



ProLab™ SIP Test Solution

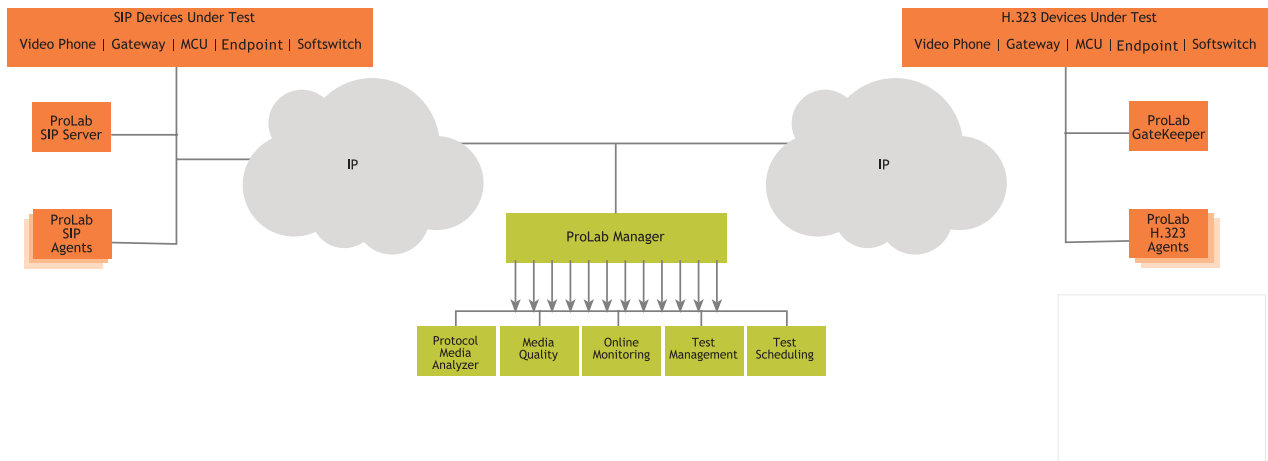


The ProLab SIP Test Agent is based on RADVISION's award-winning SIP Toolkit. Controlled by the ProLab Test Manager, the ProLab SIP Test Agent receives scenarios, runs them upon command, generates traffic to Devices Under Test (DUTs), collects test results and returns them to the ProLab Test Manager in real time. By simulating SIP endpoints, such as User Agent Clients (UACs) or User Agent Servers (UASs), the ProLab SIP Test Agent can initiate and terminate SIP calls and transactions. The ProLab SIP Test Agent also supports TCP, UDP and TLS.

The ProLab SIP Test Agent enables a complete unit and feature testing system for **SIP terminal applications** capable of simulating all components on a network, and can simulate a vast range of calls using various types of media to validate the quality of applications and media.

Network equipment vendors and service providers can use the ProLab SIP Test Agent to simulate calls using various bandwidths and types of architecture. The ProLab model is ideal for performing emulations and monitoring network quality before a voice and video service is deployed, as well as validate the media quality.

The ProLab SIP Test Agent can also be used for **SIP Server application capacity testing**. QA engineers and testers typically refer to performance metrics. These are needed most when a SIP Server crashes from overload. SIP Server performance metrics facilitate proactive testing, which in turn reduces crashes and SIP Server network size capacity.



An automated testing solution for developers of:

- Endpoints
- User Agents
- IP Phones
- MCUs
- Gateways

ProLab SIP Test Agent Testing Features

Advanced Signaling

- UAC/UAS, INVITE, Re-INVITE, BYE, CANCEL
- Multiple IP simulation and multi-homed IP
- Canned messages torture testing
- Info, Notify, Options, Trying, Ringing
- Multiple Transport TCP, UDP and TLS
- Working with or without a proxy server, outbound proxy
- Reject messages
- Detecting parsing errors
- Registration & Authentication Testing
- Authentication multiple login and password
- Redirect
- Header manipulation
- SDP testing and parsing
- Generic method, generic header
- Session Timer
- Compact Header
- Calls to multiple sources and destinations
- SIP compliance testing, including Columbia test messages and non-standard messages

Media Testing

- RTP/RTCP (recording and playing voice and video, including DTMF)
- DTMF-in-band—Record and play the DTMF
- Info DTMF
- DTMF-RFC 2833
- Transmission of RTP voice- and video-encoded packets employing a wide variety of codecs
- Early media
- RTP Loop Back

Stress and Performance

- Generating and receiving thousands of calls
- Constant, burst, and Poisson call distribution
- Random call duration
- Long-term testing and limitation
- High capacity and volume

Extensions

- SIP extension testing, including PRACK and REFER
- Auto-provisional response
- Multipart MIME body

Advanced Presence (to test Presence Server applications)

- Subscribe
- Notify
- Subscribe refresh
- Subscribe with a call
- Unsubscribe

ProLab SIP Server Agent

Also based on RADVISION's SIP Server Toolkit, the ProLab SIP Server Agent simulates SIP Server functionality, and is capable of behaving as a registrar, proxy, or re-direct server. The ProLab SIP Server Agent is fully configurable, provides high performance, and features minimal memory consumption per transaction. It complies with the latest drafts of SIP (RFC 3261) and subsequent SIP RFCs and supports all SIP Server high-level and low-level functionality as specified in the standard.

ProLab SIP Server Agent Components

Location Database

The Location Database implements the interface to the location service, where the SIP location mappings are stored. The ProLab SIP Server Agent uses this interface to read and write location mappings as part of the address resolution process (proxy and redirect servers) and the registration process (registrar).

Presence Server

The ProLab SIP Server Agent that handles incoming Presence Subscribe requests and sends Presence Notifications to the watchers. The ProLab SIP Server Agent decides how a specific Presence Subscribe request is handled according to its policy.

Security

The security component implements all non-SIP aspects of security, such as cryptographic algorithms and user/password databases. The default implementation provided with the ProLab SIP Server Agent implements MD5-hash and memory-based user/password database.

Session Timer

Enables configuring the duration of a call session. The session duration is defined in a Session-Expires header included in the 2xx response of an initial INVITE. Periodic refresh allows the duration of the call to be extended and enables both User Agents (UAs) and proxies to determine whether the SIP session is still active. The refresh of a SIP session is done through a re- INVITE or UPDATE. The Session-Expires header in the 2xx response also indicates which side (UAC or UAS) will be responsible for generating the refresh request. The Session Timer feature defines two new headers—Session-Expires and Min-SE— and a new response code of 422.

Multiple Transport

Supports TCP, UDP and TLS transport types.

Loose Routing

Loose routing enables the SIP Proxy to route requests via a predefined set of proxies before reaching their target.

Forking

Forking allows the SIP Proxy to forward a request to multiple destination addresses.

Recursion on Redirect Responses (3xx)

Receive redirect responses (3xx class) and generate one or more requests based on the contact address provided in the response This can be repeated multiple times per request.

Authentication

The ProLab SIP Server Agent enables the application to authenticate incoming requests (including registrations) as specified in the SIP standard. Authentication is a mechanism that allows a server (proxy/registrar) to challenge a client and ask for credentials (user-password pair) before processing a request or accepting a registration. The client provides the credentials in an encrypted copy of the SIP request. The ProLab SIP Server Agent decrypts the credentials and verifies their validity.

Multiple Configuration Management

The ProLab SIP Server Agent supports management of multiple configurations with different policies.

Changing SIP Server Policy in Real Time

The ProLab SIP Server Agent supports changing the proxy policy in real time.



SIP Standards Supported

- RFC 3261 (SIP)
- RFC 3262 (Reliability of Provisional Responses in SIP)
- RFC 3265 (SIP Specific Event Notification)
- RFC 2327 (SDP)
- RFC 2617 (HTTP Digest Scheme Authentication)
- RFC 3515 (REFER)
- RFC 3372 (SIP-T)
- RFC 2833 (DTMF signaling above RTP packets)
- RFC 2246 (TLS v1.0)
- RFC 3546 (TLS Extensions)
- RFC 4028 (Session Timer)
- RFC 3311 (UPDATE)
- RFC 3263 (locating SIP Servers)

VoIP Media Analysis & Quality Testing

The VoIP Protocol & Media Analyzer enables advanced analysis and monitoring of all the media streams, including packet loss, jitter, latency, bandwidth, and RTP delay. It also simulates multiple error network conditions, such as packet loss, duplicate packets, delay, and corrupted payload, and monitors the call signaling H.323, SIP, SDP and media quality, including audio and video.

Video Quality

The new perceptual Video Quality measurement uses different video metrics. It intrusively analyzes received video streams and perceptually scores relevant degradations on a 5-point MOS scale. Additional key performance indicators (KPIs), like PSNR and blockiness, are output to allow experts to make a more detailed analysis. Video Quality measurement can be used for SIP, H.323 and 3G-324M.

Voice Quality

The ProLab Media analyzer analyzes Voice Quality, measured by digitized voice lines. MOS is based on the subjective opinions of actual users rating the quality of the voice line on a scale from 1-5. The model provides measurements based on packet loss, jitter, and round trip delay.



About RADVISION

RADVISION (NASDAQ: RVSN) is the industry's leading provider of high quality, scalable and easy-to-use products and technologies for videoconferencing, video telephony, and the development of converged voice, video and data over IP and 3G networks. For more information please visit our website at www.radvision.com

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