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 include 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.

MAPS™ for Skinny interfaces can support transmission and detection of various RTP traffic such as, digits, voice file, single tone, and dual tones over IP networks, with additional RTP traffic licensing. For more details, refer to [http://www.gl.com/rtp-traffic-generator.html](http://www.gl.com/rtp-traffic-generator.html)

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.


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 and Message editors.
- 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.
- Script based and protocol independent MAPS architecture supports all common framework features.
- Supported on Windows® 7 and higher operating systems.

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Test Bed Setup Configuration

Test Bed Setup provides option 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, Port and TCP transaction type. Also includes default profile, which is 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.

Pre-processing Tools

Profile Editor - The profile editor feature allows to edit the values of the variables in the profile, 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.

Users can configure the traffic options for Auto / User-defined traffic simulation. Supported traffic configuration includes Send/Receive file, DTMF/MF digits, and Single/Dual tones.

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.

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Call Generation and Call Reception

In call generation, MAPS™ is configured for the outgoing 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.

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.

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**Figure: Outbound Call Simulation**

**Figure: Event Log**

**Figure: IP Phone to Call Manager Call Flow**
**Buyer's Guide**

PKS149 - MAPSTM Skinny Protocol Emulator

Related Software

PKS102 - RTP Soft Core for RTP Traffic Generation
PKS103 - RTP IuUP Softcore
PKS107 - RTP EUROCAE ED137
PKS108 - RTP Voice Quality Measurements
PKS200 - RTP Pass Through Fax Emulation

PKS136 - MAPSTM INAP over IP Emulator
PKS132 - MAPSTM MAP IP Emulator
PKS135 - MAPSTM ISDN SIGTRAN (ISDN over IP)
XX656 - MAPSTM INAP over TDM Emulator (Requires T1 or E1 Hardware and Software)
XX649 - MAPSTM ISUP Emulator
XX694 - MAPSTM MAP Emulation (B,C,D, E, F, G, and H interfaces)
XX696 - MAPSTM SS7 CAP Emulation (CAMEL App Part)
XX695 - MAPSTM SS7 BICC Emulation
XX648 - MAPSTM ISDN Emulator
XX100 - ISDN Analyzer Software
XX120 - SS7 Analysis Software

**Related Software...**

PKS152 - MAPSTM SIGTRAN ANSI MAP Emulator
PKS130 - MAPSTM SIGTRAN (SS7 over IP)
PKV105 - SIGTRAN Analyzer (requires PKV100)
PKS140 - MAPSTM LTE - S1 Interface
PKS142 - MAPSTM LTE eGTP (S11, S5/S8) Interfaces
PKS164 - MAPSTM UMTS – IuPS Interface Emulation
PKS160 - MAPSTM UMTS – IuCS and Iuh Interface Emulation
XX165 - T1 or E1 UMTS Protocol Analyzer
PKV107 - LTE Protocol Analyzer

PKS120 - MAPSTM SIP
PKS121 - MAPSTM SIP Conformance Test Suite (Test Scripts)
PKS122 – MAPSTM MEGACO
PKS123 – MAPSTM MEGACO Conformance Test Suite (Test Scripts)
PKS124 – MAPSTM – MGCP Protocol Emulation with Conformance Test Suite
PKB100 - RTP Toolbox™
PKS100 - PacketGen™
PKV100 - PacketScan™ (Online and Offline)

For complete list of MAPSTM products, refer to [https://www.gl.com/maps.html](https://www.gl.com/maps.html) webpage.