



# LANDSLIDE

## GPRS PERFORMANCE TEST APPLICATION

Spirent's Landslide™ General Packet Radio Services (GPRS) performance test application is the only mobility test tool that simulates real-world traffic models for GPRS wireless core packet data networks. Landslide GPRS is part of the Landslide family of test applications that are available on Spirent's proven Landslide platform.

Landslide GPRS is a comprehensive end-to-end test system that emulates millions of mobile data subscribers, all accessing the wireless network simultaneously. By emulating key wireless core packet data network elements and combining control plane and data plane simulation, Landslide GPRS provides real-world emulation of millions of mobile nodes in various stages of activation, deactivation and handoff between cells while transmitting and receiving real-world application data.

Landslide GPRS allows GGSN equipment vendors to accurately specify the performance characteristics of their equipment under the real-world conditions experienced in their customer's networks. It also allows service providers to measure the performance of their GPRS networks and to validate new features and services in the lab. By simulating real users with real applications, Landslide GPRS gives the service provider peace of mind in knowing the transition from the evaluation lab to the live network will be smooth and free of performance problems.

### APPLICATIONS

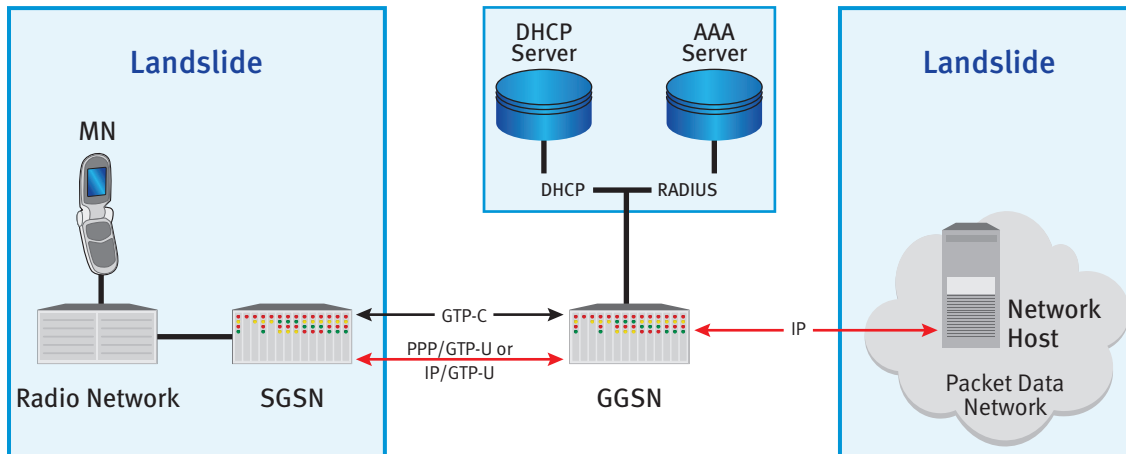
- Validate system scalability and identify capacity limits
- Measure call/data performance
- Characterize system before trial/delivery
- Identify performance ceilings
- Enable accurate capacity planning

### FEATURES & BENEFITS

- Realistic, real-world simulations allow equipment vendors to accurately specify the performance characteristics of their equipment under real-world conditions
- Simultaneous control and user plane testing permit service providers to measure the performance of their network and to validate new features and services in the lab
- Unmatched scalability allows the user to simulate subscriber loads ranging from a small rural town to the largest metropolitan city
- Standard Web browser interface means there is no need to load software onto user equipment
- Emulation of multiple network elements allows the user to test in a variety of network topologies, providing more effective utilization of lab equipment and reducing capital expenditure and ongoing support costs associated with a test lab
- Automation control supports the user in running many test cases simultaneously or serially on multiple Landslide test servers, creating real-world scenarios for heavy load and long duration stability tests
- TCL Interface is for the user to control/monitor the Landslide from a higher level management system, making it possible to compile specific test reports for both the emulation (Landslide) and the device under test
- GGSN Nodal Testing allows the test system to emulate MNs and SGSNs for Gn interface testing, and can optionally simulate a Network Host on the Gi interface of the GGSN for testing the bearer plane. Additional SGSNs can be simulated to test mobility handoffs.

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GGSN Testing

The GGSN Nodal test case is used to test a GGSN's ability to establish and maintain PDP contexts with an SGSN and its bearer-plane traffic establishment and handling capability during inter-SGSN mobility. Optional DHCP and AAA emulators can be used to complete the GGSN network environment and remove any performance bottlenecks due to those nodes.

- GPRS VPN Testing - The GPRS VPN model allows the MN to securely access a private network across the PDN. The GGSN Nodal test case supports L2TP and IPsec VPN models.

## TECHNICAL SPECIFICATIONS

- Test Activities
  - Capacity Test
  - Session Loading
  - Inter-SGSN Mobility
  - QoS Update
  - Session Loading with Mobility
- Landslide Manager
  - Up to 125 user accounts
  - Up to 48 simultaneous users
  - Up to 32 Landslide test appliances
- Landslide Test Server (without performance accelerator)
  - 400,000 simultaneous sessions
  - Up to 11 (total) primary or secondary tunnels per mobile station
  - Up to 4.8 Gbps of bearer traffic
  - Activate/deactivate up to 2,000 sessions per second
  - Up to 3 simultaneous users per test appliance
  - Emulate up to 1,000 SGSNs
- Landslide Test Server Ethernet ports
  - 4-port 10/100/1000Base-T NIC
  - 4-port 1000Base-SX NIC
  - Single-port 10 Gigabit XF SR NIC
- Protocol Support
  - Gn – GTP v0 and v1, PPPoGTP, IPv4, IPv6, VLAN tagging, Direct Tunnel
  - Gi – IPv4, IPv6, RIPv1 and v2, BGPv4
  - Stateful data traffic
- Referenced Specifications
  - 3GPP TS 09.060 GPRS Tunneling Protocol (GTP) (Release 1997)
  - 3GPP TS 29.060 GPRS Tunneling Protocol (GTP) (Release 4 and beyond)
  - 3GPP TS 03.060 GPRS Service Description; Stage 2 (Release 1997)
  - 3GPP TS 23.060 GPRS Service Description; Stage 2 (Release 4 and beyond)

ORDERING INFORMATION	
DESCRIPTION	PART NUMBER
<b>LANDSLIDE GPRS TEST SYSTEM</b> Landslide Manager, Test Server and GPRS Test Application. Allows users to test GPRS based GGSNs	<b>L-KIT-1001</b>
<b>LANDSLIDE TS WITH GPRS APPLICATION</b> Landslide Test Server with GPRS application. Must be purchased as an expansion to a GPRS Test System	<b>L-TS-1001</b>
<b>LANDSLIDE GPRS TEST APPLICATION</b> Adds GPRS Test Application to an existing Landslide Test System.	<b>L-APP-001</b>
<b>LANDSLIDE GPRS GB TEST APPLICATION</b> Adds GPRS test application to an existing Test System.	<b>L-APP-015</b>
<b>LANDSLIDE IP DATA APPLICATION</b> Adds IP Data Test Application to an existing Test System.	<b>L-APP-007</b>
<b>AAA RADIUS SERVER EMULATION</b> Adds AAA RADIUS server emulation capability to a Landslide Test.	<b>L-FT-003</b>
<b>DYNAMIC IPSEC EMULATION</b> Adds IPsec emulation to an existing Test System. Requires L-ACC-004 per Test Server.	<b>L-FT-004</b>
<b>DHCP SERVER EMULATION</b> Adds DHCP server emulation to a landslide Test System.	<b>L-FT-006</b>
<b>L2TP SERVER EMULATION</b> Adds L2TP server emulation to a Landslide Test System. Adds the ability for the Landslide to simulate an LNS server.	<b>L-FT-008</b>
<b>AAA DIAMETER SERVER EMULATION</b> Adds AAA Diameter server emulation capability to a Landslide Test System.	<b>L-FT-010</b>
<b>GGSN NODE EMULATION</b> Allows Landslide to emulate a stand-alone GGSN. Can be used for testing SGSNs, Firewalls, and other devices that communicate with a GGSN.	<b>L-FT-017</b>
<b>GB OVER IP SUPPORT FOR LANDSLIDE GPRS APPLICATION</b> Adds Gb over IP support to existing GPRS systems. Allows users to tests GPRS capable SGSNs.	<b>L-FT-025</b>
<b>SGSN NODE EMULATION FEATURE</b> Emulates stand-alone SGSN. Supports testing over the Iu, Gb and Gn interfaces.	<b>L-FT-036</b>
<b>DATA THROUGHPUT ACCELERATOR LICENSE</b> Improves Test Server data throughput for Landslide Test Applications.	<b>L-FT-032-A</b>
<b>PERFORMANCE ACCELERATOR LICENSE</b> Improves Test Server data throughput and control plane performance for mobility Test Applications.	<b>L-FT-032-B</b>
<b>IPSEC ACCELERATOR CARD</b> Provides four channels of hardware accelerated IPsec processing to a Test Server. Requires L-FT-004 and L-FT-032-A or L-FT-032-B.	<b>L-ACC-004</b>

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#### SPIRENT SERVICES

Spirent Global Services provides a variety of professional services, support services and education services—all focused on helping customers meet their complex testing and service assurance requirements.

For more information, visit the Global Services Website at [www.spirent.com/gs](http://www.spirent.com/gs) or contact your Spirent sales representative.

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