

C100-S3-MP

For CyberFlood and Avalanche



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 C100-S3-MP is a powerful Layer 4-7 stateful traffic performance solution that is capable of high throughput security testing of high-strength bulk encrypted hyper-realistic traffic. Users now have the ability to test devices to their limits at line rate simulating daily traffic to understand the impact under worse case scenarios.

PERFORMANCE AND FLEXIBILITY

The C100-S3-MP is available in multiple configuration options: 1G, 10G, 25G, 40G, 50G and 100G of Layer 4-7 application and attack traffic, testers are able to specify load variables and easily create tests with mixed traffic profiles emulating real-world network scenarios. With the available SSL/TLS acceleration module the C100-S3-MP can meet today's most demanding test needs for encrypted traffic with high strength ciphers at massive scale.

| C100-S3-MP for Avalanche performance examples* | |
|--|--------------|
| TCP connections per sec | >5,000,000 |
| HTTP GETs/Sec | >4,000,000 |
| HTTPS GETs/Sec | >200,000 |
| HTTP bandwidth | >150Gbps |
| HTTPS bandwidth | >70Gbps |
| Sustained connections | >170,000,000 |
| Sustained IPsec tunnels | >450,000 |
| Sustained video sessions | 300,000 |

* The above numbers are obtained using two QSFP28 C100-S3-MP's with SSL/TLS acceleration option operating as client and server. Unidirectional/bi-directional traffic.

APPLICATION AND SECURITY TESTING SOLUTIONS

The C100-S3-MP for CyberFlood and Avalanche solution provides options from 1G to >100G of capacity, security and performance testing for network infrastructures, Web application infrastructures and media services ensuring Quality of Service (QoS) and Quality of Experience (QoE) for your customers. The C100-S3-MP is compatible with both CyberFlood and Avalanche giving you the most versatility in a Layer 4-7 testing solution.

APPLICATION

- Network performance testing
- Web application testing
- Triple Play testing
- Application Identification testing with over 20,000 application scenarios
- IPsec and SSLVPN assessment
- Advanced video application testing
- Attack and Malware assessment
- Mobile network firewall testing
- Security testing
- Replay any traffic at scale virtually
- Advanced DDoS testing
- High-performance HTTPS/TLS testing
- IPsec and SSL VPN testing

USER REALISM WITH AVALANCHE

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®.

ADVANCED SECURITY AND PERFORMANCE TESTING WITH CYBERFLOOD

CyberFlood is a powerful, easy-to-use web based assessment solution that generates thousands of different realistic application traffic scenarios, attacks, and malware to test the performance, scalability and security of today's application aware network infrastructures. Unlike other test solutions, CyberFlood generates real high performance user applications based on actual application scenarios for realistic security, load and functional testing.

NetSecOPEN Testing Standards-based realistic mixed traffic testing is available for CyberFlood and 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 and CyberFlood provides an easy-to-use template for testing modern network security infrastructures. For more information on NetSecOPEN, go to www.netsecopen.org.



FEATURES & BENEFITS

- **> 100Gbps Line Rate Stateful Traffic-** Provides the capability to generate over 100Gbps of line rate stateful Layer 4-7 traffic. Available in specific configurations for 1G to native 100G interfaces.
- **Flexible Software Options-** The C100-S3-MP is compatible with CyberFlood providing a web-based, easy -to-use yet powerful application and security/attack testing and Avalanche for advanced directed one-ended and two-ended testing
- **Configurations to meet your needs-** The C100-S3-MP for Avalanche comes in a number of different configurations to best meet your specific needs. Real-Time Statistics (across all protocols), and a reporting tool 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 OpenConnect compatible SSLVPN
- **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-** 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, SOAP, 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 an always up-to-date attack database and user and user authentication including: IPSec, SSL/TLS, SSLVPN, 802.1x, Network Access Control (NAC) and RADIUS

C100-S3-MP for Avalanche**Feature**

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| Number of test users | Up to 8 users on specific configurations |
| Type of simulation | Client and Server |
| Network interfaces The C100-S3-MP is available in a number of configuration options | Up to 16x10/100/1000 Copper Up to 16x10/100/1000 Fiber Up to 8x10 Gbps Fiber Interface (MMF or SMF) 4xQSFP28 multi-speed interfaces for support of 10Gbps, 25Gbps, 40Gbps (SR or DAC only) / 50Gbps and 100Gbps (SR4, LR4 or DAC transceivers—not included) |
| Network access protocol | DHCP, PPPoE, IPSec, SSL VPN, 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, TLS v1.0, TLS v1.2, TLS v1.3, QUIC |
| Data protocol | HTTP, HTTPS, HTTP/2, HTTP/3, FTP (Active/Passive), DNS, DNSSEC, DNS over TLS, 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 |
| CyberFlood | CyberFlood provides over 15,000 user applications scenarios covering messaging, business applications, gaming, web, social media and a host of other scenario types |
| Voice protocol | SIP over TCP and SIP over UDP |
| Voice codec supported | G.711A, G.711U, G.723.1, G.726-32, G.728 and G.729AB |
| 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, DASH, Microsoft, and Adobe |
| Video codec supported | MPEG-1, H.261, MPEG-2, H.262, MPEG-4, H.264 |
| Attack generation | Layer 2-4 DDOS Attacks and >20,000+ Layer 4-7 Application Attacks |
| Reporting | Integrated CSV test results analyzer fully customizable with report generation in PDF and HTML |
| Automation | Avalanche — TCL, CyberFlood Full REST API |
| 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 |

ORDERING INFORMATION

| Description | Part Number |
|--|---------------|
| Avalanche C100-S3-MP with 8x10G | CMP-AKIT-021 |
| Avalanche C100-S3-MP with 8x10G MMF 8X1G Copper | CMP-AKIT-022 |
| Avalanche C100-S3-MP with 4x10G MMF 16X1G Copper | CMP-AKIT-023 |
| Avalanche C100-S3-MP with 4x10G MMF 16X1G Fiber | CMP-AKIT-024B |
| Avalanche C100-S3-MP with 16x1G Copper | CMP-AKIT-025 |
| Avalanche C100-S3-MP with 16x1G Fiber | CMP-AKIT-026B |
| Avalanche C100-S3-MP with 8x10G MMF 8x1G Fiber | CMP-AKIT-027B |
| Avalanche C100-S3-MP with 4x10G MMF Fiber | CMP-AKIT-028 |
| Avalanche C100-S3-MP with 4-PORT QSFP28 10/25/40/50/100G (Transceivers Not Included) | CMP-AKIT-042 |

All C100-S3-MP kits come with Avalanche Base software (HTTP, FTP, Telnet and DNS).

Other hardware and software options are available, please contact Spirent Sales for more information.