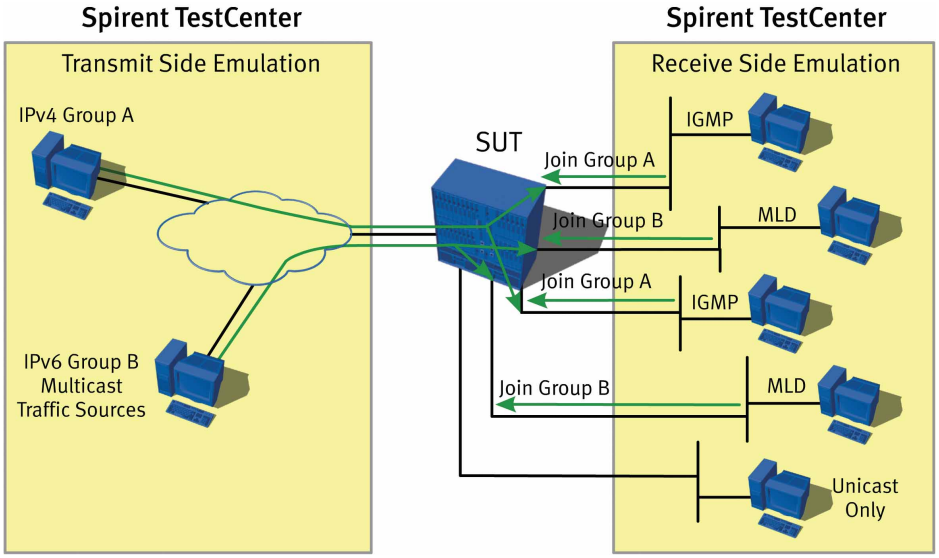
Spirent TestCenter

IGMP/MLD Host IP Multicast Base Package

Product Overview

Multicast traffic is increasing in importance as collaborative services and broadcast media become more prevalent in the network, but the impact this traffic can have on existing traffic is significant. As these services become more common, the filtering capabilities of IGMPv3 (Internet Group Management Protocol) and MLDv2 (Multicast Listener Discovery) will migrate to become mainstream requirements. Multicast evaluation requires a user to consider the impact of multicast on the entire system, because the resource requirements are significant and the impact on existing, well-behaved traffic can be detrimental.

The Multicast Base Package is a Spirent TestCenter System component that helps service providers, large enterprises and network equipment manufacturers quickly evaluate and troubleshoot host-to-router multicast behavior and the performance of networks and networking devices. The Multicast Base Package includes the emulation of multicast registration protocols including IGMPv1/v2/v3 and MLDv1/v2.



Because it is an integrated component of Spirent TestCenter, this package can work together with other TestCenter components to deliver easy, consistent Tcl support for all key metropolitan and enterprise protocols, including spanning tree, VLAN, DHCP, QoS, multicast, IPv4/IPv6 and routing. TestCenter includes RFC-based benchmarking methodologies for Layer 2 and Layer 3. Each TestCenter module supports multiple users and hot swapping.

Applications

Spirent TestCenter customers use the IGMP / MLD Host IP Multicast Base Package to emulate multicast registration and traffic across an enterprise switch, edge router or network under test. The package helps them to evaluate key functional parameters of switches and routers combining multicast traffic with QoS, routing and data forwarding.

Users can evaluate key performance parameters of switches and routers under typical or extreme multicast traffic load conditions for minutes, hours, and days. They can verify the ability of switches and routers to manage users joining and leaving multicast groups over extended periods, and perform comparative analysis of switches and routers with multicast traffic.

GET IT DONE FASTER WITH

Spirent TestCenter

- 20,0000 multicast receivers per port
- All IGMP and MLD versions supported
- Integrated performance and functional test modes
- Dual stack IPv4 and IPv6
- Mix L2, L3, unicast, multicast, QoS and routing traffic
- Real-time results
- Easy, full-featured Tcl automation
- Multi-user and hot-swappable interface modules

Spirent Communications
26750 Agoura Road
Calabasas, CA
91302 USA
E-mail: productinfo
@spirentcom.com

Sales Contacts:
North America
+1 800-927-2660
Europe, Middle East, Africa
+33-1-6137-2250
Asia Pacific
+852-2511-3822
All Other Regions
+1 818-676-2683

www.spirentcom.com

Benefits

- *Increase productivity*—Reduce the multicast testing learning curve with an easy-to-use GUI complete with configurable views for setup and results
- *Reduce time to test*—GUI tools and traffic wizard allow for quick setup, and automatic report generation saves time in results presentation
- *Improve product/service reliability*—Quickly and economically evaluate a very large number of groups and hosts to find issues with multicast and existing unicast behavior in the lab before a service is deployed
- *Real-world network emulation*—Emulate multiple protocols and schedule real-time protocol events; advanced support of IGMPv3 and MLDv2 enables users to test multicast with the additional complexities and benefits of source filtering — necessary for wide-scale multicast deployment
- *Reduce cost*—Comprehensive protocol support allows the user to test with a single platform and single application
- *Reach your objective*—Ensure the high performance of your multicast streaming in the presence of QoS mechanisms, routing events and heavy background unicast traffic

Key Features

- Traffic wizards make it easy to set up unicast, multicast, IPv4 and IPv6 streams
- Interactive feature allows functional and negative testing including group report and leave messages
- Integrated protocol counters track protocol messaging
- Duplicate and copy/paste features allow quick setup of many multicast groups
- Integrated capture feature allows user to capture control plane and data plane, enabling deep functional troubleshooting
- Concurrent operation with unicast and multicast routing protocols enables multicast edge router evaluation.
- Mixed traffic types for analysis of cross-impact of multicast traffic on unicast-only performance

IGMP/MLD Emulation Features

- IGMP (IPv4) versions 1, 2, and 3
- MLD (IPv6) versions 1 and 2
- 20,000 groups per port with up to 1,000 hosts per group
- VLAN ID support for IGMP/MLD hosts
- IGMP/MLD Joins and Leaves
- Source filters (for IGMPv3 and MLDv2) for up to 64 sources per group
- Robustness variable (for IGMPv3 and MLDv2)

IGMP/MLD Real-time and Final Results

- TX/RX frame counts
- Session state
- Type errors
- Checksum errors
- Version errors
- Join/Leave latency measurements

Test Results

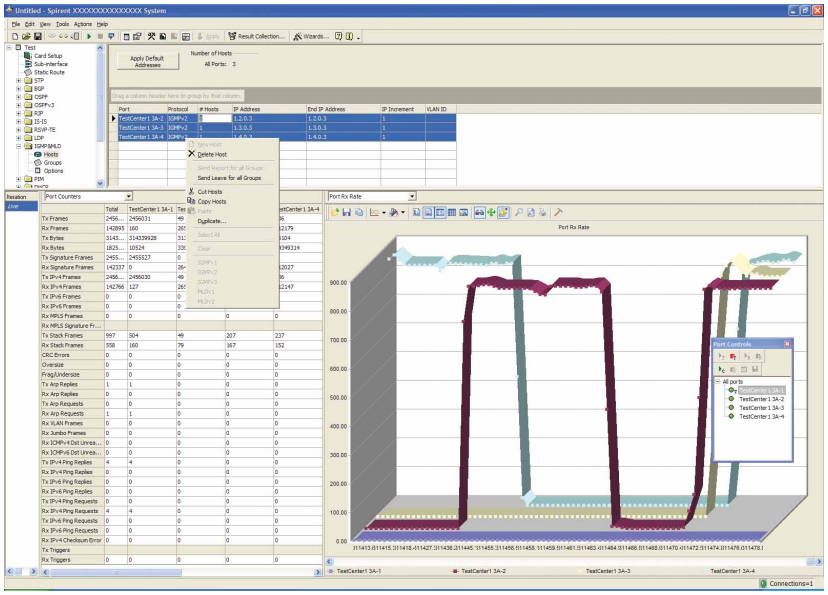
The IGMP/MLD Host IP Multicast Base package provides both real-time and final test results using spreadsheets and graphical formats. These results can be exported in comma separated value (.CSV) file format or HTML for spreadsheet or browser-based analysis and reporting.

The package offers several different methods for tracking data plane traffic. In addition to per-stream tracking options, the user can select multicast group, multicast source or other user-defined groups.

Real-time Test Results

These results can be displayed by port, by stream, by predefined tracking options (including prefix length, VPN, ToS, protocol and destination TCP/UDP port) or by user-defined groups.

- Receive frame rate graph
- Percentage of expected frame rate graph
- Average latency graph
- Detailed counters with min/ave/max latency and in/out of sequence
- Control-plane capture and export to protocol decoder



Users can interactively invoke change events and view impact on traffic

SPIRENT Communications

Final Test Results

- Final receive frame rate graph from the beginning of the iteration to the end
- Final average latency graph from the beginning of the iteration to the end
- Per-stream frame analysis including frames sent, received, and lost, as well as stray frames and latency
- All graphs have flap events integrated
- Per stream latency distribution
- Data plane receive capture and export to protocol decoder
- Join/Leave latency

Flap Schedule

- Create up to 64 steps with configurable time delays
- Flap through all the steps once or continuously cycle
- Each step can have multiple events
- Events include a combination of physical, protocol, and traffic conditions such as link down/up, traffic on/off

Supported Modules

Module	Description
CPR-1001A	10/100/1000 Copper RJ-45, 8 Port
EDM-1001A	10/100/1000 Dual Media, 4 Port
FBR-1001A	1G Fiber SFP, 8 Port
XFP-1001A	10G XFP, 1 Port
CPR-2001A	10/100/1000 Copper RJ-45, 8 Port
EDM-2001A	10/100/1000 Dual Media, 4 Port
FBR-2001A	1G Fiber SFP, 8 Port
CPR-2002A	10/100 Copper RJ-45, 8 Port
XFP-2001A	10G XFP, 1 Port

Requirements

- An SPT-2000A Spirent 2U chassis and controller or SPT-5000A Spirent 5U chassis and controller with the appropriate hardware modules
- Pentium™ or greater PC running Windows® 2000 SP4 or XP SP1/1A/2 with mouse/color monitor required for GUI operation

Ordering Information

BPK-1003A	IGMP/MLD Host IP Multicast Base Package

Other related Spirent TestCenter software available

BPK-1001A	Packet Generator and Analyzer Base Package
BPK-1002A	STP/RSTP/PVST+ Base Package
BPK-1004A/1004B	Unicast Routing Base Package
BPK-1005A/1005B	Multicast Routing Base Package
BPK-1006A/1006B	MPLS/LDP/RSVP-TE Base Package

Part numbers ending in “A” indicate a limited-performance version; those ending in “B” indicate the full performance version.

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.

Spirent Communications
26750 Agoura Road
Calabasas, CA
91302 USA
E-mail: productinfo@spirentcom.com

Sales Contacts:
North America
+1 800-927-2660
Europe, Middle East, Africa
+33-1-6137-2250
Asia Pacific
+852-2511-3822
All Other Regions
+1 818-676-2683

www.spirentcom.com

P/N 79-000031 Rev. A 4/05

SPIRENT Communications