Everything You Need to Ensure the Highest Quality of Service

“Spirent allowed us to demonstrate 40Gbe performance with sub 285 nanosecond latency within the GS0072 and also demonstrate the scalability of the Gnodal Fabric vital in delivering data center applications.”

BOB FERNANDER, CEO

Spirent delivers an end-to-end testing solution that enables super high performance testing with deterministic results. Service providers, NEMs and enterprises can use it to test, measure and assure their networks and deploy services with confidence.

**Trusted Performance**
Spirent consistently delivers unmatched scalability, performance and realism in service provider, network equipment manufacturer (NEM) datacenter, enterprise and public tests. Spirent Cloud Core™ technology adds native elastic computing to the Spirent Layer 2-7 software platform so users can optimize testing tasks with parallel processing across any number of test ports.

**Unparalleled Flexibility**
Spirent hardware solutions are designed for customers’ testing requirements today and tomorrow. From the ultra portable 2-port Spirent C1 for router, switch, application and security testing to the Spirent N11U chassis for converged, high scale, multi-service device testing to Spirent Virtual solutions for data center infrastructure and cloud testing, Spirent enables seamless testing within and across physical and virtual environments.

**Converged Innovation**
Industry leaders use Spirent to keep pace with the latest technologies. Whether it’s testing traffic across dual stack IPv6 and IPv4 routers and switches, validating data and individual virtual machines within the cloud infrastructure, performing application-aware security testing across virtualized environments or converged network testing, Spirent is there with the solutions and protocol standards support necessary to guarantee security, Quality of Service (QoS) and Quality of Experience (QoE). Using the Spirent unified platform, protocols can be layered and scaled with confidence and without performance degradation.
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**Optimized Infrastructure**

Spirent offers the hardware, software and services necessary to reduce costs and reduce time to test. Whether using Spirent modules to speed testing or taking advantage of new usability enhancements that provide even faster configuration and analysis, Spirent is there with the high-performance solutions and expertise you need to configure, execute, analyze and optimize tests.

Automation plays a critical role in the success of any test program today. Spirent Test Expert adds the intelligence to Spirent in the form of software wizards that guide the user through a set of pre-defined test cases, showing the user how to test.

Spirent’s API is a powerful tool that can replicate virtually any GUI functionality in a script and the Command Sequencer is an authoring tool seamlessly integrated into Spirent’s GUI. These automated tools help you manage the test cycle from start to completion.
Spirent Delivers Trusted Performance

Spirent has earned the industry’s respect as the most trusted benchmarking platform for measuring performance, density, scale and security. When the industry needs performance with accuracy, reliable results, and a versatile, scalable test solution, it turns to the smarter platform — Spirent.

**HIGH PERFORMANCE**

Alcatel-Lucent 7750 Router with FP3 processor.

Alcatel-Lucent used Spirent to verify FP3, its 400G chipset for extreme scale and multi-protocol routing capabilities. Spirent enables multi-protocol testing with a test port density of one-to-one between the test port and device under test (DUT).

**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.
HIGH DENSITY

Juniper QFabric System Test 1,536 ports of 10G Ethernet

Juniper Networks and Network Test used Spirent dX modules for the industry’s first public 1,536 port 10G Ethernet test. This is 4X the port density ever publicly tested. Network test, an independent test lab, conducted the most rigorous and extensive test of QFabric, Juniper’s single layer data center fabric and foundation for new networks.

“Spirent’s test equipment enabled the validation and demonstration of these benefits at a large scale.”

— R. K. ANAND
EXECUTIVE VICE PRESIDENT & GENERAL MANAGER

2012 Frost & Sullivan Ethernet Market Leadership Award

Spirent Communications is the leader in the global Ethernet testing market with a share of 30.9 percent. Frost & Sullivan recognized Spirent as the market leader in each segment (1GbE, 10GbE and 40/100GbE) that it tracks with shares of 27.9 percent, 32.9 percent and 34.1 percent respectively.

15 Terabits
Spirent Platform Hardware Delivers Unparalleled Flexibility

A complete, modular testing solution for today’s and tomorrow’s technologies as well as next generation networks, the Spirent platform evolves as testing needs change and grow, protecting test equipment return on investment.

The Spirent N11U chassis is the next generation in chassis architecture, designed to handle complex multiprotocol scale and cloud virtualization testing needs.

The Spirent N4U is the next-generation mobile chassis. It is designed for complex, multi-protocol scale and cloud virtualization testing needs. The N11U and N4U are built to accommodate the latest generation Spirent dX2, fX2 and CFP-2 based 100G test modules.

- Designed for today’s secure app-aware mobile, enterprise and carrier networks
- Supports a full range of test cases
- Supports Spirent Avalanche and Spirent Landslide applications.
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
Spirent Platform Software Delivers Converged Innovation

From emulating high scale networks to high performance applications, Spirent gives you the ability to test the breadth and convergence of the technologies.

**Layer 2–7**

**SPIRENT TESTCENTER™**

Network Infrastructure Test UI

The Spirent GUI emphasizes ease of use while offering very powerful capabilities and a high degree of flexibility.

- Its object-oriented interface simplifies the creation of multi-protocol topologies
- It introduces the emulated device concept and automatically propagates the device’s configured addresses to all protocols that it is required to emulate
- Built-in wizards and configuration accelerators reduce the time-to-test
- Cause-effect testing is simplified because both results and test configuration can be seen in a single view

**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 mX 40G modules
- Provides support for virtual environments, including VMware, KVM, QEMU, Zen and Hyper-V
- Provides multi-protocol support
- Extensive, flexible reporting

N11U N4U C100 C1 Virtual
Spirent iTest is a software solution for test productivity that integrates with Spirent TestCenter. Spirent iTest provides an efficient approach for rapidly creating tests and reproducing issues.

The C100 platform emulates millions of mobile data subscribers simultaneously accessing the wireless network.

- Emulates millions of mobile data subscribers
- Emulates all key wireless core packet data network elements
- Combines control-plane and data-plane simulation
- New dual-port 10G interface significantly reduces the amount of equipment, power and connections required to test a high-performance mobile network
Spirent Platform Delivers Optimized Infrastructure

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

Unrivaled Performance and Scale
Combining Cloud Core™ and Intel’s high performance multi-core processors with the award-winning Spirent platform creates the foundation for testing a new generation of converged IP carrier-grade cloud data centers and 4G/LTE mobile networks.

Spirent Cloud Core™ is based on patented parallel processing technology that adds native elastic computing and optimizes testing tasks to Spirent TestCenter Layers 2-7 performance test platform. It delivers:
- Elastic protocol scale
- Data in real-time and identifies that one bad packet on the fly while the test continues to run
- Scale and accuracy across chassis’ in real-time
- Changes TCP/IP stacks in real-time

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 that no other test platform can.
- Intelligent Results correlates data with hierarchical results to find the needle in the haystack and bring defects to the user’s attention
- Simplify drill-down analysis for transmit and receive statistics delivers the information when you need it

Increase Testing Efficiency
Maintaining a test program that’s efficient and increases product or service speed to market is key in today’s competitive world. Reduce your time to test with Spirent TestCenter’s built-in automation tools.
- **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 can be run immediately from the test environment or saved as a Tcl script
  - Green capabilities include automatic shut-down and compliance with ATIS automatic energy efficiency tests
- **Spirent TestCenter API** enables the test case author to replicate GUI functionality in a user script. It lets you to work in the language of your choice.
- **Spirent iTest** provides a comprehensive approach for rapidly authoring test cases. With iTest, users can:
  - Configure and orchestrate system testing with numerous devices and traffic generators to create an automated system testing solution
  - Utilize advanced analysis and conditional logic for pass/fail criteria
  - Create test cases for products or applications requiring CLI, SNMP, Web, Java Swing, Flash (Flex), web services, VNC, serial port, Tcl, or VMware vSphere
  - Automatically generate documentation for every run, providing proof of testing and concise information for reports and resolution
  - Easily integrate with existing infrastructures and commercial products for a tailored solution
  - Create graphical topologies that provide a single-click connection to any device in the testbed and run a setup, tear down, or diagnostic procedure

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**Spirent offers the highest flexibility of computing resources at the best cost model compared to traditional performance test modules.**

- 2x application encryption performance per module matches the most demanding security testing needs
- 3x emulation scale test coverage.
- Single module testing of cloud data centers.
- 4x port density with half the power consumption. Minimizes the need for additional space and power to scale to 1.92 terabits in a single chassis.
- 8x network performance with line rate data. Extreme routing and stateful application traffic on all ports.
Spirent mX
MOBILE MULTIPLY EXPERIENCE
Spirent’s highest performing test module over high speed ethernet. Ensures performance and scale of high-density core networks and converged multi-play networks and devices.
- 2-port 100G module on CFP-2
- 2, 4, or 8 10GbE SFP+ port module options
- Line rate Layer 2-3 and stateful protocols at mobile subscriber data scale
  - 80 Gbps per module
  - 960 Gbps per chassis
- Test access, routing, mobile backhaul, mobility, cloud infrastructure and application performance with a single module
- Copper version available

Spirent fX2
HIGH PERFORMANCE COMPUTING
fX2 module delivers the highest density and lowest total cost of ownership in its class and is ideal for testing next-gen multi-terabit service provider and cloud infrastructure
- 2-port 100G using CFP-2 optics
- 20-port 10G/5-port 40G dual-speed
- High Scale Terabit Routers—Test Ethernet core routers with multi-protocol topologies and line rate traffic
- Data Center Fabrics—Validate forwarding performance and functional capabilities
- Enterprise Switches—Validate forwarding performance and functional capabilities of next-generation enterprise campus and data center switches with ultra low-latency, high port density and FCoE capabilities

Spirent dX2
FABRIC PORT DENSITY
Highest density 100G/40G/10G tri-speed CFP2/CFP4 and 40/10G dual speed QSFP+ modules for verifying next generation fabric and switch architectures
- 4-port 100G/8 port 40G/ 32 port 10G CFP2/CFP4 module
  - 400 Gbps per module
  - 4.8 Tbps per chassis
- 8-port 40G/32 port 10G QSFP+ module
  - 320 Gbps per module
  - 3.84 Tbps per chassis
- Load DUT to terabit fabric and backplane capacity
- Designed to test Industry’s data center Ethernet Fabrics

“Verifying high-speed, high-capacity router performance is not easy. Spirent’s high port density and simple GUI provided the results necessary to verify the features and performance of the router.”

— MR. JIN, SENIOR ENGINEER

Spirent Command Sequencer is a visual test authoring tool integrated within Spirent. Users can:
- Emulate dynamic network behavior in test cases without writing a single line of code
- Author tests representative of events encountered in real networks
- Export these visual, automated tests as a script to be executed within any regression test harness

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