

SPIRENT TESTCENTER

LAYER 4-7 TESTING

C100 FOR AVALANCHE

The Spirent TestCenter C100 for Avalanche solution provides multi-10 Gbps 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
- Advanced video application testing
- Attack testing
- Mobile network firewall testing
- Security testing
- Replay any traffic at scale virtually

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 TestCenter™ C100 for Avalanche is a line rate, 1 Gbps and multi-10 Gbps Layer 4-7 stateful traffic performance solution that is capable of high throughput security testing of over 20 Gbps of bulk encrypted traffic. Spirent TestCenter C100 for Avalanche 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 10 Gbps of Layer 4-7 stateful traffic and over 45 million connections (Spirent TestCenter C100 for Avalanche GT supports over over 100 million 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. For maximum value you can reserve and run tests on 1 Gbps and 10 Gbps ports simultaneously from the same appliance. 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 Spirent TestCenter C100 for Avalanche to maximize your investment and test efficiencies.

SPIRENT TESTCENTER C100 FOR AVALANCHE PERFORMANCE EXAMPLES*

	C100	C100 GT
TCP Connections Per Sec	>3,000,000	>3,000,000
HTTP GETs/Sec	2,500,000	2,500,000
HTTPS GETs/Sec	300,000	300,000
HTTP Bandwidth	80 Gbps/90 Gbps	80 Gbps/90 Gbps
HTTPs Bandwidth	20 Gbps	20 Gbps
Sustained Connections	>45,000,000	>100,000,000
Sustained IPSec Tunnels	300,000	400,000
Sustained Video Sessions	200,000	200,000

*The above numbers are obtained using two 8x10G C100s, 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 online fill-in 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.

For testing next generation firewalls including mobile infrastructures between SGSN and GGSN Avalanche provide GTP tunnelling capabilities to test tunnel setup rate along with high-performance application data traffic.

FEATURES & BENEFITS

- **80 Gbps Line Rate Stateful Traffic:** Provides the capability to generate line rate stateful traffic up to 80 Gbps per port allowing trunk ports to be directly tested or determine the impact of multiple GigE ports being aggregated over 20 Gbps. In addition the Spirent TestCenter C100 for Avalanche is capable of bidirectional testing and can operate in excess of 90 Gbps from a single Spirent TestCenter C100 for Avalanche.
- **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 Spirent TestCenter C100 for Avalanche comes in a number of different configurations to best meet your specific needs. Configurations can be expanded to support up to 8x10G interfaces in a single appliance
- **Real-Time Statistics:** Across all protocols and a 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 TESTCENTER C100 FOR AVALANCHE	
Feature	
Number of Test Users	Up to 16 users on GigE version
Type of Simulation	Client and Server
Network Interfaces	<ul style="list-style-type: none"> • Up to 16x10/100/1000 Copper • Up to 16x10/100/1000 Fiber • Up to 8x10 Gbps Fiber Interface • 8x10 Gbps Fiber Interface (SFP+ Transceivers included)
Network Access Protocol	DHCP, PPPoE, IPSec, 802.1x/NAC and GTP tunneling
Network Realism	Line speed limitation, network latency, packet loss and fragmentation
IP Version Supported	IPv4, IPv6, DSLITE, and 6RD
Encapsulation Protocol	802.1Q and 802.1 Q-in-Q
Transport	TCP, UDP, SSLv2, SSLv3 and TLSv1 SSLVPN for Cisco AnyConnect™
Data Protocol	HTTP, HTTPS, FTP (Active/Passive), DNS, TELNET, SMTP, POP3, IMAP4, CIFS, RADIUS, MM4, RTMP, ICMP, NFS and Capture/Replay
Authentication	802.1x, Network Access Control (NAC), Radius
Extended Protocols	BitTorrent, Gnutella, MSN, Yahoo, SKYPE, SQL, MYSQL, Oracle, SMB, NFS, Remote Desktop, Exchange, LDAP
Voice Protocol	SIP over TCP and SIP over UDP
Voice Codec Supported	G711A, G711U, G.723.1, G726-32, G.728 and G729AB
Voice Quality Measurement	MOS R-factor
Video Protocol	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
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 >7000+ L4/L7 Application Attacks
Reporting	Integrated CSV test results analyzer fully customizable with report generation in PDF and HTML
Automation	GUI to TCL
SPIRENT TESTCENTER C100 FOR AVALANCHE TECHNICAL SPECIFICATIONS	
Dimensions	5.25" H x 16.53" W x 19.75" D Fits standard 19" rack, 3U high
Weight	32 lbs. (14 kg)
Operating Environment	5°C–35°C
Non-Operating Environment	0°C–50°C
Relative Humidity	10%–90% (non-condensing)
Power Requirements	115-230V, 50/60 Hz – 750W
Regulatory Approvals	FCC Class A, EN 55022 Class A, EN 55024

SPIRENT TESTCENTER C100 FOR AVALANCHE

REQUIREMENTS

An IBM® 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® 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® 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

Contact your Spirent Sales Representative for more information

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:** 24x7 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 or contact your Spirent sales representative.

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