Capture, Decode, and Analysis of Calls in SIGTRAN Network

Supports decoding SCTP, and various User Adaption Layers

Real-time and Offline Analysis

Includes Call Detail & Statistics Views

Advanced Filter and Search Features

Powerful and Customizable Reporting Tools

Call Trace Capability Over Various Interfaces

Supports Intelligent Triggers and Actions

Customize Decode Options

Protocol Analyzer for Wireless & IP Networks- PacketScan™
(SIGTRAN - Optional)

Overview

SIGTRAN protocol decoder software is a VoIP testing tool that permits real-time analysis, call trace, capture, and filtering of SS7 and ISDN signaling messages over IP.

GL’s SIGTRAN analyzer within PacketScan™- All IP Protocol Analyzer is an optional module (PKV105) available with additional licensing with PacketScan analyzer (PKV100).

GL’s SIGTRAN analyzer offers powerful features to capture, monitor, decode, and collect statistics of SCTP, and user adaptation (UA) layers such as M2UA, M3UA, M2PA, SUA, IUA, ISUP, MAP, CAP, and INAP.

GL’s PacketScan™- All IP Protocol Analyzer supports monitoring most of 2G, 3G and 4G protocols over IP network such as GSM, GPRS, UMTS, SIGTRAN, and LTE, in addition to SIP, MGCP, MEGACO, Skinny, SCCP, Diameter, and H.323. For more details, visit http://www.gl.com/packetscan-all-ip-packet-analyzer.html.

Features

- Permits testing and verification of Signaling Gateways.
- Advanced filtering and search based on any user selected protocol fields.
- Any protocol field can be added to the summary view, filtering, and search features providing users more flexibility to monitor required protocol fields.
- Trigger intelligent actions based on signaling and traffic conditions
- Support for Multi-technology, Multi-protocol
- Displays Summary, Detail, Hex dump, Statistics, and Call Detail Views.
- Hex dump View displays the frame information in HEX and ASCII format, the contents of this view can also be copied to clipboard.
- Statistics View displays statistics based on frame count, byte count, frames/sec, bytes/sec etc for the entire capture data.
- Call Detail View displays called/ calling number, released calls, call status, & more.
- Provides a consolidated interface for all the important settings required in the analyzer. All the configuration settings done in any of these options can be saved to a file, loaded from a configuration file.
- Supported on Windows® 7/8.1 (32 bit and 64 bit) OS.
Protocol Stack

Entire SIGTRAN stack supported by PacketScan™.

Supported UMTS IP protocol standards by PacketScan™.

<table>
<thead>
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<th>Supported Protocols</th>
<th>Standard / Specification Used</th>
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<tr>
<td>SCTP</td>
<td>RFC 2960</td>
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<tr>
<td>M2UA</td>
<td>RFC 3331</td>
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<tr>
<td>M2PA</td>
<td>RFC 4165</td>
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<td>SUA</td>
<td>RFC 3868</td>
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<td>SUA ANSI</td>
<td>Internet Engineering Task Force: Draft SUA ANSI, 2026 (sec.10)</td>
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<tr>
<td>M3UA</td>
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<tr>
<td>M3UA ANSI</td>
<td>RFC 3332</td>
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<td>MTP3 ITU</td>
<td>ITU-Y Q.701-Q.705 / ITU-T Q.782</td>
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<td>MTP3 ANSI</td>
<td>T1.111.4-1996</td>
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<td>IUA</td>
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<tr>
<td>BICC</td>
<td>BICC pl-080r1, T-REC-Q.1902.2-07/2001, T-REC-Q.1902.3-07/2001</td>
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<tr>
<td>INAP CS1 ITU / ETSI</td>
<td>Q1218 and ETS 300 374 1, Sept, 1994</td>
</tr>
<tr>
<td>INAP CS2 ITU</td>
<td>INAP - Capability Set 2. (Q.1228)</td>
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<tr>
<td>INAP CS2 ETSI</td>
<td>INAP - Capability Set 2. (EN 301 140-1-v1.3.4-1999-06)</td>
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<tr>
<td>CAMEL V3</td>
<td>3GPP TS 29.078 V3.15.0</td>
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<tr>
<td>CAMEL V6</td>
<td>3GPP TS 29.078 6.3.0 (2004-09)</td>
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<td>MAP R99</td>
<td>3GPP TS 09.02 V7.14.0 (2003-09)</td>
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<td>MAP R4</td>
<td>3GPP TS 29.002 V4.18.0</td>
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<td>TUP ITU</td>
<td>T-REC-Q.723-11/1988</td>
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<td>TCAP ITU</td>
<td>ITU-T Q.771 - Q.775</td>
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<tr>
<td>SCCP ITU</td>
<td>ITU-T Q.711-Q.714</td>
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<td>SCCP ETSI</td>
<td>EN 300 009 -1, sept 1996, 3rd edition</td>
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<tr>
<td>ISUP ITU</td>
<td>ITU - Q.761, Q.762, Q.763 and Q.764</td>
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<tr>
<td>DPNSS</td>
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<td>DASS2</td>
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<tr>
<td>Q.931</td>
<td>ITU-T Q.931 / Q.932(Facility IE) / Q.955.3 (MLPP Procedures)</td>
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</table>

Summary and Detail View of SS7 SIGTRAN

User can select a frame in Summary View to analyze and decode each SS7 SIGTRAN frame in the Detail View.

The detail view of SS7 SIGTRAN call displays the following:
- MAC Layer
- IP Layer
- SCTP Layer
- MTP3 Layer
- ISUP Layer
**SIGTRAN Call Detail Records**

Call Detail Records view of SS7 and ISDN SIGTRAN calls over IP displays the following fields - Call ID, Call status, Protocol, Call Originating (Number/Address), Call Destination (Number/Address), Call Start Date & Time, Call Duration, and Protocol Specific Information.

**SIGTRAN Statistics**

The statistics are calculated based on the SIGTRAN protocol fields. The figure below depicts statistic data based on message types of SS7/ISDN SIGTRAN protocol decodes in PacketScan™.

**INI Decode Options**

The .INI file configuration enables the user to enter the required custom value for each protocol in the PacketScanProt.ini file (located in Program Files\GL Communication Inc) to get proper decodes. For SIGTRAN protocols, the following options can be edited to customize the way the PacketScan™ decodes SIGTRAN protocols.

- SIGTRAN standards – ITU or ANSI
- MAP Protocol Version – R99 or R4
- INAP Protocol Version – CS1 or CS2
- CAMEL Protocol Version – Rel6 or Rel3
- BTNR Protocol Identifier - TUP or IUP
- Maximum and Minimum SSN value for INAP in ITU, ANSI and ETSI
- Call Trace Type – TCAP MAP or TCAP CNAM

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Network-Wide Monitoring of SIGTRAN Network

GL’s NetSurveyorWeb™ is a web-based client that can connect to SIGTRAN protocol analyzer probe for monitoring the entire SIGTRAN network through a web server that facilitates display of call data records, protocol frames, and KPIs. This system allows you to deploy multiple SIGTRAN Analyzer probes to be deployed at strategic locations in a network, transmit and collect voice, data, protocol, statistics, and performance information, and relay this information to a central / distributed network management system (NMS).

For more information, please http://www.gl.com/networkmonitoring.html#voip.

Buyers Guide

PKV105 – SIGTRAN Offline Analyzer
PKV106 – Offline SIGTRAN Analyzer (Optional with PacketScan™)
PKV100 – PacketScan™ (Real-time and Offline)
PKV101 – PacketScan™ - Offline
PKV120 – PacketScan™ HD – includes PKV100 – Online (not Offline) for temporary audio codec support
PKV121 – PacketScan™ FB - (Offline Analyzer)
PKV301 – LAN Switch w/ Mirror Port
PKV103 – IP Based GSM and UMTS Analyzer, requires PKV100
PKV109 – Offline IP Based GSM and UMTS Analyzer (Optional with PacketScan™)
PKV107 – LTE (Long Term Evolution) Analyzer, requires PKV100
PKV108 – Offline LTE (Long Term Evolution) Analyzer (Optional with PacketScan™), requires PKV101
PKV104 – FaxScan™ - Decodes Fax images in TIFF format from PCAP files
PCD103 – AMR Codec for PacketScan™
PCD104 – EVRC Codec for PacketScan™
PCD105 – EVRC-B Codec for PacketScan™
PCD106 – EVRC-C Codec for PacketScan™
PKV170 – NetSurveyorWeb™ (Network Surveillance Software) for IP Network
PKV171 – Network Surveillance Agent Toolkit