

Spirent **Landslide**TM **Virtual**

Functional and performance testing for Mobile, Wi-Fi, IMS and Diameter networks

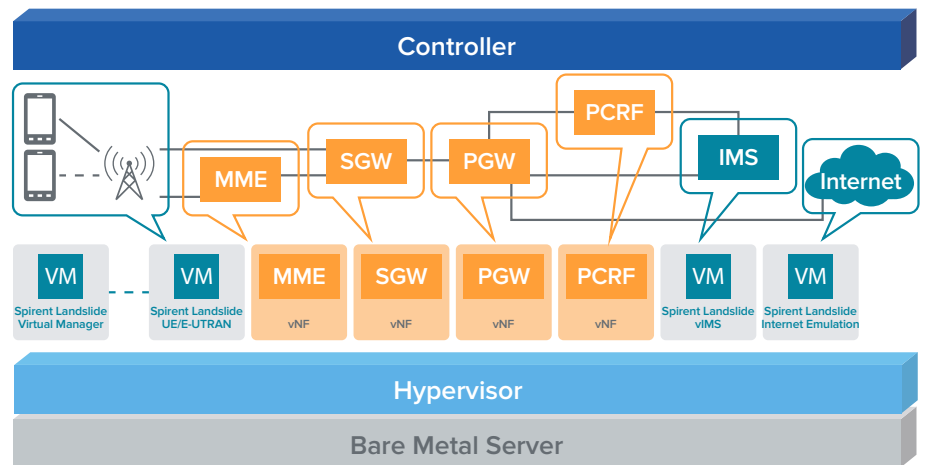
Features

- Total coverage for control and data plane testing from Layer 2 to 7
- Comprehensive testing of Mobile, Wi-Fi, IMS and Diameter interfaces and nodes
- High performance VM for throughput validation of Gateway VNFs
- Full integration with the Landslide GUI, automation and hardware platforms
- Supports RESTful-API and HEAT templates for orchestrated deployment and control

Benefits

- Equip R&D engineers with a complete virtual environment for continuous integration / DevOps
- Isolate Network Functions to validate functionality and performance
- Verify end-to-end service chain functionality and performance
- Validate services with real-world call models and measure Quality of Experience KPIs

Spirent Landslide Virtual emulates the control and data traffic of mobile subscribers moving through the network while using carrier and OTT services. The solution incorporates a complete suite of Mobile Core, Diameter, IMS and Wi-Fi network nodes and interfaces. This enables complete end-to-end network validation or isolation of virtualized EPC, Wi-Fi controller, and Authentication, Authorization, & Accounting, Policy and charging functions. Spirent Landslide Virtual offers maximum testing capabilities and performance with a minimal virtual footprint.



Primary Test Cases

Spirent Landslide's unique testing methodologies combine sets of node emulators and end-to-end test cases to offer service providers and equipment vendors, a fully controlled test environment to:

- Validate system scalability and identify capacity limits
- Measure control plane capacity
- Stress data plane performance
- Perform Intra-LTE and I-RAT mobility testing
- Characterize system before trial/delivery
- Identify performance ceilings
- Analyze impact of Busy Hour Call Modeling that includes Mobility to/from LTE, GSM, UMTS, eHRPD and Wi-Fi networks

Special Use Cases

The fully virtualized version of Spirent Landslide allows Carriers and NEMs to expand testing in areas such as:

Use Case-1 Orchestrated Test

- Spirent Landslide becomes a 'tenant' in the virtual network
- REST-API controls test sessions and handles reporting back to the MANO
- VM auto-scaling and migration

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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Use Case-2 Portability

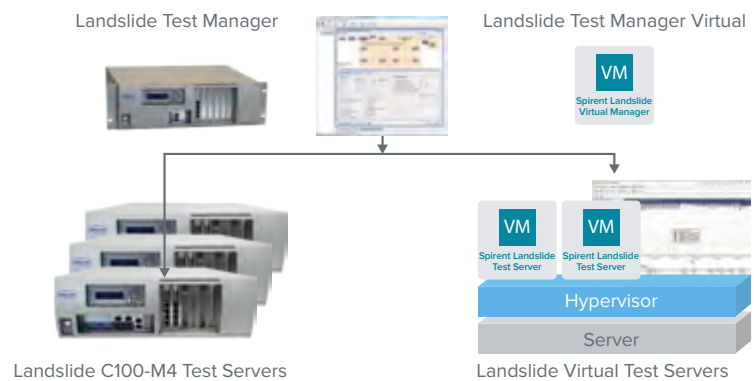
- Spirent Landslide Virtual on-boarded with customer’s SUT
- Quick turn up of demos, sanity checks and active testing

Use Case-3 vEPC Resiliency

- Spirent Landslide Virtual simulates link and node failures
- Emulates Redundant and load balancing Nodes and vNFs

Use Case-4 vNF Sandbox

- Sandbox (‘virtual lab network’): Spirent Landslide emulates all nodes in the RAN and Mobile Core Network as modules
- SUT vNFs replace Spirent Landslide modules for quick functional validation of protocols, network elements and service chains



Technical Specification

Supported Hypervisors	VMware ESXi, QEMU/KVM, XEN	
Packaging	vmdk, qcow2	
Orchestration	VMware, Openstack	
Max Test Servers Per Manager	Hardware C50 L-C50-S4-MGR	2 Physical C50 TS + 10 Virtual Small TS + 4 Virtual Large TS
	Hardware C100 L-C100-S4-MGR	32 Physical Test Servers or 64 Virtual Test Servers
	Virtual C50 L-C50-MGR-VTAS	2 Physical C50 TS + 10 Virtual Small TS + 4 Virtual Large TS
	Virtual C100 L-C100-MGR-VTAS	32 Physical Test Servers or 64 Virtual Test Servers
Virtual Test Server Max Scale	L-S1-VTS (Small)	1,000 UEs
	L-L1-VTS (Large)	100,000 UEs
	L-XL1-VTS (Extra Large)	400,000 UEs
	L-XXL1-VTS (XX Large)	1,250,000 UEs
High Performance VTS License L-FT-632-VTS	6 Core or 8 Core High Performance VM available for Large, Extra Large and XX Large VMs	
VM Specifation - CPU/Memory/Storage VM size determines #cores & memory, consult Installation Guide for exact configuration requirements	Virtual Test Manager	4 Cores @ 2 GHz / 24GB / 20GB
	Virtual Large TS	1 Cores @ 2 GHz / 16GB / 20GB
	Virtual Large TS DPDK	2 Cores @ 2 GHz / 16GB / 20GB
	Virtual Large TS HP	8 Cores @ 2 GHz / 16GB / 20GB
Automation	Tcl, RESTful API	