



SPIRENT

NETWORK SECURITY TESTING



Ensure Your Carrier, Enterprise, and Mobile Network Infrastructure Is Secure

Network protection is the number one IT concern of businesses globally and significant investment is made in security products. Can they really be trusted? Don't rely on vendor claims to thwart attacks that are becoming more complex by the day. Don't put your network at risk. Trust in Spirent to validate that your network security system performs as intended.

The key to successful security testing is knowing what to test, when to test and how to test. Any security solution must have the ability to:

- Detect and prevent hundreds of thousands of known attacks, blended attacks and vulnerabilities
- Maintain throughput with processor-intensive features like content-filtering enabled
- Maintain acceptable performance while under attack

Optimal times to test are prior to making any purchase decision, deployment on the live network, after network upgrades have been implemented to ensure devices are correctly configured, and before new services rollouts. Periodic testing is also advisable, especially at the rate new attacks are surfacing.

Spirent TestCenter™ provides purpose-built, end-to-end security testing ranging from Terabit-scale, at line rate speeds to emulate daily business traffic, to validating security capabilities via fuzzing testing, DDoS replication and much more. Spirent has experts and solutions that will assist in security test planning, either on-site or virtually.

Trusted Performance

Spirent TestCenter with Spirent Avalanche™ and Spirent Studio™ security testing solutions are trusted industry-wide. Spirent TestCenter has won numerous industry awards and has been selected as the test solution of choice for countless public tests because of its capabilities.



SPIRENT TESTCENTER C100

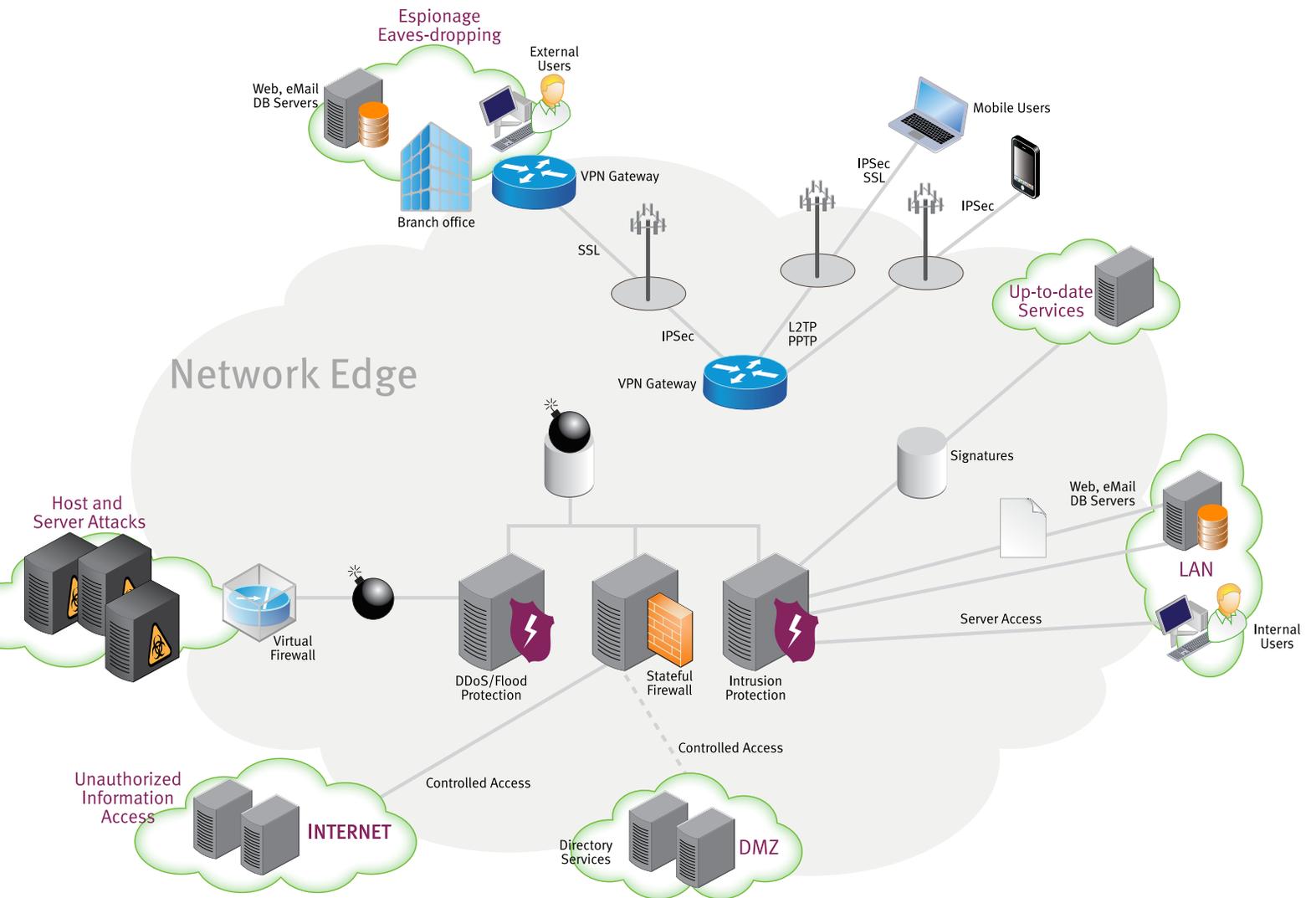
CHECK POINT 61000 SECURITY SYSTEM

Check Point selected Spirent's security solution to test the performance and scalability of the 61000 Security System. Tested with Spirent Avalanche, the 61000 provides customers with the security and scale needed to meet the most demanding enterprise and service provider needs.

"The Check Point 61000 security system is a multi-bladed hardware platform for enterprise data centers, telecommunications carriers and cloud service providers. Testing a high performance system that can scale up to 1Tbps of firewall throughput with support for 70 million concurrent connections and 600,000 sessions per second requires an equally high performance testing solution"

FRED KOST, HEAD OF PRODUCT MARKETING





EANTC SECURITY PERFORMANCE
Crossbeam X80-S

EANTC reached out to Spirent to test Crossbeam's X80-S firewall in a test environment that emulated a next generation mobile network with one million active mobile subscribers and more than 107 Gbps of data throughput.





Network Security Testing Requires Unparalleled Flexibility and Converged Innovation

Spirent tests performance with realism at scale which provides visibility into production network scenarios in the lab with instant feedback. This is vital for enterprises and service providers that experience heavy traffic which may make them more vulnerable to security issues.

Testing the security of today's converged IP networks requires a test solution that can support and validate complex infrastructure enhancements. Upgrades must be made to increase scale and performance and accommodate migration to cloud and virtual technologies. Security systems must be updated for the new environment while maintaining security across existing legacy networks.

Spirent TestCenter™ with Avalanche and Studio provides a fast path forward by enabling equipment manufacturers, enterprise and fixed

and mobile carriers to validate today's all-IP network IDS and IPS abilities, throughput and performance under attack in the lab and across live networks.

Spirent security solutions are capable of Terabit scale testing of millions of concurrent connections for carrier, data center, cloud and large enterprise networks. In addition, they are capable of testing application-aware networks to ensure protection against today's cyber-security threats to mobile devices, tablets and laptops.



SPIRENT TESTCENTER 11U

The Spirent TestCenter 11U chassis is the next generation in chassis architecture, designed to handle complex multiprotocol scale and cloud virtualization testing needs.



SPIRENT TESTCENTER 3U

The Spirent TestCenter 3U chassis is the next generation mobile chassis for Spirent HyperMetrics neXt test modules. It's designed for complex, multi-protocol scale and cloud virtualization testing needs.



4 **SPIRENT TESTCENTER C100**

- Designed for today's secure app-aware mobile, enterprise and carrier networks
- Supports a full range of test cases
- Supports Spirent Avalanche, Spirent Landslide and Spirent Studio applications.

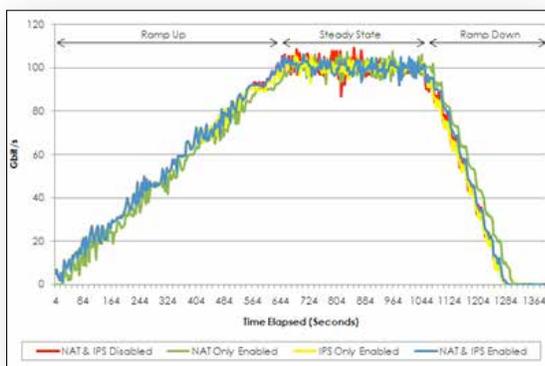


SPIRENT TESTCENTER C1



LAYER 4-7
SPIRENT AVALANCHE™

Terabit Scale
 Application Performance/Security Test UI



Multi 10 Gbps security, attack and performance testing for network infrastructures, Web application infrastructures, virtual/cloud infrastructures and Triple Play services.

- ⊙ 40Gbps line rate support for Spirent TestCenter mX 40G modules
- ⊙ Provides support for virtual environments, including VMware, KVM, QEMU, Zen and Hyper-V
- ⊙ Provides multi-protocol support
- ⊙ Extensive, flexible reporting
- ⊙ 80 Gbps line rate support on C100



- ⊙ Ideal for network element engineering development, design and test groups requiring physical access to a test port on the workbench
- ⊙ Ideal for network equipment manufacturers doing burn-in and production line tests requiring low port count and compactness
- ⊙ Ideal for technical and field marketing groups that need to mirror actual network scenarios and traffic patterns so networks, services and individual network elements can be quickly validated



- ⊙ Validates virtualized network performance, scalability and security
- ⊙ Ensures seamless transitions when migrating to a virtualized data center or cloud environment
- ⊙ Reduces TCO by testing virtualized infrastructure prior to hardware or end-to-end testing with a single integrated system in a hybrid environment

LAYER 4-7
SPIRENT STUDIO™

Application-Aware Security/Performance UI



Performance and security testing for application-aware networks.

- ⊙ Tests the impact of mixed security attacks and real application traffic at scale
- ⊙ Measures the accuracy of DPI-based detection and classification
- ⊙ Validates the effectiveness of configured policies
- ⊙ Tests DUT traffic inspection capabilities of malware, undesirable URLs and spam and its ability to take appropriate defensive actions
- ⊙ Fuzzing testing of security solution for resiliency against unknown zero-day attacks



Save Time, Save Money with Optimized Infrastructure for Network Security Testing

Spirent out-performs and out-scales the competition making it easier to achieve accurate, reliable testing and deterministic results in less time.

Benefit From Scalable Performance and Realism

Spirent TestCenter™ technology is uniquely designed to test security, scalability, and availability from any-to-any point in the infrastructure. Making sure the network is protected from sophisticated cyber-threats, and maintains acceptable throughput and performance when under attack is a critical milestone toward delivering on the expectation of high QoE.

Combining Cloud Core and Intel high performance multi-core processors with the award-winning HyperMetrics™ and HyperMetrics neXt™ platforms, Spirent TestCenter creates the foundation for testing next generation network security. Spirent TestCenter Cloud Core is based on patented technologies designed to add native elastic computing to the Spirent TestCenter Layers 2-7 performance test platform. Cloud Core uses parallel processing to optimize testing tasks across all test ports— ideal for validating security across the most complex converged IP systems. With Spirent TestCenter you can:

- ⦿ Next-gen firewalls
- ⦿ IDS/IPS signature validation
- ⦿ UTM
- ⦿ Web security gateways
- ⦿ Performance
- ⦿ Load balancers
- ⦿ DPI engines
- ⦿ DDoS testing
- ⦿ WAN optimizers
- ⦿ Resiliency and fuzzing testing

Spirent TestCenter 40/100G Ethernet HyperMetrics neXt Test Module



Modules support both 100G and 40G operation

- ⦿ 1-port 100G CFP / 2-port 40G QSFP+ module
- ⦿ 2-port 100G CFP / 4-port 40G QSFP+ module

CFP, CXP, and QSFP+ in a single module

- ⦿ 100G CXP support with ACC-6068A adapter (supports copper connection)
- ⦿ 40G QSFP+ support with ACC-6069A adapter

Avalanche Layer 4-7 user Quality of Experience testing

- ⦿ Compatible with industry leading high-performance multi-protocol application layer testing
- ⦿ Provides full client/server capability for self-contained deep session layer 4-7 testing
- ⦿ Provides line rate (up to 40Gbps per module) of stateful traffic and millions of emulated users capacity
- ⦿ Provides hyper-realistic web, media, security/encryption, attack and business traffic emulation
- ⦿ Provides extensive high-performance HTTPS/SSL capabilities
- ⦿ Provides comprehensive IPsec tunnel and encrypted traffic capabilities allowing you to test ANY traffic over IPsec tunnels

HyperMetrics neXt mX 10G Ethernet Module



- ⦿ Author tests representative of events likely to be encountered in real networks
- ⦿ Export these visual, automated tests as a script to be executed within any regression test harness

Achieve Accurate, Intelligent, Dynamic Results

The industry's most accurate and comprehensive set of real-time results gives you the insight to eliminate customer-found defects. However, a test tool that delivers millions of individual metrics is not enough. Intelligent Results provide data correlation with hierarchical results— bringing important information to the user's attention and making drill-down analysis simple for transmit and receive statistics.

Experience Increased Testing Efficiency

Spirent TestCenter built-in automation tools make it easy to maintain a test program that's efficient and increases product or service speed to market — which is critical in today's competitive world.

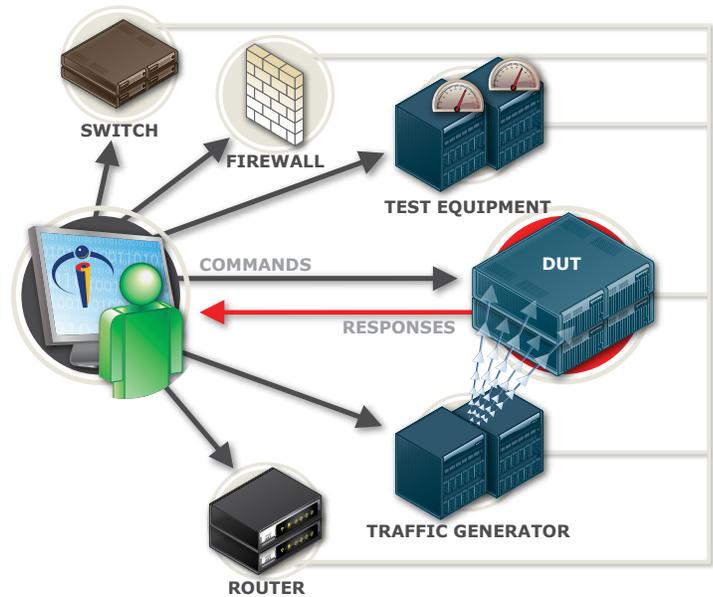
- **Spirent Test Expert** software wizards show you how to test. Test cases guide the user through pre-defined test cases step-by-step. Finalized test cases may then be run immediately from the test environment or saved as a Tcl script for running in an integrated regression environment.
- **Spirent TestCenter API** is a powerful API that enables the test case author to replicate practically any GUI functionality in a user script. Only Spirent TestCenter provides native programmatic interfaces in Tcl, Perl, C, Java and Ruby, allowing you to work in the language of your choice.
- **Spirent TestCenter Command Sequencer** is a visual test authoring tool within the Spirent TestCenter UI. Users can:
 - ▶ Emulate dynamic network behavior in test cases without writing a single line of code.
 - ▶ Emulate dynamically changing network conditions
 - ▶ Author tests representative of events likely to be encountered in real networks
 - ▶ Export these visual, automated tests as a script to be executed within any regression test harness

Spirent iTest

iTest is a software solution for test productivity that integrates with Spirent TestCenter. iTest allows developers and testers to rapidly develop new test cases without specialized programming expertise. iTest uses unique and differentiated technologies to capture user actions, orchestrate network testing across multiple devices, and easily parse and analyze unstructured device responses. In addition, iTest automatically documents all user actions and system device responses saving significant time. The result is portable and maintainable test cases that can be used for “lights out” regression testing.

Spirent iTest provides a comprehensive approach for rapidly authoring test cases. With iTest, developers, testers, and customer-facing personnel can:

- Orchestrate system testing with network devices and traffic generators to create an automated system test solution
- Sessions supported include CLI, Test Equipment, SNMP, Web, Java Swing, Flash (Flex), web services, VNC, serial port, Tcl, and VMware vSphere
- Utilize advanced analysis and conditional logic for pass/fail criteria and branching
- Automatically generate comprehensive and customizable documentation for every run, providing proof of testing and concise information for bug reports and issue resolution
- Store test cases and test results in customer's choice of source control management and database systems, including SVN, SQL, HP ALM, and IBM Rational
- Create graphical topologies that provide a single-click connection to any testbed device for setup, teardown, or diagnostic procedures
- iTest topologies can be reserved for specific test case execution and used to remotely change network topologies using Layer 1 and Layer 2 switches



Spirent OnDEMAND Test Services

Spirent OnDEMAND is a suite of packaged test services designed to detect and mitigate problems before you launch your new enterprise infrastructure, cloud services or applications. Through the use of proven, advanced techniques, a structured testing approach, and full benefit of Spirent's award-winning Spirent TestCenter test equipment, Spirent Avalanche and Spirent Studio Security test solutions, we eliminate risks of inadequate security for new or enhanced data centers, converged networks, multi-play solutions and applications, and services.

Spirent OnDEMAND leverages the expertise of the Spirent Professional Services team to provide hands-on assistance to meet all major security testing needs. Our test methodology and automation experts are IETF and RFC authors have developed industry benchmarks and best practices. They assist in defining standards and performance tests for standards bodies and industry forums.

Spirent OnDEMAND has developed two categories of on-site package Security test services:

Security Test Package

- Attack detection/DDoS
- Evasion
- Worm outbreaks
- Performance under attack

Security & Application Performance Test Package

- Security testing (Package 1)
- Concurrent connections
- Bandwidth/Throughput
- Failover/High availability

OnDEMAND network security test services include test equipment rental, scalability and volume testing, endurance and soak testing, performance evaluation and tuning, and load and stress testing for vendor device selection.



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