Spirent Avalanche

Applications and Security Testing Solutions

Spirent’s Avalanche Layer 4-7 testing solution provides capacity, security and performance testing for network infrastructures, cloud and virtual environments, Web application infrastructures and media services that ensures Quality of Service (QoS) and Quality of Experience (QoE) for your customers. Avalanche pinpoints network capacity with the highest performing Layer 4-7 traffic generation capability available from 1Gbps to 100Gbps.

Application
- Network Performance Testing
- Web Application Testing
- Advanced high capacity HTTPS cryptographic load testing
- Media Testing
- Security Testing
- Cloud and Virtual Network Testing

Features & Benefits
- **Up to 100Gbps of Stateful Traffic Generation**—Spirent Avalanche provides the capability to generate stateful traffic from 1Gbps to 100Gbps rates via native interfaces for scale and performance testing for the most demanding of environments. Multiple systems can be used in a single test creating vast amounts of application and security traffic.
- **Flexible Load Profile**—Spirent Avalanche's flexible load profile offers testers the flexibility to specify load variables such as connections per second, concurrent connections, transactions per second, new user sessions per second and concurrent users.
- **Real-Time Statistics**—Spirent Avalanche offers real-time statistics across all protocols and reporting tool that makes analyzing results faster and easier.
- **Network Devices Performance Testing**—Spirent Avalanche provides performance and capacity testing on a variety of network devices including: Firewall, Virtual Devices, Application Firewall, Load Balancer, Cache, Proxy, URL Filter, Content Filter, Anti-Virus, Anti-Spyware, Reverse-Proxy, SSL Accelerator, HTTP/HTTPS Accelerator, SMTP Relay, IDS/IPS, and more, and IPSec VPN Gateways.
- **Application Server Performance Testing**—Spirent Avalanche can validate performance of several types of real servers including: Web Server, Application Server, Mail Server, DHCP Services, FTP Server, DNS Server, Telnet Server, RTSP/RTP QuickTime Streaming Server, Multicast Server, HTTP Adaptive Bitrate Streaming, and more.
• **Media Testing**—Spirent Avalanche can perform media testing and service verification from the user’s point of view with realistic voice calling, HTTP Adaptive Bitrate streaming, unicast and multicast streaming video, and simulate Internet data traffic using static IP address or IP address assign by DHCP over PPPoE, VLAN and Stacked VLANs (e.g., Q-in-Q).

• **Web Application Testing**—Spirent Avalanche can perform Web application testing including: Web services, ERP and CRM applications with Spirent Avalanche’s application testing capability to support cookie, session ID, dynamic link, automatic follow redirect, additional header, content validation, SOAP message, think time, variable think time and variable assignment.

• **Network Security Testing**—Spirent Avalanche provides extensive testing for secure network communication, vulnerability assessment, attack generation, and user authentication including: IPSec, HTTPS/TLS (including TLSv1.3), 802.1x, Network Access Control (NAC), RADIUS and custom user imported traffic over TLS.

• **Avalanche Virtual**—is a software solution based on the industry-leading Spirent Avalanche platform that tests and stresses virtualized data center environments. It offers both Enterprise and Cloud Service Providers an unparalleled opportunity to correlate the impact of large-scale cloud-based application deployments by creating real-world user emulation and traffic generation directly in the cloud.
<table>
<thead>
<tr>
<th>Feature</th>
<th>Spirent Avalanche</th>
<th>Spirent C1 Portable Appliance</th>
<th>Spirent C100-S3 Appliance</th>
<th>Spirent MX2 (10G)</th>
<th>Spirent MX2 (1G)</th>
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<tbody>
<tr>
<td>Number of Test Users</td>
<td>1 Test User</td>
<td>Up to 4 users (10G and 1G configurations)</td>
<td>Up to 2 Test Users</td>
<td>Up to 2 Test Users</td>
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<tr>
<td>Type of Simulation</td>
<td>Client and Server</td>
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<tr>
<td>Network Interface Options</td>
<td>4x 10/100/1000 Copper or Fiber</td>
<td>16x 10/100/1000 Copper or Fiber</td>
<td>MX2-10G-S4 10G/1G SFP+ Module</td>
<td>MX2-1G-S8 1G Only SFP+ Module</td>
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<td>2x 10GbE SPF+</td>
<td>16x 10/100/1000 Copper or Fiber and 4x 10GbE</td>
<td>MX2-10G-S8 10G/1G SFP+ Module</td>
<td>MX2-1G-S12 1G Only SFP+ Module</td>
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<td>8x 10GbE SPF+</td>
<td>MX2-10G-S12 12-PORT (8-PORT support) 10G/1G SFP+ Module</td>
<td>MX2-1G-S16 1G Only SFP+ Module (*12 port support)</td>
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<td>4x QSFP28 10/25/40/50/100 Multispeed</td>
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<td>Cryptographic Accelerator Option</td>
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**Avalanche Virtual**
Avalanche is available for use in virtual instances for ESXi and KVM environments and scales from 1 to multi-10GB performance

**Network Access Protocol**
DHCP, PPPoE, PPTP, and IPSec (IKEv1 and IKEv2)

**Network Realism**
Line speed limitation, network latency, packet loss and fragmentation

**IP Version Supported**
IPv4 and IPv6 (including DSLITE)

**Encapsulation Protocol**
802.1Q and 802.1 Q-in-Q

**Transport**
TCP, UDP, GTP, QUIC, SSLv2, SSLv3, TLSv1, TLSv1.2 and TLSv1.3

**Data Protocol**
HTTP, HTTPS, FTP (Active/Passive), DNS, TELNET, SMTP, POP3, IMAP4, EMAIL over SSL, RADIUS, MM4, ICMP, CIFS and NFS, Remote Desktop, Exchange, LDAP

**Extended Protocols**
BitTorrent, Gnutella, MSN, Yahoo, SKYPE, SQL, MYSQL, Oracle, SMB, NFS, Remote Desktop, Exchange, LDAP

**Authentication**
802.1x, Network Access Control (NAC), Radius

**Voice Protocol**
SIP over TCP/UDP

**Voice Codec Supported**

**Voice Quality Measurement**
MOS score based on R-factor CIFS and NFS

**File Access Protocol**
CIFS and NFS

**Video Protocol**
HTTP Adaptive bit rate streaming for Apple, Adobe, Microsoft and DASH, ABR over SSL, Unicast Streaming Quicktime RTSP/RTP, Unicast Streaming Real Network RTSP/RTP, Unicast Streaming Microsoft MMS, Multicast Streaming IGMPv2, IGMPv3 and MLDv2, and Flash Media Streaming using RTMP/RTMPT

**Video Codec Supported**
MPEG-1, H.261, MPEG-2, H.262, MPEG-4, H.264

**Video Quality Measurement**
MDI measurements along with additional stats to detect picture quality

**Attack Generation**
L2/L4 DDoS Attacks and L4/L7 Application Attacks

**Reporting**
Integrated CSV test results analyzer fully customizable with report generation in PDF and HTML; also provides over 300 statistics per IP address

**Automation**
GUI to TCL

www.spirent.com
NetSecOPEN Testing

Standards-based realistic mixed traffic testing is available for Avalanche.

NetSecOPEN is a network security industry group where network security vendors, tool vendors, labs and enterprises collaborate to create open and transparent testing standards. The goal of this group is to create a suite of standards that can be used for the evaluation and/or certification of network security products. The NetSecOPEN standard tests in Avalanche provides an easy-to-use template for testing modern network security infrastructures. For more information on NetSecOPEN, go to www.netsecopen.org.
About Spirent Communications

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks.

We help bring clarity to increasingly complex technological and business challenges.

Spirent’s customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled.

For more information, visit: www.spirent.com

Spirent Professional Services

Professional Services

- **Test lab optimization**: Test automation engineering services
- **Service deployment and service-level optimization**: Vendor acceptance testing, SLA benchmarking, infrastructure and security validation
- **Device scalability optimization**: POC high scalability validation testing

Education Services

- **Web-based training**: 24/7 hardware and software training
- **Instructor-led training**: Hands-on methodology and product training
- **Certifications**: SCPA and SCPE

Implementation Services

- Optimized new customer productivity with up to three days of on-site assistance