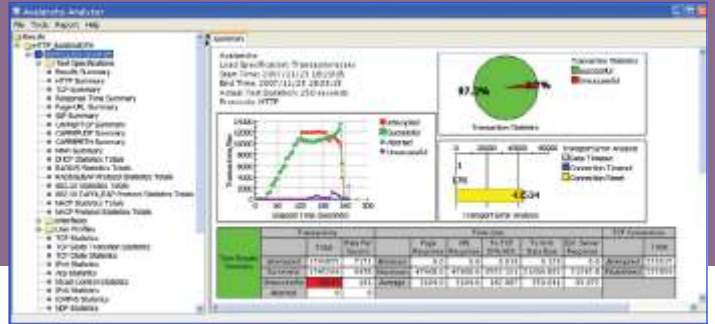# SAVITRI
TELECOM SERVICES

Avalanche

Application Performance Testing Solution

Spirent's Avalanche Layer 4-7 testing solution provides capacity and performance testing for network devices and solutions, 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. Avalanche allows your testing environment to stay current. It is the first solution to offer full client and server HTTP/3 testing support for next generation web testing use cases.

Features & Benefits

Over 100Gbps of Stateful Traffic Generation—Spirent Avalanche provides the capability to generate stateful traffic from 1Gbps to multi 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 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 a 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, SD-WAN, SASE, Anti-Virus, Anti-Spyware, Reverse-Proxy, HTTP/HTTPS Accelerator, SMTP Relay, IDS/IPS, IPSec VPN Gateways, OpenConnect supported SSL VPN, and more.

Application Server Performance Testing—Spirent Avalanche can validate performance of several types of real services including: Web, Application, Mail, DHCP, FTP, DNS, Telnet, RTSP/RTP QuickTime Streaming, Multicast, HTTP Adaptive Bitrate Streaming, and more.

Media Testing—Spirent Avalanche performs 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 simulates Internet data traffic using static IP address or IP address assignment by DHCP over PPPoE, VLAN and Stacked VLANs (e.g., Q-in-Q).

KEY APPLICATIONS

- Network Performance Testing
- Web Application Testing
- Latest application testing with HTTP/2 and HTTP/3 support
- Advanced high-capacity HTTPS cryptographic load testing
- Media Testing
- Cloud and Virtual Network Testing
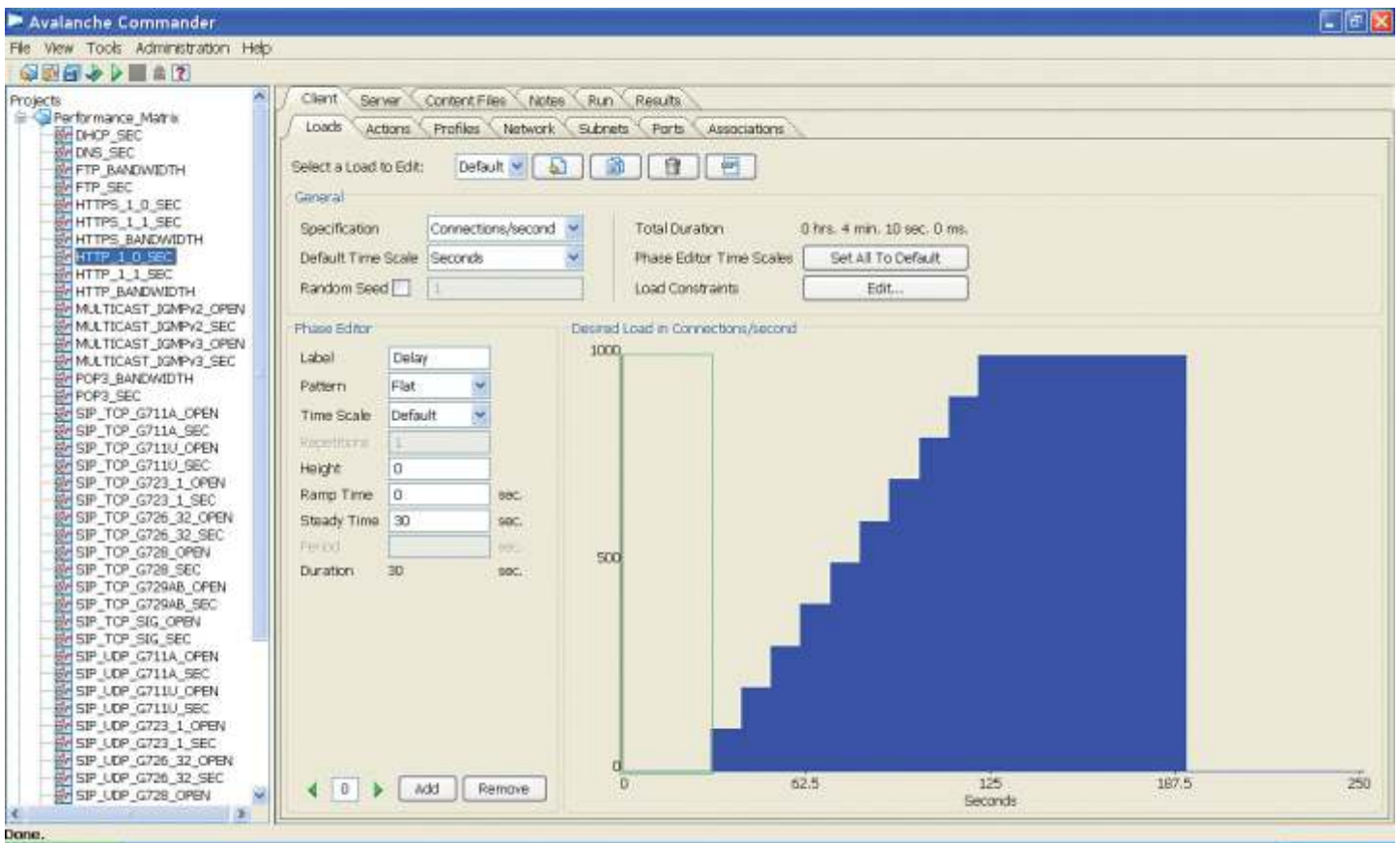- SSL VPN and IPSec Testing

Web Application Testing—Spirent Avalanche performs 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.

Cryptographic Load Testing—Spirent Avalanche provides extensive functional and performance testing for secure network communication, and user authentication including: IPSec, HTTPS/TLS (including TLSv1.3), DNSSEC, DNS over TLS, SSL VPN, 802.1x, Network Access Control (NAC), RADIUS and custom user imported traffic over TLS.

SSL VPN—Spirent Avalanche supports tunnel setup and data traffic throughput capacity testing over a growing set of OpenConnect compatible SSL VPN versions. Create comprehensive scale and accuracy tests with full control over data plane traffic profiles.

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 cloudbased application deployments by creating real-world user emulation and traffic generation directly in the cloud.

	Spirent Avalanche			
	Spirent C1 Portable Appliance	**Spirent CF20 Appliance**	**Spirent C100-S3 Appliance**	**Spirent C200 Appliance**
Feature	**Per appliance**	**Per appliance**	**Per appliance**	**Per appliance**
Number of Test Users	1 Test User	Up to 2 users (10G /1G configurations)	Up to 4 users (10G /1G configurations)	Up to 16 users (10G)
Type of Simulation	Client and Server	Client and Server	Client and Server	Client and Server
Network Interface Options	• 4x 10/100/1000 Copper • 2x10GbE SPF+	• 8x10G/8x1G SFP+ • 2xQSFP28 10/40/100G Multispeed • Cryptographic Accelerator - Built-in	• 16x 10/100/1000 Copper or Fiber • 16x 10/100/1000 Copper or Fiber and 4x 10GbE • 8x10 GbE SPF+ • 4x QSFP28 10/25/40/50/100 Multispeed • Cryptographic Accelerator Option	4 x QSFP28 supports a number of interface options • 16x 10G Fiber (SR4) • 8x 25G Fiber (SR4) • 4x 40G Fiber (SR4) • 4x 50G Fiber (SR4) • 4x 100G Fiber (SR4 or LR4) • 2x Cryptographic Accelerators Built-in
Avalanche Virtual	Avalanche is available for use in virtual instances for ESXi, KVM, Azure, AWS and Google Cloud environments, and scales from 1GB to multi-10GB performance			
Network Access Protocol	DHCP, PPPoE, PPTP, IPSec (IKEv1 and IKEv2), SSL VPN for Cisco and Palo Alto Networks Global Protect™			
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, SSLv2, SSLv3, TLS v1.0, TLS v1.2, TLS v1.3, QUIC			
Data Protocol	HTTP, HTTP/2, HTTP/3, HTTPS, FTP (Active/Passive), DNS, DNSSEC, DNS over TLS, DNS over HTTPS, TELNET, SMTP, POP3, IMAP4, EMAIL over SSL, RADIUS, MM4, ICMP, CIFS and Capture/Replay			
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	G.711A, G.711U, G.723.1, G.726-32, G.728 and G.729AB			
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			
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 API			

NetSecOPEN Testing

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

NetSecOPEN is a networking industry group where networking 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 devices and solutions. The NetSecOPEN standard tests in Avalanche provide an easy-to-use template for testing modern network devices.

Ordering Information

Description	Part Number
Avalanche ABR Video Streaming Client Server	CMP-ASW-ABR
Avalanche Application Testing Client Sever	CMP-ASW-APP
Avalanche CIFS Client Server	CMP-ASW-CIFS
Avalanche DHCP Client Server	CMP-ASW-DHCP
Avalanche DS-LITE Client Server	CMP-ASW-DSLITE
Avalanche Email Over SSL-SMTP, POP3, IMAP	CMP-ASW-EMAIL-SSL
Avalanche GTP SGSN-GGSN	CMP-ASW-GTP
Avalanche HTTP/2 Protocol Support	CMP-ASW-HTTP2
Avalanche IPSEC Client	CMP-ASW-IPSEC
Avalanche IPV6 Client Server	CMP-ASW-IPV6
Avalanche SMTP POP3 IMAP4 Client Server	CMP-ASW-MAIL
Avalanche Multimedia Messaging SVC MM4 Client SVR	CMP-ASW-MM4
Avalanche 802.1X NAC	CMP-ASW-NAC
Avalanche NFS Client	CMP-ASW-NFS
Avalanche PPTP Protocol Pilot Packet	CMP-ASW-PILOT
Avalanche PPP Over Ethernet Client Server	CMP-ASW-PPP
Avalanche PPTP Protocol	CMP-ASW-PPTP
Avalanche HTTP/3 and QUIC Protocol	CMP-ASW-QUIC
Avalanche Radius Client	CMP-ASW-RAD
Avalanche RTMP Client	CMP-ASW-RTMP
Avalanche SAPEE Protocol Emulation Environment	CMP-ASW-SAPEE
Avalanche SIP Client Server	CMP-ASW-SIP
Avalanche SIP Client Server	CMP-ASW-SIP
Avalanche SSL Client Server	CMP-ASW-SSL
Avalanche Video Streaming Unicast	CMP-ASW-UNICAST
Avalanche Video on Demand Multicast Client Server	CMP-ASW-VOD

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While
Empowering**

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