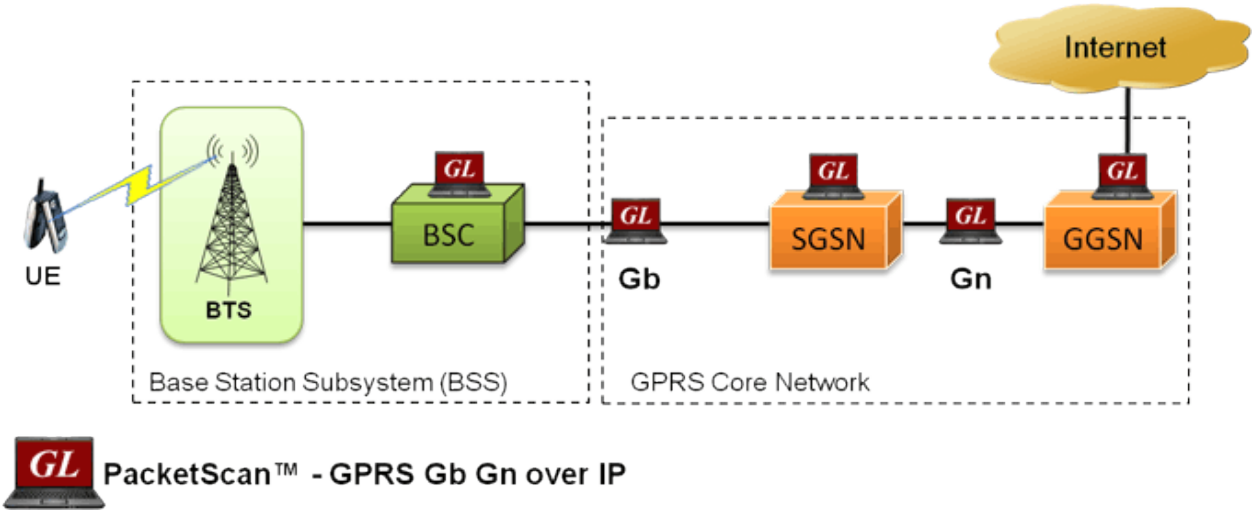
PacketScan™ GPRS Protocol Analyzer for Wireless & IP Networks



Overview

GPRS, or General Packet Radio Service, was introduced (in the late 90's and early 2000's) to provide data carrying capabilities to basic GSM networks and 3G networks. GL's GPRS Protocol Analyzer within **PacketScan™-All IP Protocol Analyzer** is an optional module available with additional licensing with PacketScan™ analyzer.

With the support of additional license, the PacketScan™ permits continuous GPRS data connectivity over wireless GSM networks. The GPRS Analyzer when connected between SGSN and BSS elements of a GPRS network, permits the monitoring of Gb interface. Similarly, when connected between SGSN and GGSN elements, permits monitoring of the Gn interface.

GL's GPRS Protocol Analyzer offers powerful features to capture, monitor, decode, and collect statistics of GPRS messages over IP.

For more details, refer PacketScan™ - All-IP Analyzer webpage.

Main Features

- Decode and analyze signaling and user data protocols over Gb and Ga/Gn interfaces
- Provides details about routing area update, PDP activation, and traffic patterns in the network
- 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, and 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
- Allows the captured frames to be saved to a trace file using different conventions such as user-defined prefixes, date-time prefixes, total number of files, file size, frame count, or time limit
- Supported on Windows®11 operating system

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Protocol Stack and Standards

Entire GPRS IP stack supported by PacketScan™.

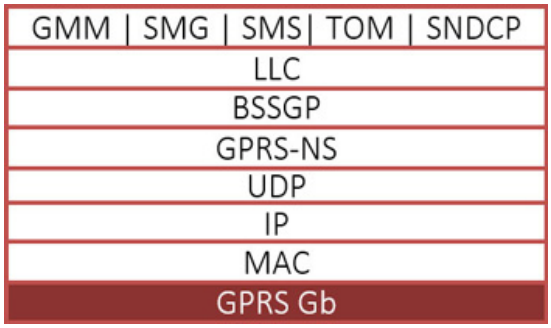

Figure: GPRS Gb over IP Protocol Stack

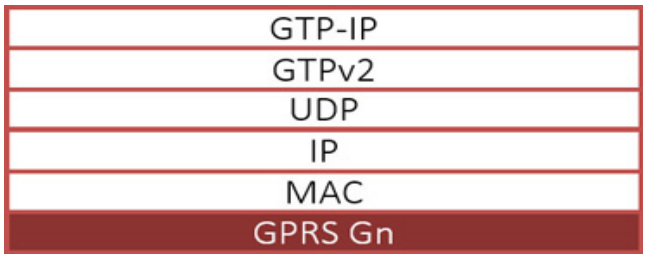

Figure: GPRS Gn over IP Protocol Stack

Supported Protocols	Standard / Specification Used
GPRS Gb Interface	
BSSGP	3GPP TS 08.18 V8.10.0
LLC	3GPP TS 04.64 V8.7.0
GMM	3GPP TS 04.08 V7.19.0
SMS	3GPP TS 03.40 V7.5.0 / GSM 03.38 version 7.2.0
TOM	3GPP TS 04.64 V8.7.0 (2001-12)-Annex B
SNDCP	3GPP TS 04.64 V8.7.0
SMG	3GPP TS 04.08 V7.19.0
NS (Network Service Frame Relay)	GSM 8.16 ETSI TS 101 299 V8.0.0
GPRS Gn Interface	
GTP / GTPv2 / GTP	3GPP TS 09.60 V7.9.0 / 3GPP TS 29.060 V6.5.0 / 3GPP TS 32.005 V3.7.0 and 3GPP TS 32.015 V3.12.0

Summary and Detail View of GPRS over IP

User can select a frame in Summary View to analyze and decode each GPRS over IP frame in the Detail View.

The detail view of GPRS over IP call displays the following:

- MAC Layer
- IP Layer
- UDP Layer
- NS Layer
- BSSGp Layer

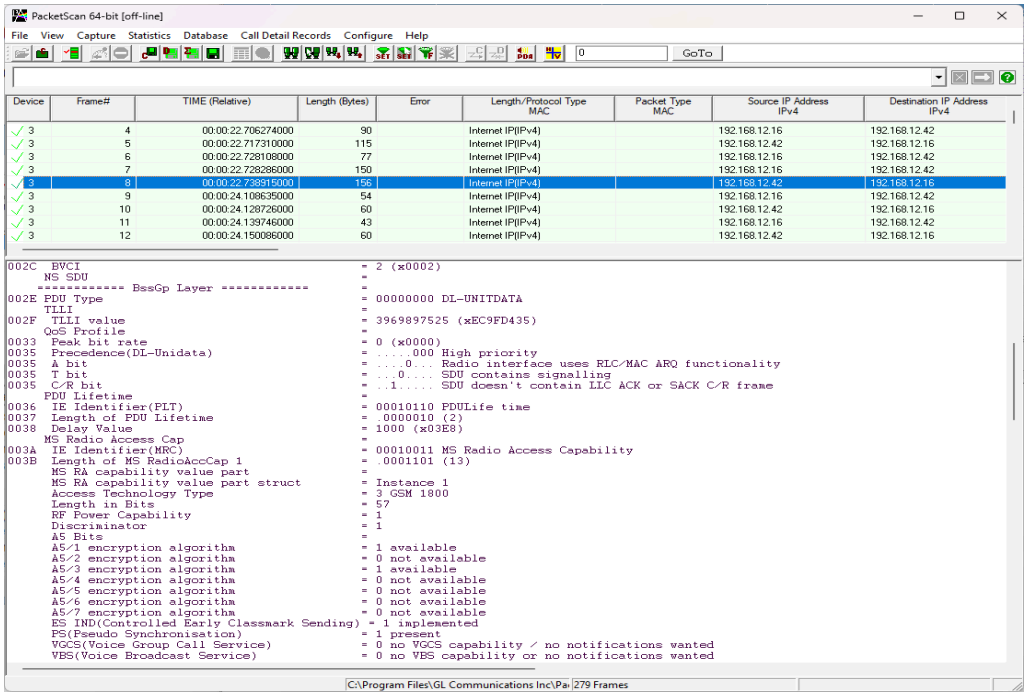

Figure: Detail View of GPRS over IP

INI Decode Options

The .INI file configuration enables the user to enter the required custom value for each protocol in the IPProt.ini file (located in Program Files\GL Communication Inc) to get proper decodes. For GPRS protocols, enter the minimum and maximum UDP source and destination port values to decode GPRS messages over IP.

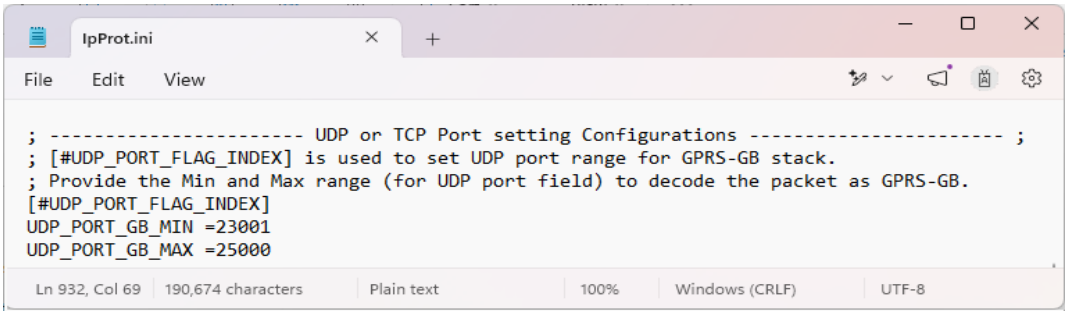

Figure: INI Decode Option for GPRS

GPRS Statistics

The Statistics are calculated based on the GPRS protocol fields. The screenshot below depicts statistic data based on the **Message Types** of GPRS protocol decodes in PacketScan™.

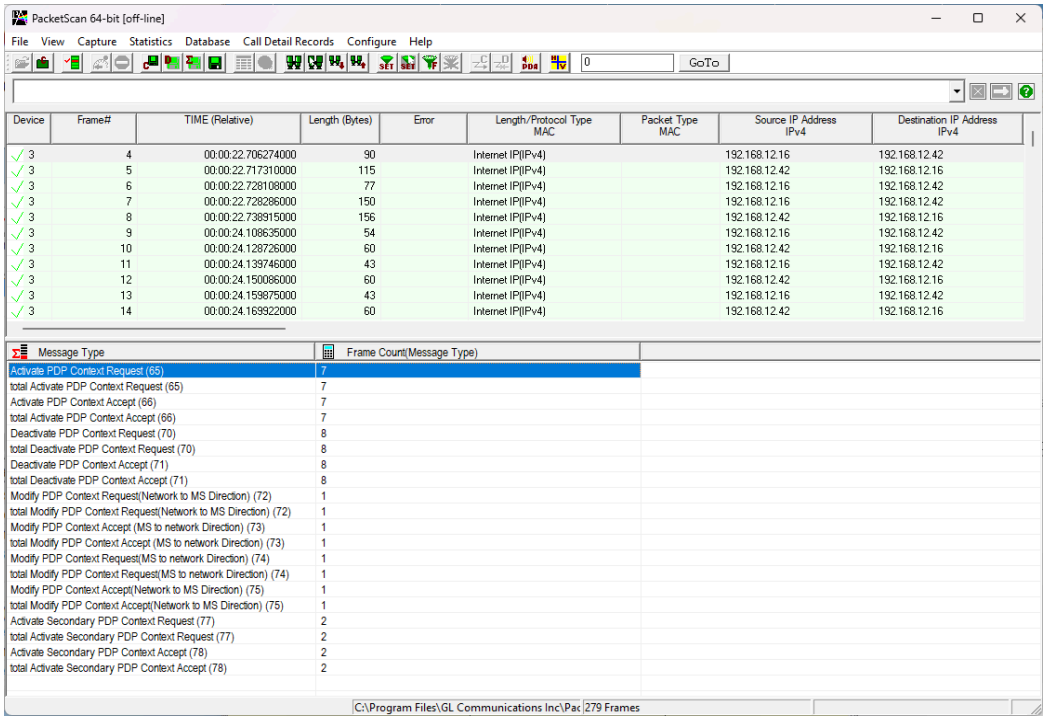

Figure: Statistics View

Network-Wide Monitoring of GPRS Network

GL's NetSurveyorWeb™ is a web-based client that can connect to GPRS 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 details, visit Packet Monitoring and Surveillance System webpage.

Buyer's Guide

Item No	Related Software
PKV103	IP Based GSM and UMTS Analysis
PKV109	Offline GSM and UMTS Analyzer, requires PKV101
PKV100	PacketScan™ - All IP/VoIP Analysis Software (Real-time and Offline)
PKV101	PacketScan™ - Offline
PKV120	PacketScan™ HD – High Density IP Traffic Analyzer w/ 4x1GigE - includes PKV100 – Online (not Offline) for temporary audio codec support
PKV122	PacketScan™ HD – High Density IP Traffic Analyzer w/ 2x10GigE - includes PKV100 – Online (not Offline) for temporary audio codec support
PKV170	NetSurveyorWeb™ (Network Surveillance Software) for IP Network

Note: PCs which include GL hardware/software require Intel or AMD processors for compliance.

For more details, refer PacketScan™-All IP Protocol Analyzer webpage.

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