# Spirent **TestCenter™**

Virtual

Features

- Layer 2–7 test and measurement capabilities for legacy and emerging protocols

- Comprehensive emulation protocols available for switching, routing, access, SDN, DataCenter and applications

- Support for testing performance, throughput, availability and scale of OpenStack, VMware vSphere/vCloud, Microsoft Azure, Amazon Web Services and other cloud platforms to deploy best in class cloud platforms

- Rich API support in various languages like Python, Perl, Tcl. Support for High Level APIs like REST which are easy to integrate in existing automation frameworks such as ROBOT

- Unified testing architecture that ensures full compatibility, 100% portability of test cases from hardware to virtual platforms

Benefits

- Maximize test coverage with 100% flexible and portable test cases from hardware to virtual

- Accelerate innovation by seamlessly migrate to virtualized datacenter or cloud deployments with lowest possible risk

- Validate NFV and Cloud migrations by characterizing the performance of virtual applications in a multitude of real-world scenarios

Spirent TestCenter™ Virtual is the industry-leading L2 to L7 converged virtual test solution that optimizes the performance of network services and infrastructure. TestCenter Virtual creates advanced testing topologies emulating both scalable control plane and data plane to stress, both physical and virtualized network functions. Hence, Service Providers can ensure that network services adhere to SLAs and Data Center Operators can ensure scalability and resiliency to deliver next generation applications and services.

Spirent TestCenter Virtual provides effective usability, portability, scalability, cost effectiveness with a support for legacy and latest protocols. Whether you are adopting Virtualization or Containers, Spirent solutions make it easier for Service Providers, Data Center Operators and Cloud Providers to lead their NFV and Cloud deployments.
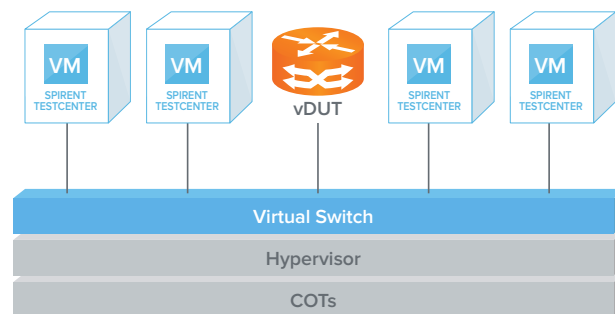

Physical to Virtual Migration

As physical network functions are being transformed to be delivered in software form factor, the expectation in terms of the functionality, performance and predictability remains significantly high. All the investment that was made over the years in testing carrier grade network functions like routers, switches, firewalls, etc. is expected to be ported over in the virtual world.

Spirent TestCenter Virtual delivers a unified testing architecture that ensures full compatibility with any Spirent TestCenter interface for accurate, high performance FPGA hardware generated network traffic. It enables porting of prior investment in test cases for physical to virtual. It also enables the creation of a virtual test lab to speed up development, reduce the total cost of ownership (TCO) of testing resources and optimize infrastructure utilization by testing in a multitude of real-world scenarios of software prior to hardware availability.

Best Throughput and Timing Solution in the Market

Spirent TestCenter Virtual is the most advanced Virtual testing solution that now supports datacenter speeds ranging from 1G, 2.5G, 5G, 10G, 25G to 40G. Maximum throughput is achieved on regular 1VM/3cores footprint with full STC Virtual functionality*.

• Allows benchmarking for RFC use cases which supports high 64byte performance per core (see Fig 2.)

• Enhanced NTP with new optimized timing library with precision as low as 100 micro seconds

• Support for "Burst mode" speeding up NTP synch from average 30 minutes to 1 minute

• HTTP / TCP throughput generator with 5Gbps goodput and ~50k connections per second

*Spirent TestCenter Virtual Performance (*uses DPDK driver)*
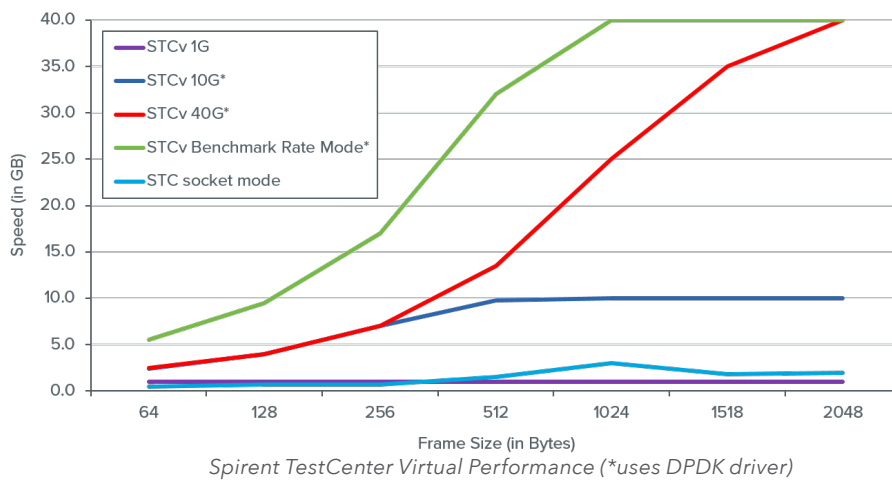
Supports best-in-class leading Virtualization and Cloud Platforms

There is ever-increasing use of containers in DevOps for simplifying the continuous delivery process by enabling easier portability of code across development, test and production environments. Spirent TestCenter Virtual is now offered in Container format to expedite the developer productivity. It is industry's first containerized network test solution available in Docker and LXC formats with up to 1G throughput per Container.

Spirent TestCenter Virtual enables you with support on wide range of Hypervisors like KVM, ESXi, Hyper-V, Oracle VM, and emerging Cloud platforms such as OpenStack, Amazon Web Services, Microsoft Azure, etc.
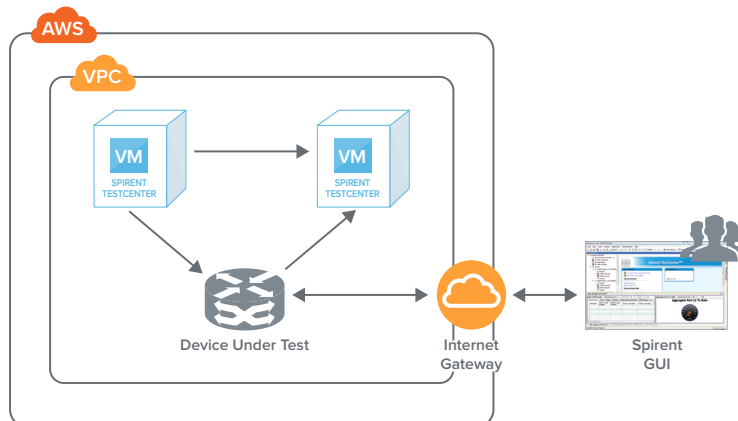
Continuous Cloud Deployments

DevOps and continuous integration enables faster time to market and improves SLAs for organizations that adopt Continuous Integration and Delivery mechanism. In an increasingly competitive global market, companies must deliver high quality products and services to market in a cost effective and timely manner. Organizations require automated and scalable solutions to improve their ability to build, test, and deploy software.

Spirent TestCenter Virtual seamlessly integrates with all known cloud management systems like VMware, OpenStack etc. It also has rich API support such that the Virtual Machine is programmable and can be configured and managed in a third-party orchestration framework. API supports all capabilities available in the Spirent TestCenter GUI via the API.
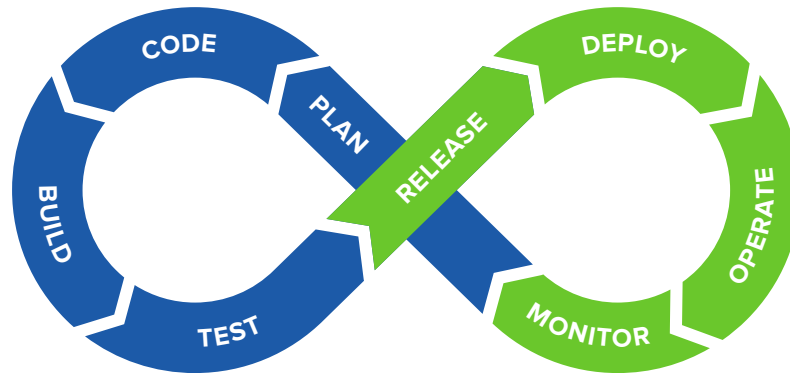
NFV Validation

Network Functions Virtualization (NFV) is an industry term used to denote the capability of delivering network functions through virtualized compute infrastructure. While NFV offers many benefits to network and data center operators, there is an abundance of uncertainty in selecting technologies, configuring infrastructure, optimizing performance and hardening for security. One not only has to test the Virtual Network functions but also the virtual infrastructure on which the Virtual Machines are hosted. The functionality and performance of the Virtual Network Function are deeply dependent on the predictability of the NFV infrastructure.

Spirent TestCenter Virtual delivers high rate layer 2-7 functional and performance testing of virtual and physical network resources by generating simultaneous LAN unicast, multicast, and VLAN traffic along with SAN IO as well as, stateful application protocols such as HTTP and FTP.

Spirent **TestCenter™**

Virtual
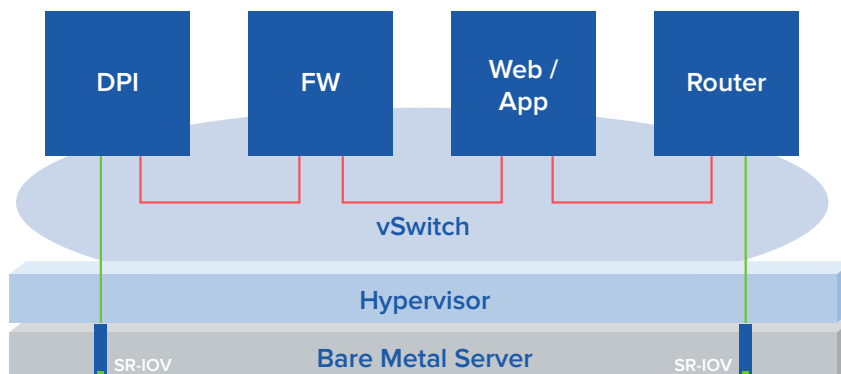
About Spirent Communications

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks.

We help bring clarity to increasingly complex technological and business challenges.

Spirent's customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled.

For more information, visit: www.spirent.com

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Technical Specifications	
VM Specifications	• CPU–1 to 3 virtual CPUs (depending on the performance requirement) • Memory–1 to 4 GB (depending on the performance requirement) • Network interfaces–1 management and upto 9 test ports • Port Speeds–100M, 1G, 2.5G, 5G, 10G, 25G, 40G
Packaging	Software is available in Ova, qcow2, vhd, img, rpm and deb formats
Supported hypervisors	• VMWare ESXi 5.0, 5.5, 6.0 • QEMU/KVM on Fedora 20, CentOS 6.5, Ubuntu 12.04, Ubuntu 14.04 • Oracle VM • Hyper-V
Cloud platforms	OpenStack, AWS, Azure
Container platforms	LXC, Docker
Supported network adapters and drivers	• Intel I350 Gigabit Network Card • Intel X520-DA2 10-Gigabit SFP+ Network Card • Intel Ethernet Controller XL710, 40Gb QSPF+ • Mellanox MT27520 Family [ConnectX-3 Pro] 40Gb QSFP+ • Drivers: igb, ixgbe, i40e, mlx4_en
Automation	TCL, Python, Perl, Java, C, C#, Ruby, REST
Routing and Switching protocols	BGP, OSPF, ISIS, BFD, Multicast, Unicast, IPv4/IPv6
SDN protocols	PCEP, Segment Routing, OSPF, ISIS, BGP, BGP LS, BGP Flow Spec, OpenFlow switch emulation, OpenFlow controller emulation
DataCenter protocols	VXLAN-EVPN, EVPN-MPLS, EVPN-PBB, EVPN-IRB, EVPN-VPWS, FCoE, OTV, TRILL, LISP, SPB, LISP, VEPA
Access protocols	802.1x, IGMP/MLD, ANCP, L2TP, DHCP, DHCPv6, PPPoE
Application layer protocols	HTTP, FTP, TCP, Video, IPTV
RFC	2544, 2889, 3918

Ordering Information	
Description	**P/N**
Spirent TestCenter Virtual port – speeds of 100M, 1G, 2.5G, 5G, 10G, 25G, 40G	P/N varies based on speed
Virtual Routing bundle	V-SPK-9001/2
Virtual Switching bundle	V-SPK-9003
Virtual MBH bundle	V-SPK-9005
Virtual Access bundle	V-SPK-9006/7
Virtual Multiplay bundle	V-SPK-9008
Virtual RFC-2544 with VLAN network device benchmark test package	V-TPK-1000
Virtual RFC-2889 with VLAN switching benchmark test package	V-TPK-1001
Virtual RFC-3918 Multicast benchmark test package	V-TPK-1042
Virtual Unicast Routing Convergence test package	V-TPK-1050

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Promise. Assured.