VAS Experts ITG

Stingray PGW (Packet Data Network Gateway)

About VAS Experts

VAS Experts is a telecom software developer. Since 2013, we have completed **over 2000 installations** worldwide.

Our team has **over 25 years work experience** in telecommunication software development and wide knowledge in technologies.

20M+
users

More than
35 Tbps

Latest Installations:

- Middle East
- Europe
- CIS
- Africa
- South America
- Asia-Pacific

Our products

Stingray Service Gateway (SSG) — multifunctional platform for traffic management

For Internet service providers:

DPI

QoS-based traffic management, filtering by black and white lists

BNG/BRAS

Scalable and Cost-Effective Software Gateway

AntiDDoS

Protecting the operator's network from cyberattacks

QoE analytics

Traffic Monitoring and Analysis System

CG-NAT

Providing transparent network address and protocol translation

VEOS

Operating system

Our products

Stingray Service Gateway (SSG) — multifunctional platform for traffic management

For mobile operators:

PGW

An intelligent gateway that provides traffic control within the EPC architecture

PCEF

Flexible pricing based on various conditions in accordance with PCRF requirements

EPDG

Solution for launching Wi-Fi Calling (VoWiFi)

Own DPI Engine

History

2013 — DPI

2016 — CG-NAT

2017 — L3 BNG DualStack IPv4/IPv6

2018 — Lawful Interception

2019 — L2 BNG DualStack IPv4/IPv6

2020 — Mobile Networks Support, LBS

2021 — Border Router

2022 — VAS Cloud Services

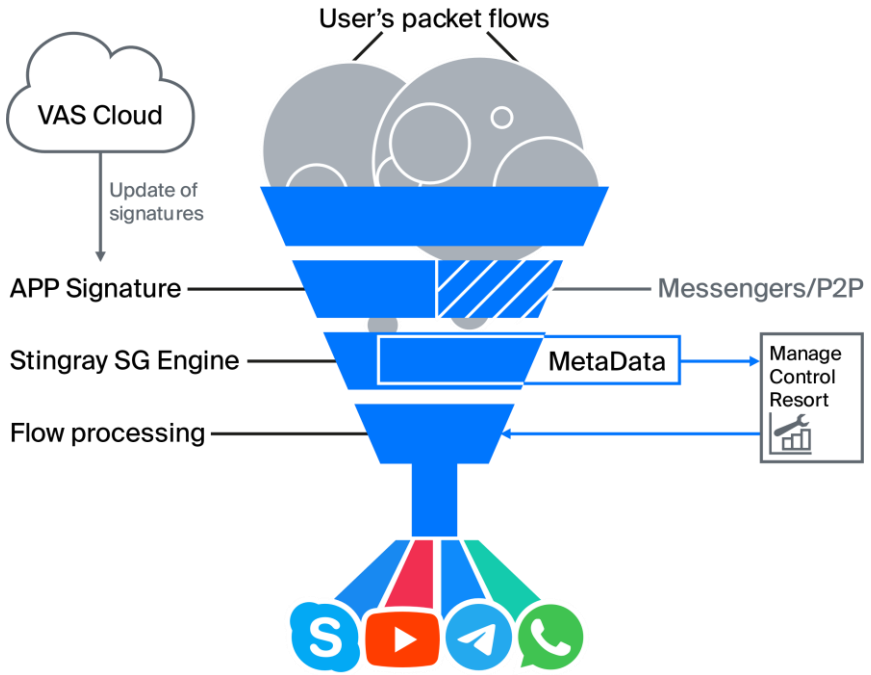
2023 — VEOS, On-Stick, EPDG

2024 — PCEF, Diameter

2025 — PGW, AntiDDoS

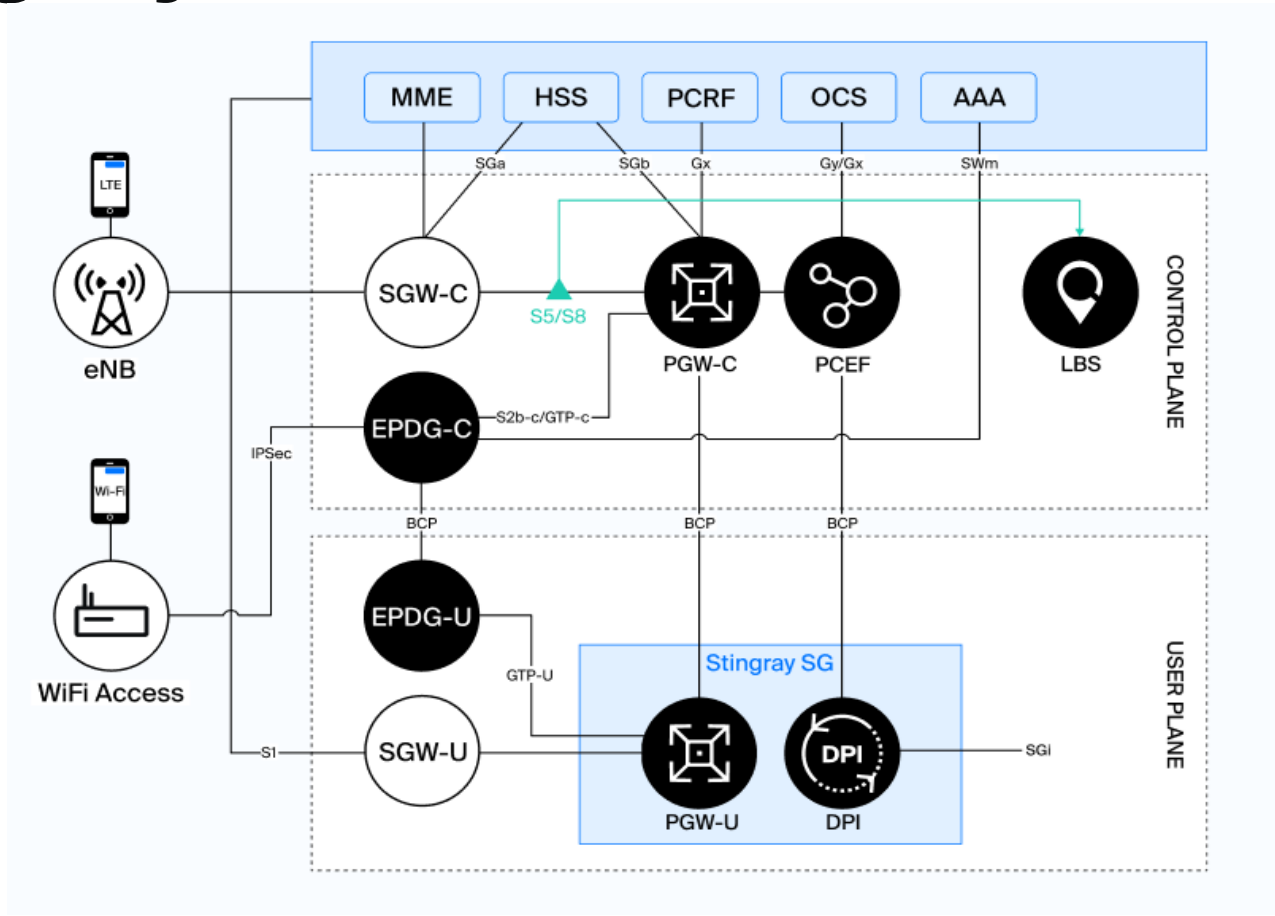
Stingray SG can compete with:

Sandvine	Cisco SCE	Cisco ASR	MikroTik	Ericsson SE
Allot	A10 Network	Juniper MX	Huawei NE	Nokia SR



Building and modernizing mobile networks with Stingray solutions

- The Stingray platform is implemented using **CUPS (Control and User Plane Separation)** technology, which provides flexibility in development and allows more precise load management
- Implementation of User Plane on the capabilities of proprietary DPI enables achieving high performance



PGW: purpose for the operator

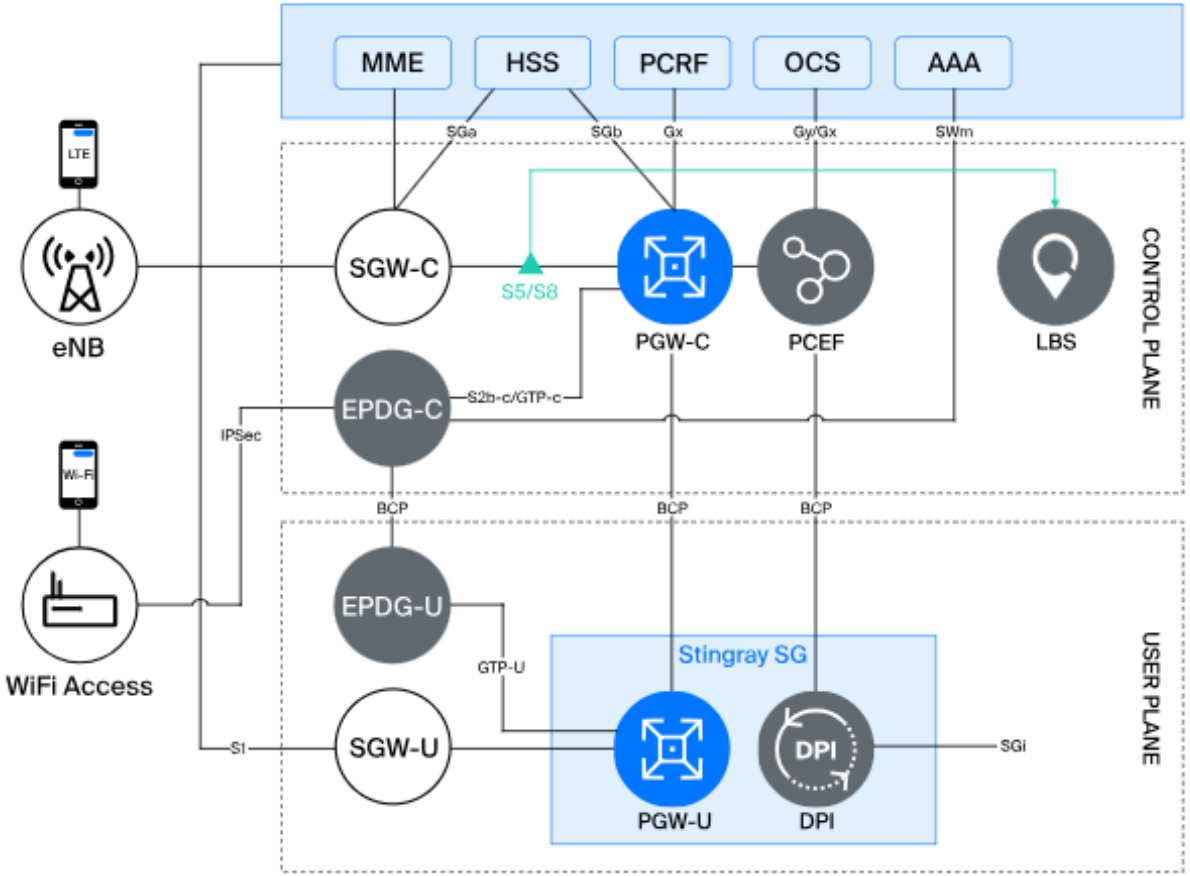
Packet Data Network Gateway is designed for use by telecommunications operators within the EPC (Evolved Packet Core) architecture of the LTE/4G standard. The node provides subscriber connectivity to external networks (Internet, IP networks), traffic management, QoS and billing.

- Connects network elements together
- Informs operator systems about events in subscriber traffic
- Performs subscriber traffic routing
- Ensures session continuity

PGW: operating principle and architecture

Stingray PGW from VAS Experts integrates into the LTE core of a telecommunications operator and interacts with EPC operator systems via the following interfaces:

Gx: between PCRF and PGW (Diameter).
SGi: between PGW and external data transmission networks.
S5/S8: between SGW and PGW (GTPv2). S8 connects an external SGW and home PGW when users are roaming; S5 connects local SGW and local PGW.
S2b: between ePDG and PGW.
S2a: Connection with TWAN, trusted Wi-Fi networks.
S6b: Integration with authentication systems for non-3GPP network subscribers (S2a, S2b).



Advantages of PGW from VAS Experts

1. Implementation in accordance with 3GPP specifications
2. Use of CUPS ensures reliability and service continuity
3. Support for up to 1 million subscribers on a single unit
4. Working with high-performance proprietary DPI enables customization and support for any client requirements
5. Support for native S2b interface allows implementing the Handover function between VoLTE and VoWiFi
6. 3G support for roaming operators that lack LTE support in some regions of presence
7. The solution works both as standalone (compatible with other PCEFs on the market) and together with Stingray PCEF from VAS Experts

Use Cases

Use in LTE/5G networks to ensure reliable connectivity to external networks

PGW is the exit point for all subscriber traffic to the external IP network. It assigns an IP address to the subscriber, routes packets and performs address translation (NAT).

Support for 5G Non-Standalone architecture

In the model where 5G radio (NR) uses the 4G core network (EPC), PGW remains a key element: it performs the same functions for 5G traffic, but with an additional element — eLTE (evolved LTE — a base station supporting 5G NR).

Inter-network interaction (Handover)

Ensures session continuity when switching between access technologies (for example, LTE and Wi-Fi, when ePDG technology is used).

Mobility support

When a subscriber moves between base stations and even between different SGWs (Serving Gateways), their PGW remains unchanged, which guarantees IP address consistency during a session, ensuring seamless mobility.

Geographic distribution of subscribers

Additional PGW modules at various geographic locations improve performance and reduce latency for subscribers of a geographically distributed telecommunications operator.

Mobile broadband access

Providing high-speed internet access for smartphones, tablets and modems. PGW manages sessions for millions of such devices simultaneously.

Follow The Experts

sales@vas.expert

vasexperts.com