

# SPIRENT AVALANCHE

## APPLICATION LOAD TESTING SOLUTION

### AVALANCHE 3100B

Spirent's Avalanche™ appliance solution provides capacity, security and performance testing for network infrastructures, Web application infrastructures and Triple Play services ensuring Quality of Service (QoS) and Quality of Experience (QoE) for your customers.

#### APPLICATIONS

- Network Performance Testing
- Web Application Testing
- Triple Play Testing
- Security Testing

In today's digital world, it's essential that the performance of content aware networks, security systems and Web applications are carefully tested to ensure that business transactions and communication are not impacted. The Spirent Avalanche 3100B is a line rate, 1 Gbps and multi-10Gbps Layer 4-7 stateful traffic performance solution that is capable of high throughput security testing of over 8 Gbps of bulk encrypted traffic. Avalanche 3100B users now have the ability to test devices to their limits at line rate simulating daily traffic and understand the impact under worse case scenarios.

#### PERFORMANCE AND FLEXIBILITY

In addition to 1 Gbps and 10Gbps of Layer 4-7 stateful traffic and 30 million connections (Avalanche 3100B GT supports over 70,000,000 connections), testers are able to specify load variables such as user sessions, new user sessions per second, transactions, transactions per second, connections or connections per second. One load profile can be specified for an entire test, or a separate load profile can be defined for each group of simulated users. You can also turn on and off any protocol at any phase during the test. This flexible approach enables different actions, network characteristics and loads to be specified for each group of simulated users. In addition, up to eight simultaneous users can utilize the resources of a single Avalanche 3100B appliance to maximize your investment and test efficiencies.

#### AVALANCHE 3100 APPLIANCE PERFORMANCE EXAMPLES\*

|                                 | Avalanche 3100B | Avalanche 3100B GT | Avalanche 3100B 8x10G |
|---------------------------------|-----------------|--------------------|-----------------------|
| <b>HTTP GETs/Sec</b>            | >1,000,000      | >1,000,000         | >1,000,000            |
| <b>HTTPS GETs/Sec</b>           | 300,000         | 300,000            | 300,000               |
| <b>HTTP Bandwidth</b>           | 40 Gbps/70 Gbps | 40 Gbps/70 Gbps    | 80Gbps/95 Gbps        |
| <b>HTTps Bandwidth</b>          | 14 Gbps         | 14 Gbps            | 14 Gbps               |
| <b>Sustained Connections</b>    | 30,000,000      | 70,000,000         | 30,000,000            |
| <b>Sustained IPSec Tunnels</b>  | 200,000         | 400,000            | 200,000               |
| <b>Sustained Video Sessions</b> | 200,000         | 200,000            | 200,000               |

\*The above numbers are obtained using two 3100B appliances, one being used as client and other one as server. Unidirection/Bidirectional Traffic.



#### USER REALISM

Avalanche supports the configuration of extremely realistic user behaviors so tests accurately reflect your company's network usage patterns. The system interacts seamlessly with sites using dynamic and interactive content, HTML links and fill-in online forms. Multiple types of browsers can be emulated, providing detailed control over browser connection behavior, SSL versions, authentication and browser client headers. User behavior such as think times and "clickaways" (HTTP aborts) can be simulated, and the system also supports HTTP basic and proxy authentication. In addition next-generation integrated video testing is available for protocols such as HTTP Adaptive Bitrate streaming for Apple®, Microsoft®, and Adobe®.

Avalanche sends realistic requests that include dynamically filled-in fields from a list of provided values, or values captured from a previous response such as order numbers, session IDs or transaction IDs. Avalanche also supports high-performance testing of Web services to ensure mission-critical services will perform under heavy loads. The system can also verify received content by searching for one or more strings in a response.

Avalanche quickly identifies potential points of failure by stress-testing the infrastructure. With tremendous performance at your disposal, highly realistic simulated user and network traffic can be generated, recreating a wide range of real-world loading scenarios. This proactive approach enables you to correct trouble spots and bottlenecks before network slowdowns or costly outages occur. Ideal for equipment manufacturers, service providers and enterprise network operators, Avalanche eliminates the need to build expensive and cumbersome test infrastructures. The challenge of analyzing performance and security in today's Triple Play voice, video and data networks requires the best testing equipment you can get. By accurately emulating user and network behavior, the Avalanche load testing appliances help ensure tight security and optimum application performance.

#### FEATURES & BENEFITS

- **40Gbps and 80Gbps of Line Rate Stateful Traffic**—Provides the capability to generate line rate stateful traffic up to 80Gbps allowing trunk ports to be directly tested or determine the impact of multiple GigE ports being aggregated over 20Gbps—in addition the Avalanche 3100 is capable of bidirectional testing and can operate in excess of >80Gbps from a single 3100 appliance
- **Flexible Load Profile**—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
- **Expandable**—The Avalanche 3100 is designed for the future in mind with the ability to be expanded to up to 4-ports of 10Gbps interfaces for a total of 40Gbps of unidirectional line-rate application traffic and for maximum 10G applications an 8x10G version is available for up to 80Gbps of Layer 4-7 traffic generation
- **Real-Time Statistics**—Real-time statistics across all protocols and reporting tool that makes analyzing results faster and easier
- **Network Devices Performance Testing**—Provides performance and capacity testing on a variety of network devices including: Firewall, Application Firewall, Load Balancer, Cache, Proxy, URL Filter, Content Filter, Anti-Virus, Anti-Spyware, Reverse-Proxy, SSL Accelerator, HTTP/HTTPS Accelerator, WAN Accelerators, SMTP Relay, IDS/IPS, IPSec VPN Gateway and SSL VPN Gateway
- **Application Server Performance Testing**—Validates the performance of several types of real servers including Web Server, CIFS Server, Application Server, Mail Server, DHCP Services, FTP Server, DNS Server, Telnet Server, RTSP/RTP QuickTime Streaming Server, Multicast Server, RTMP Servers, NFS, and more
- **Triple Play Performance Testing**—Performs Triple Play testing, validates Triple Play service from the user's point of view with realistic voice calling, unicast and multicast streaming video, HTTP adaptive bitrate streaming for Apple, Microsoft, and Adobe and simulates 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**—Performs Web application testing including Web services, SOA, 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**—Provides extensive testing for secure network communication, vulnerability assessment with over 3000 attack profiles SSLVPN for Cisco Anyconnect™ and user authentication including: IPSec, SSL, 802.1x, Network Access Control (NAC) and RADIUS

## TECHNICAL SPECIFICATIONS

| SPiRENT AVALANCHE 3100 APPLIANCE                |   |
|---|---|
| <b>Feature</b>                                  |   |
| <b>Number of Test Users</b>                     | 12 Test Users   |
| <b>Type of Simulation</b>                       | Client and Server   |
| <b>Network Interfaces</b>                       | <ul style="list-style-type: none"> <li>• 12x 10/100/1000 Copper</li> <li>• 12x 10/100/1000 Fiber</li> <li>• 12x 10/100/1000 Copper and 4x 10/100/1000 Fiber</li> <li>• 4x 10Gbps Fiber Interface (SFP +Transceivers Included)</li> <li>• 8x10Gbps Fiber Interface (SFP+ Transceivers included)</li> </ul> |
| <b>Network Access Protocol</b>                  | DHCP, PPPoE and IPSec   |
| <b>Network Realism</b>                          | Line speed limitation, network latency, packet loss and fragmentation   |
| <b>IP Version Supported</b>                     | IPv4 and IPv6   |
| <b>Encapsulation Protocol</b>                   | 802.1Q and 802.1 Q-in-Q   |
| <b>Transport</b>                                | TCP, UDP, SSLv2, SSLv3 and TLSv1 SSLVPN for Cisco AnyConnect™   |
| <b>Data Protocol</b>                            | HTTP, HTTPS, FTP (Active/Passive), DNS, TELNET, SMTP, POP3, IMAP4, CIFS, RADIUS, MM4, RTMP, ICMP, NFS and Capture/Replay  |
| <b>Authentication</b>                           | 802.1x, Network Access Control (NAC), Radius  |
| <b>Extended Protocols</b>                       | BitTorrent, Gnutella, MSN, Yahoo, SKYPE, SQL, MYSQL, Oracle, SMB, NFS, Remote Desktop, Exchange, LDAP   |
| <b>Voice Protocol</b>                           | SIP over TCP and SIP over UDP   |
| <b>Voice Codec Supported</b>                    | G711A, G711U, G.723.1, G726-32, G.728 and G729AB  |
| <b>Voice Quality Measurement</b>                | MOS R-factor  |
| <b>Video Protocol</b>                           | Flash Streaming using RTMP/RTMPT, Unicast Streaming Quicktime RTSP/RTP, Unicast Streaming RealNetwork RTSP/RTP, Unicast Streaming Microsoft MMS, Multicast Streaming IGMPv2, IGMPv3, MLDv2, HTTP ABR streaming for Apple™, Microsoft™, and Adobe™   |
| <b>Video Codec Supported</b>                    | MPEG-1, H.261, MPEG-2. H.262, MPEG-4. H.264   |
| <b>Video Quality Measurement</b>                | MDI measurements along with additional stats to detect picture quality  |
| <b>Vulnerability Assessment</b>                 | L2/L4 DDOS Attacks and 3500+ L4/L7 Application Attacks including SANs Top-20 Internet Security Attacks  |
| <b>Reporting</b>                                | Integrated CSV test results analyzer fully customizable with report generation in PDF and HTML  |
| <b>Automation</b>                               | GUI to TCL and Automatic goal seeking using WorkSuite Manager   |
| <b>Dimensions</b>                               | 5.25" H x 16.53" W x 19.75" D<br>Fits standard 19" rack, 3U high  |
| SPiRENT AVALANCHE 3100 TECHNICAL SPECIFICATIONS |   |
| <b>Weight</b>                                   | 31 lbs. (14 kg)   |
| <b>Operating Environment</b>                    | 5°C–35°C  |
| <b>Non-Operating Environment</b>                | 0°C–50°C  |
| <b>Relative Humidity</b>                        | 10%–90% (non-condensing)  |
| <b>Power Requirements</b>                       | 115-230V, 50/60 Hz – 460W   |
| <b>Regulatory Approvals</b>                     | FCC Class A, EN 55022 Class A, EN 55024   |

## **SPIRENT AVALANCHE 3100B**

### **APPLICATION LOAD TESTING SOLUTION**

#### **REQUIREMENTS**

An IBM<sup>®</sup> compatible PC must meet the following minimum requirements to run the Spirent Avalanche:

- One 10/100/1000Base-T unshielded twisted pair (UTP) cable
- One 10 Mbps or 10/100/1000 Mbps Ethernet NIC card
- Intel<sup>®</sup> E6300 Core 2 Duo 4 (or equivalent)
- One serial port
- Minimum of 2 GB of RAM
- Minimum 10 GB free space on the hard drive
- Windows<sup>®</sup> XP operating system, Service Pack 2 (SP2)
- An SVGA color monitor (or equivalent) and a mouse
- Microsoft Terminal Services™ or HyperTerminal™, or equivalent communications software package
- DVD-ROM drive

#### **ORDERING INFORMATION**

- Avalanche 3100B with 12-Port GIGE Copper NICs: **CEE-HWB-036**
- Avalanche 3100B with 12-Port GIGE Fiber NICs: **CEE-HWB-035**
- Avalanche 3100B with 12-Port GIGE Fiber and 4-Port 10G NICs: **CEE-HWB-031**
- Avalanche 3100B with 12-Port GIGE Copper and 4-PORT 10G NICs: **CEE-HWB-030**
- Avalanche 3100B with 8-PORT 10G NICs: **CEE-HWB-091**
- Other configurations are available

#### **SPIRENT 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 x 7 hardware and software training
- Instructor-led training: Hands-on methodology and product training
- Certifications: SCPA and SCPE certifications

##### **Implementation Services**

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

#### **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 Global Services at [www.spirentcom.com](http://www.spirentcom.com) or contact your Spirent sales representative.

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