MAPS™ Skinny Emulator
(Scripted Skinny Call Control Protocol Emulation)

Skinny Call Control Protocol (SCCP)
■■■■■■■■■■■■

Cisco Systems Proprietary Signaling & Control Protocol
■■■■■■■■■■■■

TCP/IP to communicate with Call Manager in VoIP Environment
■■■■■■■■■■■■

Simulates IP Phones (Skinny Client)
■■■■■■■■■■■■

Registration, Call Control, and Media (Audio) Stream Control
■■■■■■■■■■■■

Call Flow Customization with Message & Sequence Editors
■■■■■■■■■■■■

Deployment of Products with Multiple Features & Protocols
■■■■■■■■■■■■

Graphically Depicts Call Flows in Ladder Diagrams
■■■■■■■■■■■■

Event Log & Link Status
■■■■■■■■■■■■

Ready Scripts for Simpler & Less Time Consuming Tests
■■■■■■■■■■■■

Overview

GL's **Message Automation & Protocol Simulation** (MAPS™) is an advanced and versatile protocol simulator/tester that can simulate a variety of protocols encountered in the telecom space. Currently, MAPS™ is enhanced to support SCCP (Skinny Call Control Protocol), Cisco Systems proprietary signaling and control protocol.

GL's **MAPS™ Skinny** can be used to emulate Skinny Client (IP Phones) in VoIP environment. Supported call control functionalities includes registration, call control (setup, teardown, and statistics), and media (audio) stream control. Simulation of Skinny Call Manager endpoint will be supported in future.

In addition to call simulation in VoIP environment, it also supports, error tracking, regression testing, conformance testing, load testing, and message generation. It can run pre-defined test scenarios against test objects in a controlled & deterministic manner.

MAPS™ Skinny Emulator supports powerful utilities like Message Editor, Script Editor, and Profile Editor which allow new scenarios to be created or existing scenarios to be modified.

Also available is an independent GUI based PacketScan Analyzer for online capture and decode of the signaling in real-time both during tests and as a stand-alone tracer for live systems.

For more details, refer to http://www.gl.com/skinny-protocol-emulation-using-maps.html

Main Features

- Emulates Skinny Call Control Protocol (SCCP) clients (IP Phones).
- User-friendly GUI for configuring the SCCP signaling links over IP
- Ready scripts for registration, call control (setup, teardown, and statistics) procedures.
- Logging of all messages in real-time
- Supports customization of placing and answering calls using Profile editor and Message editor
- Provides protocol trace with full message decoding of the call control messages
- Script based & protocol independent software architecture
- Provides call reports with associated captured events and error events during call simulation
- Supported on Windows® XP (or higher) operating systems

GL Communications Inc.

818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878, U.S.A
(Web) http://www.gl.com/ - (V) +1-301-670-4784 (F) +1-301-670-9187 - (E-Mail) gl-info@gl.com

Working Principle

- **Message Templates** - Forms the backbone of the MAPS™ application that contains various protocol fields with default values
- **Script Editor** -
  – Creates a script for scenario based testing (call flow)
  – Uses pre-defined message templates in the script
  – Access protocol fields as variables using import/export files
- **Message Editor** - Used to edit / create Message Templates
- **Profile Editor** – Creates or edit profiles containing values assigned to the variables replacing the original values.
- **Event Profile Editor** - Allows you to create Event Profiles for user-defined events in a script. The values of the variables in the user-events can be changed during script execution.

Figure: MAPS™ application Working Principle

Test Bed Setup Configuration

Test Bed Setup provides options to establish communication between MAPS™ Skinny (IP Phone) and the DUT (Call Manager). It includes Skinny configuration parameters such as Phone IP address, CCM IP address, and TCP transaction type.

Default profile used to configure MAPS™ Skinny with end terminal parameters.

Once the testbed setup is configured properly, inbound and outbound calls between the IP Phone (Skinny Client) and the Call Manager can be established.
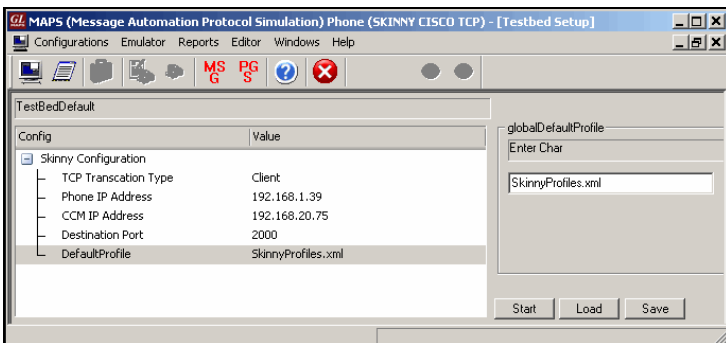

Figure: Testbed Setup Configuration

Pre-processing Tools

Script Editor - The script editor allows the user to create / edit scripts and access protocol fields as variables for the message template parameters. The script uses pre-defined message templates to perform send and receive actions.
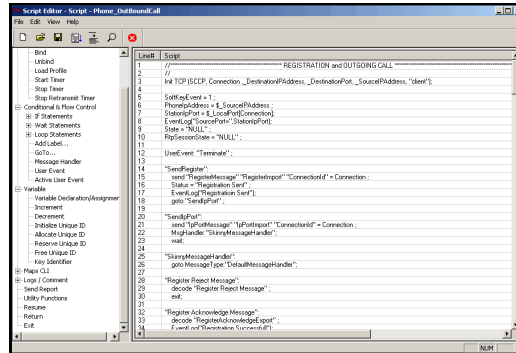

Figure: Script Editor

Message Editor - With message editor, users can build a template for each protocol message type. The value for each field may be changed in the message template prior to testing. The protocol fields comprises of mandatory fixed parameters, mandatory variable parameters, and optional variable parameters.
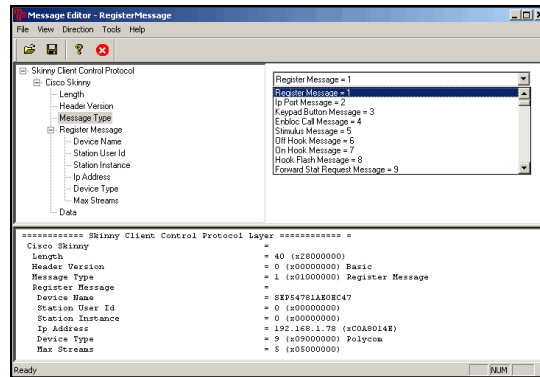

Figure: Message Editor

Profile Editor - The profile editor This feature allows loading profile to edit the values of the variables using GUI, replacing the original value of the variables in the message template.
An XML file defines a set of multiple profiles with varying parameter values that allow users to configure call instances in call generation and to receive calls.
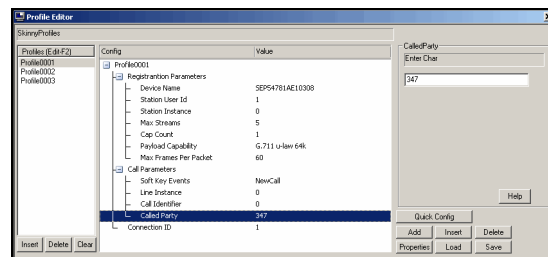

Figure: Profile Editor

Call Generation and Call Reception

In call generation, MAPS™ is configured for the out going messages, while in call receive mode, it is configured to respond to incoming messages. Tests can be configured to run once, multiple iterations and continuously. Also, allows users to create multiple entries using quick configuration feature.

The editor allows to run the added scripts sequentially (order in which the scripts are added in the window) or randomly (any script from the list of added script as per the call flow requirements).

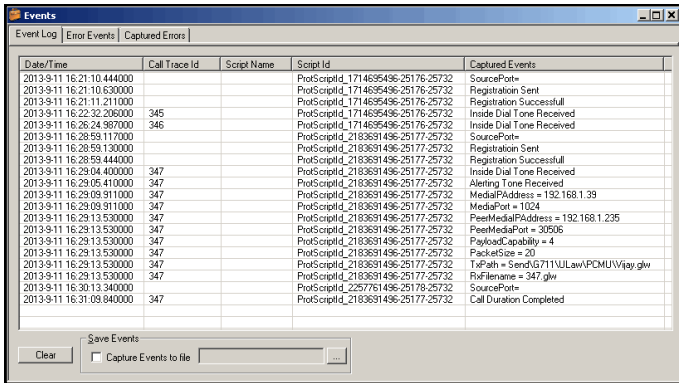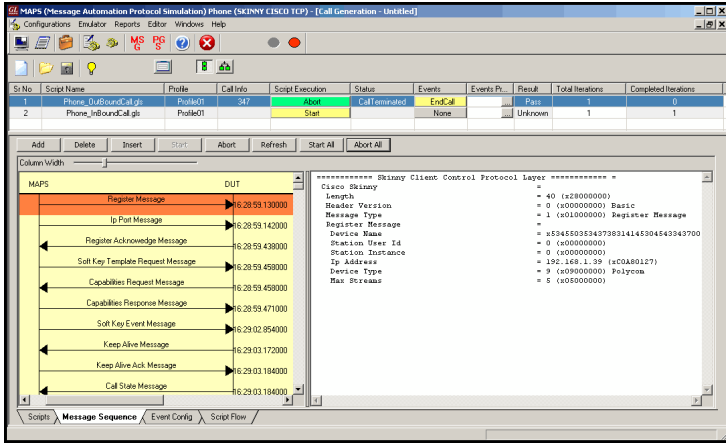The test scripts may be started manually or they can be automatically triggered by incoming messages.

Figure: Outbound Call and Event Log

Skinny Call Control Protocol - SCCP Call Flow

MAPS™ Skinny supports client control procedures -

- Registration

IP Phone registers its IP, type, & name with the CCM, and provides its "Capabilities" (voice/video codec supported) to CCM.

- Call Control (setup, teardown, and statistics)

Phone periodically sends "KeepAlive" messages to the CCM

Offhook (place call) - CCM instructs with the lamp on/off, through the prompt, key settings, and the dialtone messages.

Onhook (end call) – CCM instructs the phone to stop transmitting, close the channels, set the call status to disconnect, and send the default user prompt.

- Media (audio) Stream Control

Media Transmission includes Conference ID, Pass through Party ID, Remote IP & Port Address, Packet, Payload Capability, Max Frames per Packet details.
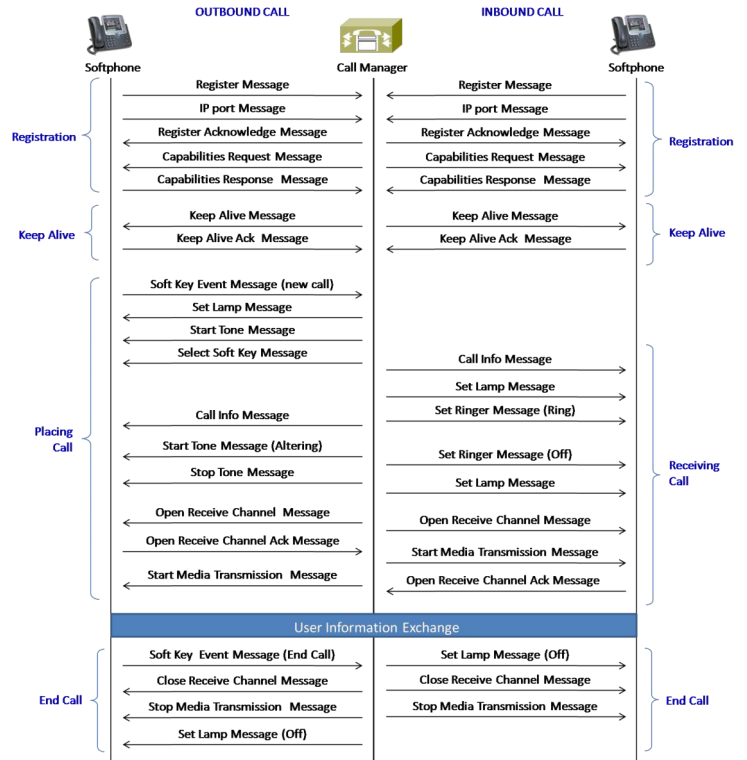

Figure: IP Phone to Call Manager Call Flow

Buyer's Guide

PKS149 - MAPS™ Skinny Protocol Emulator

Related Software

PKS136 - MAPS™ INAP over IP Emulator

XX656 – MAPS™ INAP over TDM Emulator (Requires T1 or E1 Hardware and Software)

XX649 - MAPS™ ISUP Emulator

XX694 - MAPS™ MAP Emulation (B,C,D, E, F, G, and H interfaces)

XX696 - MAPS™ SS7 CAP Emulation (CAMEL App Part)

XX695 - MAPS™ SS7 BICC Emulation

XX120 - SS7 Analysis Software

PKS132 - MAPS™ MAP IP Emulator

PKS152 - MAPS™ SIGTRAN ANSI MAP Emulator

PKS130 - MAPS™ SIGTRAN (SS7 over IP)

PKV105 - SIGTRAN Analyzer (requires PKV100)

PKS140 - MAPS™ LTE - S1 Interface

PKS142 - MAPS™ LTE eGTP (S11, S5/S8) Interfaces

PKV107 - LTE Protocol Analyzer

PKS164 - MAPS™ UMTS – IuPS Interface Emulation

PKS160 - MAPS™ UMTS – IuCS and Iuh Interface Emulation

XX165 - T1 or E1 UMTS Protocol Analyzer

XX648 - MAPS™ ISDN Emulator

PKS135 - MAPS™ ISDN SIGTRAN (ISDN over IP)

XX100 - ISDN Analyzer Software

Related Software...

PKS120 - MAPS™ SIP

PKS121 - MAPS™ SIP Conformance Test Suite (Test Scripts)

PKS122 – MAPS™ MEGACO

PKS123 – MAPS™ MEGACO Conformance Test Suite (Test Scripts)

PKS124 - MAPS™ MGCP

PKS125 - MAPS™ MGCP Conformance Test Suite (Test Scripts)

PKB100 - RTP Toolbox™

PKS100 - PacketGen™

PKV100 - PacketScan™ (Online and Offline)

For complete list of MAPS™ products, refer to http://www.gl.com/maps.html webpage.