



# LANDSLIDE

## AAA RADIUS PERFORMANCE TEST APPLICATION

Spirent's Landslide™ AAA RADIUS Performance Test Application is the only high performance test tool that simulates an AAA Radius client using the RADIUS protocol for 3GPP, 3GPP2 and WiMAX networks. Landslide AAA RADIUS is part of the family of test applications available on Spirent's proven Landslide platform.

### SOLUTION OVERVIEW

Landslide AAA RADIUS provides a comprehensive test system that emulates a Network Access Server (NAS—e.g., GGSN, PDSN-FA, HA, or ASN-GW) interacting with an AAA server for authentication, authorization and accounting functions. By emulating the key AAA client functions of the GGSN, PDSN-FA or ASN-GW, Landslide AAA provides real-world emulation of millions of authorization and accounting transactions. Landslide AAA also supports Extensible Authentication Protocol (EAP) to provide support for additional authentication methods. Current EAP methods supported include: MD5, GTC, AKA, SIM, MSCHAPV2 and TLS. EAP allows for the easy addition of authentication methods as required.

Additionally, Landslide AAA RADIUS can be combined with the IP Data Application to run any of the supported advanced data types directly over IP for cases where IP address allocation from a AAA RADIUS server is desirable. This combination of applications can also be used for testing a AAA proxy device. In this case, all the advanced data test capability is available from within the same test case.

### 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 allows equipment vendors to accurately specify the performance characteristics of their equipment under real-world conditions
- Simultaneous control and user plane for 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 which means there is no need to load software onto user equipment
- Emulation of multiple network elements so the user can 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 for the user to run 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 allows 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

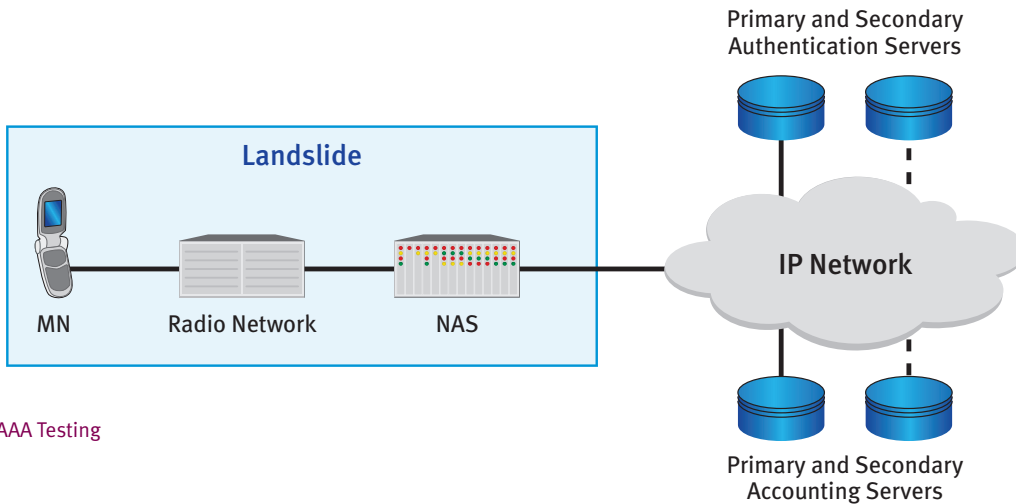
Features & Benefits continued on next page.

## LANDSLIDE

### AAA RADIUS PERFORMANCE TEST APPLICATION

#### FEATURES & BENEFITS (CONTINUED)

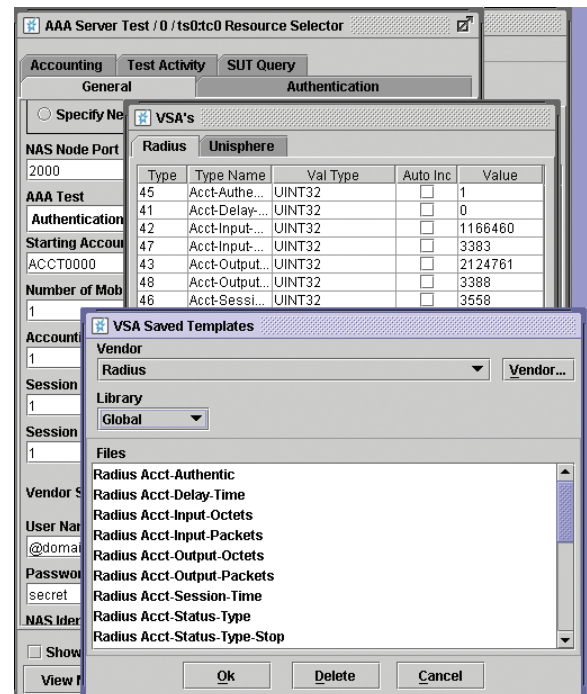
- AAA Server Testing for service providers to measure the performance of their AAA RADIUS servers and to validate the servers' ability to handle the traffic generated within next-generation networks



AAA Testing

The AAA RADIUS test application provides comprehensive Authentication, Authorization and Accounting (AAA) testing in a 3G/4G environment using the RADIUS protocol. The NAS and AAA servers exchange the messages necessary to negotiate mobile user connection requests, authenticate the mobile user, assign an IP address to the mobile user, determine the service that will be supplied to the mobile user and maintain accounting information. Testing of authentication and/or accounting servers is supported as well as primary, secondary and round-robin (up to 10 SUTs in a pool) server configurations.

- AAA Diameter Server Emulation is an optional feature which allows Landslide users to add AAA Diameter server emulation to the Landslide test system. This emulation removes the need to configure and maintain an actual AAA Diameter server and removes that node as a potential bottleneck while measuring DUT/SUT performance.
- VSA Editor—Landslide AAA RADIUS features a powerful, easy-to-use graphical user interface that allows a test operator to quickly set up test sessions. The user may select optional Vendor Specific Attributes (VSAs) from any of the libraries. The user also has the ability to create custom libraries, defining the vendor, vendor type, format, and value of any additional attributes desired using the VSA editor. The user can select which optional attributes will be included in each message type and define the field values for each attribute.



VSA Editor

## TECHNICAL SPECIFICATIONS

- Test Activities
  - Capacity Test
  - Session Loading
  - Inter-PDSN 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
  - Generate up to 1,500 transactions per second
  - Up to 3 simultaneous users per test appliance
  - Emulate up to 1,000 NAS devices
- Landslide Test Server Ethernet ports
  - 4-port 10/100/1000Base-T NIC
  - 4-port 10/100/1000Base-SX NIC
  - Single-port 10 Gigabit XF SR NIC
- Protocols Supported
  - RADIUS Accounting
  - RADIUS Authentication
  - EAP Methods
    - EAP-MD5
    - EAP-GTC
    - EAP-AKA
    - EAP-SIM
    - EAP-MSCHAPV2
    - EAP-TLS
- Referenced Standards
  - RFC 2865: Remote Authentication Dial In User Service (RADIUS)
  - RFC 2866: RADIUS Accounting
  - RFC 2867: RADIUS Accounting Modifications for Tunnel Protocol Support
  - RFC 2868: RADIUS Attributes for Tunnel Support Protocol
  - RFC 3576: Dynamic Authorization Extensions to RADIUS
  - WiMAX Forum: WiMAX End-to-End Network Systems Architecture, Stage 3 Detailed Protocols and Procedures

The listed specifications were used as reference material in the development of this application. This does not necessarily imply full implementation of all requirements within the referenced specifications.

## LANDSLIDE

### AAA RADIUS PERFORMANCE TEST APPLICATION

ORDERING INFORMATION	
DESCRIPTION	PART NUMBER
<b>LANDSLIDE AAA RADIUS TEST SYSTEM</b> Includes Landslide Manager, Test Server and AAA RADIUS Test Application. Allows testing of AAA server authentication and accounting capability.	<b>L-KIT-1004</b>
<b>LANDSLIDE TEST SERVER WITH AAA RADIUS</b> Landslide Test Server with AAA RADIUS Test Application. Must be purchased as an expansion to a AAA RADIUS Test System.	<b>L-TS-1004</b>
<b>LANDSLIDE AAA RADIUS TEST APPLICATION</b> Adds Landslide AAA RADIUS Test Application to an existing Test System.	<b>L-APP-004</b>
<b>AAA RADIUS SERVER EMULATION</b> Adds AAA RADIUS server emulation capability to a CDMA2000, GPRS, or other Landslide Test System.	<b>L-FT-003</b>
<b>LANDSLIDE IP DATA APPLICATION</b> Adds IP Data Test Application to an existing Test System.	<b>L-APP-007</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>
<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>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>

## 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.

**AMERICAS** 1-800-SPIRENT • +1-818-676-2683 • [sales@spirent.com](mailto:sales@spirent.com)

**EUROPE AND THE MIDDLE EAST** +44 (0) 1293 767979 • [emeainfo@spirent.com](mailto:emeainfo@spirent.com)

**ASIA AND THE PACIFIC** +86-10-8518-2539 • [salesasia@spirent.com](mailto: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. G 04/10

