

Mavenir ePDG

Software solution for Evolved Packet Data Gateway

Leverage Wi-Fi ubiquity

The presence of Wi-Fi at home and Wi-Fi hotspots at commercial centers, airports etc. has benefited operators by enabling data offload away from their overloaded cellular networks. The proportion of data traffic from smartphones that is delivered on Wi-Fi is climbing and will soon reach 50%.

With the advent of the all-IP network and IMS, operators can take advantage of this growing trend and create strategic value by integrating Wi-Fi as another access technology into their IMS core networks - thus extending service reach into difficult coverage areas, improving capacity management and lowering network costs while delivering an enhanced customer experience.

In order for end customers to accept and embrace this strategy, operators need to provide seamless authentication and mobility regardless of the access type. The same Wi-Fi access must continue to offer data offloading capability while enabling the user to get seamless access to valuable operator services whether on the macro cellular network or on Wi-Fi.

Mavenir ePDG for Secure and Seamless Connectivity

The Mavenir Evolved Packet Data Gateway (ePDG) is a standards based commercially proven network component that provides secure, cost efficient integration of Wi-Fi access into the LTE operator's Evolved Packet Core (EPC) while maintaining seamless mobility (ie handover of active sessions and voice calls) between Wi-Fi and LTE networks for critical services provided by the operator's IMS core network.



Improve Customer Satisfaction and Retention

The Mavenir ePDG enables operators to deliver consistent service capabilities on Wi-Fi networks and LTE networks. Wi-Fi subscribers, now fully integrated to the operator's core capabilities, have access to services such as voice, video, rich messaging, and Operators can continue to manage the customer's access to their core network via deep packet inspection (DPI), quality-of-service (QoS), policy control, charging, and lawful interception while maintaining call continuity.

Commercially Proven Platform

The Mavenir ePDG is built on the powerful, award-winning mOne® software platform, a proven platform already utilized in commercial Tier 1 deployments across Europe, North America, and Asia-Pacific. This patented platform provides consistent common functions across Mavenir products, reducing operational complexity while maintaining maximum deployment flexibility.

Key Benefits

- Mobility and service continuity across access networks
- Cost effective for any network size
- Carrier grade reliability and availability (99.999%)
- Eliminates hardware dependencies
- Commercially proven interoperability
- Rapid scalability
- Simplifies network operations
- Easier network integration
- Standards Compliant
- Optimized for mobile, fixed and cable networks
- Robust, secure access to untrusted and trusted Wi-Fi networks
- Consistent user experience
- Leverages existing VoLTE investments to launch VoWi-Fi
- Extends operator service to non-SIM devices
- Full operator control with extensive performance monitoring

Key Differentiators

- Robust security
- Virtualized options, cloud ready
- Modular architecture
- Commercially proven

Mavenir ePDG

Solution Overview

Robust Security

The Mavenir ePDG supports IPSEC/IKEv2 (Internet Key Exchange) tunnel towards the mobile device. A wide range of IPSEC tunnel modes IPv4-in-IPv4, IPv6-in-IPv6, IPv6-in-IPv4 are supported to allow maximum deployment flexibility. For authentication and authorization, the Mavenir ePDG supports the Extensible Authentication Protocol (EAP) framework, as well as certificate-based options for both for SIM based primary and non-SIM based secondary devices. The Mavenir ePDG also supports IMSI filtering and device blacklisting to prevent IKE and authentication, authorization, and access control (AAA) overload, as well as built-in Denial of Service (DoS) prevention mechanisms.

Seamless Mobility

The ePDG employs a make-before-break mechanism to ensure the fastest possible handover, making it suitable for latency sensitive applications such as VoWi-Fi. Users can place either Voice over LTE (VoLTE) or Voice over Wi-Fi (VoWi-Fi) calls and seamless handoffs can occur between the two environments. When the user moves across multiple Wi-Fi access networks, the mobility and multi-homing protocol (MOBIKE) ensures efficient management of IKE and IPSEC security associations when changes occur in the IPSEC host's IP address. This enables seamless mobility between different Wi-Fi access networks.

Voice over Wi-Fi Calling

For Wi-Fi Calling, the Mavenir ePDG supports all the required protocols based on IMS core technology. Wi-Fi Calling improves operator network coverage and offloads traffic. It reduces cost and also strengthens operator's competitive position. Mavenir provides a comprehensive Wi-Fi calling voice solution consisting of a Telephony Application Server (TAS), IMS Core, Session Border Controller (SBC), VoWiFi Mobile Client and an ePDG.

Session Resiliency

The Mavenir ePDG protects user sessions with powerful redundancy capability. The session resiliency supports state replication between active and standby modules. The Mavenir ePDG supports both static and dynamic PGW selection algorithms. Weight-based load balancing is also supported in the event that multiple PGWs are returned in the DNS response.

Cost Effective, Flexible Deployment

The software-only Mavenir ePDG eliminates dependencies on the underlying hardware, with cost effective flexible deployment options using either COTS hardware and/or virtualization infrastructure and allows seamless deployment in existing virtualized environment. Built on the powerful mOne platform, the Mavenir ePDG allows an easy evolution path for operators moving towards virtualized environments.

Mavenir has demonstrated significant cost and time-to-market advantages to service providers. The commercially proven mOne platform provides consistent common functions across products, reducing operational complexity while maintaining maximum deployment flexibility.

Key Features

Robust Security

- Secure access via IPSEC/IKEv2, RFC 4301/4306
- SIM authentication via EAP-AKA
- Non SIM device authentication via EAP-TLS
- IMSI filtering and black listing and access control lists
- Denial of service protection (DoS)
- Compliant to 3GPP TS 33.402

Mobility

- Seamless mobility
- Inter-Wi-Fi mobility (MOBIKE)
- QoS monitoring

Session handling

- Session resiliency
- VoWi-Fi calling protocol support
- Optimized packet processing QoS
- Dynamic PGW selection
- IPv4 and/or IPv6 PDN connection

<http://www.mavenir.com>