

SPIRENT LANDSLIDE

WIMAX PERFORMANCE TEST SYSTEM

Spirent Communications' WiMAX performance test system is the premier mobility test tool for simulating real-world traffic models for mobile WiMAX core packet data networks. Landslide™ WiMAX is part of the Landslide family of test applications available on Spirent's proven Landslide platform.

Landslide WiMAX provides a comprehensive end-to-end test system that emulates millions of mobile WiMAX data subscribers, all simultaneously accessing the wireless network. By emulating key wireless core packet data network elements and combining control plane and data plane simulation, Landslide WiMAX provides real-world emulation of millions of mobile subscriber stations in various stages of activation, deactivation and hand off between cells. Emulation takes place while transmitting and receiving real-world application data. Additionally, when used in conjunction with Landslide's CDMA2000 Test Application, Landslide WiMAX provides the ability to do hand offs between technologies to test the Home Agent, PDSN or ASN-GW.

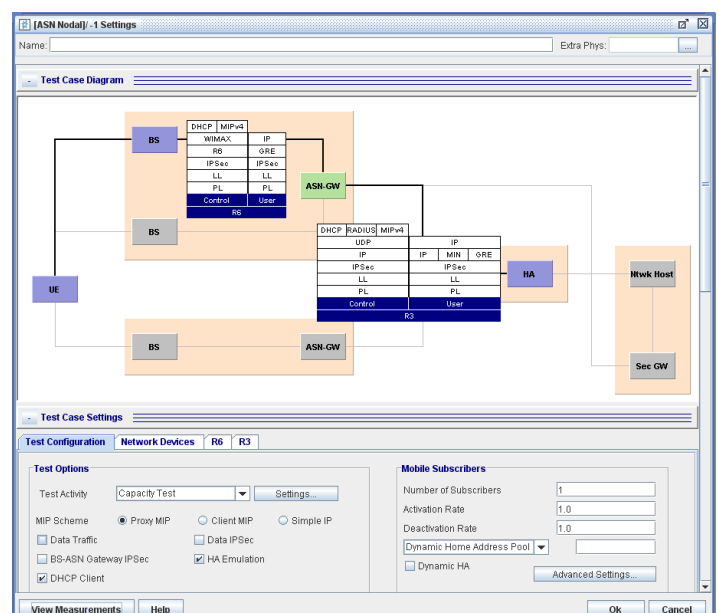
APPLICATIONS

- 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

- TCL Interface allows the user to control/monitor the Landslide from a higher level management system, thus making it possible to compile specific test reports for both the emulation (Landslide) and the device under test
- Realistic, real-world simulations permit equipment vendors to accurately specify the performance characteristics of their equipment under real-world conditions
- Simultaneous control and user plane allows service providers to measure the performance of their network and to validate new features and services in the lab
- Unmatched scalability so the user can simulate subscriber loads ranging from a small rural town to the largest metropolitan city

- Standard Web browser interface eliminates the need to load software onto user equipment
- Emulation of multiple network elements for 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 so the user can run many test cases simultaneously or serially on multiple Landslide test servers, creating real-world scenarios for heavy load and long duration stability tests
- ASN testing for isolating the ASN Gateway in a "nodal" configuration to specifically test the performance and scalability of the ASN GW

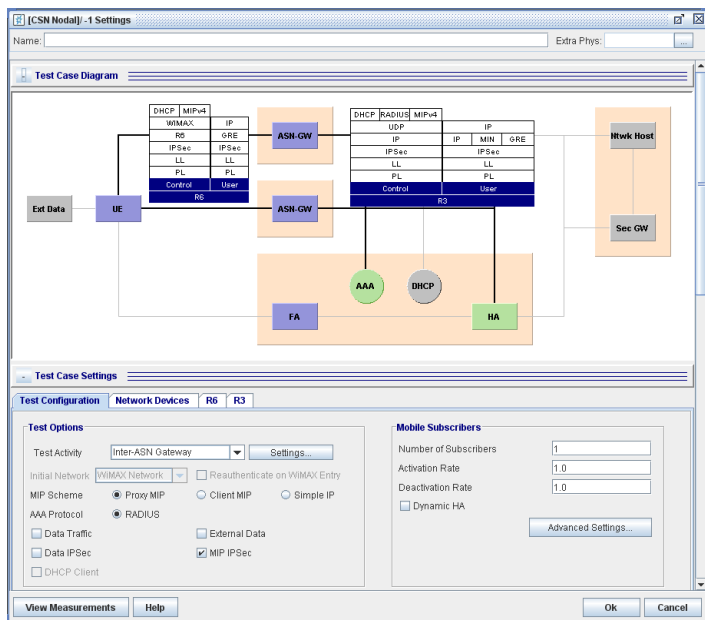


ASN Testing

SPIRENT LANDSLIDE

WIMAX PERFORMANCE TEST SYSTEM

- CSN testing for isolating the CSN components (HA and/or AAA) to specifically test the performance and scalability of the CSN. Includes the ability to interface to a PDF
- End-to-End testing for testing the entire WiMAX packet core
- Inter-technology (CDMA/WiMAX) mobility testing of the HA, PDSN and ASN-GW. Requires CDMA2000 Test Application as well



CSN Testing

TECHNICAL SPECIFICATIONS

- Test Activities (ASN GW Nodal/End-to-End Testing)
 - Capacity Test
 - Session Loading
 - Intra-ASN GW Mobility
 - Inter-ASN GW Mobility
 - Session Loading with Mobility
- Test Activities (CSN Nodal Testing)
 - Capacity Test
 - Session Loading
 - MIP Revocation
 - Inter-technology Mobility
 - Inter-ASN GW Mobility
 - 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)
 - 100,000 simultaneous sessions
 - Up to 4.6 Gbps of bearer traffic (ASN GW Nodal)
 - Up to 3.8 Gbps of bearer traffic (CSN Nodal)
 - Activate/deactivate up to 1,000 sessions per second
 - Up to 3 simultaneous users per test appliance
 - Emulate up to 1,000 base stations (ASN)
 - Emulate 1 FA, 1 NAS and 1 DHCP Relay Agent (CSN)
- Landslide Test Server Ethernet ports
 - 4-port 10/100/1000Base-T NIC (P/N L-NIC-12)
 - 4-port 1000Base-SX NIC (P/N L-NIC-11)
 - Single-port 10 Gigabit XF SR NIC (P/N L-NIC-10)
- Physical Specifications
 - 3U, 19-inch rack-mount
 - 5.25" H x 16.53" W x 19.75" D
 - 31 lb. (14kg)
 - Operating environment: 5° C to 30° C
 - 100-240 V, 50/60 Hz, 6 A
- Support for R3 and R6 reference points
- Support for EAP (SIM, AKA, MD5, TLS, TTLS) authentication
- Simple IP, Proxy MIP, Client MIP
- IPSec optional (between MN and server or between emulated device and device under test, e.g. BS and ASN GW)
- Supports Version 1.0.0, Release 1 version 1.2, Release 1 version 1.3 and version 1.5.0
- Referenced Standards
 - RFC 3344 IP Mobility Support
 - WiMAX Forum Network Working Group Stage 2
 - WiMAX Forum Network Working Group Stage 3
 - IEEE Std 802.16e-2005 and IEEE Std 802.16-2004/Cor1-2005

ORDERING INFORMATION	
DESCRIPTION	PART NUMBER
LANDSLIDE ASN-GW TEST APPLICATION Adds ASN-GW test application to existing MIPv6, UMTS, GPRS, CDMA or CSN Landslide system. S/N or MAC ID of existing Landslide Manager required.	L-APP-014
LANDSLIDE CSN TEST APPLICATION Adds CSN test application to existing ASN-GW, CDMA, GPRS, MIPv6 or UMTS Landslide system. Serial number or MAC ID of existing Landslide Manager required.	L-APP-013
AAA RADIUS SERVER EMULATION Adds the AAA Radius server emulation to applications such as CDMA2000, GPRS, or MIPv6 Landslide Test Systems. Serial number or MAC ID of existing Landslide Manager required.	L-FT-003
AAA DIAMETER SERVER EMULATION Adds the AAA DIAMETER server emulation to a CDMA2000, GPRS, or MIPv6 Landslide Test System. Serial number or MAC ID of existing Landslide Manager required. NOTE: IPsec is sold as separate option.	L-FT-010
DHCP SERVER EMULATION Adds the DHCP server emulation to applications such as GPRS and Advanced/IP Data. Serial number or MAC ID of existing Landslide Manager required.	L-FT-006
LANDSLIDE IP DATA APPLICATION Adds IP Data Application to an existing Landslide Test system. Serial number or MAC ID of existing Landslide Manager required.	L-APP-007
DYNAMIC IPSEC EMULATION Adds IPsec emulation to an existing Landslide Test System. IPsec accelerator must be ordered separately. Serial number or MAC ID of existing Landslide Manager required.	L-FT-004
LANDSLIDE IPSEC ACCELERATOR CARDS Provide hardware accelerated IPsec processing for Landslide Test Server. Requires L-FT-004 Dynamic IPsec Emulation feature. See sales rep for more information.	L-ACC-003 L-ACC-004
DATA THROUGHPUT ACCELERATOR LICENSE Improves test server data throughput for Landslide Test Applications. Price per test server. S/N or MAC ID required.	L-FT-032-A
PERFORMANCE ACCELERATOR LICENSE Improves test server data throughput and control plane performance for mobility test applications. Price per test server. S/N or MAC ID required.	L-FT-032-B
LANDSLIDE CSN TEST SYSTEM Includes one LANDSLIDE Manager and one LANDSLIDE test server with WiMAX CSN application and two quad copper NICs.	L-KIT-1013
LANDSLIDE ASN-GW TEST SYSTEM Includes one LANDSLIDE Manager and one LANDSLIDE test server with WiMAX ASN-GW test application and two quad copper NICs.	L-KIT-1014
TEST SERVER W/CSN Includes LS test server with CSN application. Must be purchased as an expansion to CSN Test System. Requires two NICS, sold separately. Serial number or MAC ID of existing LANDSLIDE Manager required.	L-TS-1013
TEST SERVER W/ASN-GW Includes LS test server w/ ASN-GW application. Must be purchased as an expansion to ASN-GW Test System. Requires two NICS, sold separately. Serial number or MAC ID of existing LANDSLIDE Manager required.	L-TS-1014
CSN (DIAMETER) EMULATION BUNDLE Provides Landslide CSN emulation application to existing ASN-GW Test System. Includes AAA DIAMETER SERVER, DHCP SERVER and HOME AGENT EUMLATION. S/N or MAC ID of existing Landslide Manager required.	L-SB-001
CSN (RADIUS) EMULATION BUNDLE Provides Landslide CSN emulation application to existing ASN-GW Test System. Includes AAA RADIUS SERVER, DHCP SERVER and HOME AGENT EUMLATION. S/N or MAC ID of existing Landslide Manager required.	L-SB-002

**SPIRENT LANDSLIDE
WIMAX PERFORMANCE TEST SYSTEM**

ORDERING INFORMATION	
DESCRIPITON	PART NUMBER
LANDSLIDE CSN Includes software only for one Landslide Manager and one Landslide test server for testing WiMAX CSN. SVC-6064 purchase required for installation of software on Manager and TS. NICs sold separately.	L-KIT-302-SW
LANDSLIDE ASN-GW TEST SYSTEM SOFTWARE Includes software only for one Landslide Manager and one Landslide test server for testing WiMAX ASN-GW. SVC-6064 purchase required for installation of software on Manager and TS. NICs sold separately.	L-KIT-303-SW
LANDSLIDE CSN TS SOFTWARE Includes Landslide test server software for CSN application. Must be purchased as expansion to CSN Test System. Serial number or MAC ID of existing Landslide Manager required. SVC-6064 purchase required. ICs sold separately.	L-TS-CSN-SW
LANDSLIDE ASN-GW TS SOFTWARE Includes Landslide test server software for ASN-GW application. Must be purchased as an expansion to ASN-GW System. S/N or MAC ID of existing Landslide Manager required. SVC-6064 purchase required. NICs sold separately.	L-TS-ASNGW-SW

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.spirentcom.com/gs or contact your Spirent sales representative.

AMERICAS 1-800-SPIRENT • +1-818-676-2683 • sales@spirent.com

EUROPE AND THE MIDDLE EAST +44 (0) 1293 767979 • emeainfo@spirent.com

ASIA AND THE PACIFIC +86-10-8518-2539 • salesasia@spirent.com

© 2010 Spirent Communications, Inc. All of the company names and/or brand names and/or product names referred to in this document, in particular the name “Spirent” and its logo device, are either registered trademarks or trademarks pending registration in accordance with relevant national laws. All rights reserved. Specifications subject to change without notice. Rev. I 06/10

