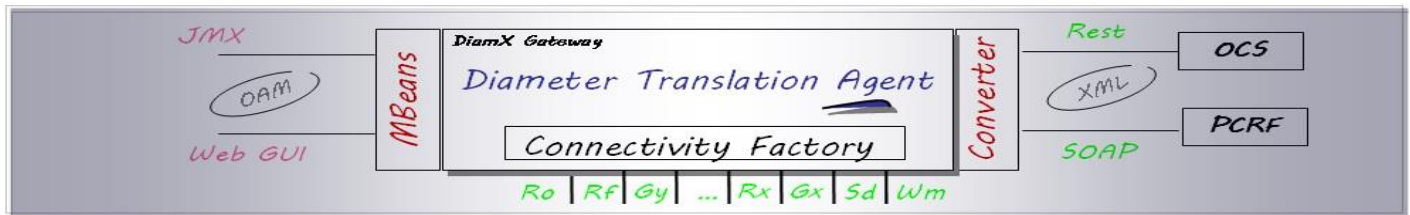# MARBEN DIAMX GATEWAY

THE RELIABLE GATEWAY SYSTEM FOR DIAMETER INTERCONNECTIVITY

CARRIER GRADE DIAMETER GATEWAY FOR RAPIDLY INTERCONNECTING MOBILE NETWORK OPERATORS SYSTEMS – BILLING, CHARGING, AUTHENTICATION– TO THE LTE NETWORK.

QUICKLY ENABLE DIAMETER CONNECTIVITY– *PLUG AND PLAY APPROACH.*

EASY TO USE AND CONFIGURE WITHOUT DIAMETER KNOWLEDGE

- Configure and run through OAM web portal
- Comprehensive graphical user interface
- Easy command line interface and API for fast integration

INTEROPERABLE AND WIDELY DEPLOYED

- MARBEN DiamX Gateway relies on MARBEN DiamX stack that is widely deployed and having proven interoperability with wide equipment manufacturers for more than 10 years.
- Independently deployable to work from day one with Mobile Network Operators (MNOs).

FLEXIBLE AND ADAPTATIVE – *SATISFY SPECIFIC REQUIREMENTS.*

TRANSLATION FUNCTIONS

- Radius Gi and SGi for interoperability with 2G/3G standard
- SS7/SIGTRAN Camel to diameter
- HTTP/REST Interface for easy message exchange
- Easily Extensible to any other interfaces e.g. HTTP/JSON, SOAP/WSDL, XML-RPC

3GPP AND GSMA COMPLIANCE BUT EXTENSIBLE

- Marben is committed to follow 3GPP standards and to provide the implementation of the latest versions of these standards so you can have peace of mind for future upgrades.
- Keeps Diameter standard openness and extensibility by allowing you to dynamically extend Diameter application.

CARRIER GRADE READY – *SCALABLE, RELIABLE AND OPERATIVE.*

OPERATIONAL CAPABILITIES

- Monitor, report and troubleshoot with logs, statistics, call tracking, CDR generation, KPI generation

LINEAR SCALABILITY AND SECURITY

- High performance is gained through an architecture supporting linear scalability
- Active/Active Back-end processing for real-time Cluster Scalability in production system ensuring zero downtime
- Secures AAA data with TLS, DTLS and SCTP

TARGET APPLICATIONS

Applications and Billing Infrastructure (ABI) initiated in the Web development without Telecom interface,
Inter-operability with legacy systems,
Securely exposes a web based network APIs to PCRF, OCS and subscriber data for OTT providers Online Charging Server (OCS)

About Marben

A leading provider of key software solutions for next generation service-driven networks.

More than 30 years of experience

Delivers interoperable, robust and efficient signaling, routing and AAA solutions to accelerate the delivery of network services.

Marben Customers

Airbus, Be-Mobile, Bosch, Ciena, Cisco, Continental, CSG, Ericsson, ESA, Fujitsu, GMV, HP, Nokia, NEC, Oracle, Siemens, Sprint, Telstra, Valeo, Verizon, Volvo …

MARBEN DIAMX GATEWAY

TECHNICAL OVERVIEW

Mobile Network Operators (MNOs) are currently planning or deploying their new LTE radio network and IP based signaling network to bring advance services to their mobile users. While keeping their legacy network operational and profitable through advanced Policy control point or charging servers, MNOs want to reuse part of deployed technology that had proven their reliability and profitability. They will need mediation boxes that convert their proprietary or web based protocols used within those networks equipment to the new 3GPP Diameter signaling architecture that is now provided on GGSN/PDN gateway/CSCF equipment. Mobile Virtual Network Operators (MVNOs) are also looking for quick Diameter enabler to connect to the diameter interfaced equipment running into their host mobile operator's LTE network. Marben has been instrumental in providing such custom solutions to overcome constrains and network requirements: MARBEN DiamX Gateway is a Carrier Grade Diameter Mediation Gateway to enable Diameter inter-connectivity to mobile networks with Evolved Packet Core and IMS systems. Thanks to its widely deployed Diameter Stack, it mediates any Diameter interfaces to any web based or proprietary interfaces. Highly scalable DiamX Gateway is deployable from day one either on a single virtual container, a x86 server or on a chassis of a 2-node cluster or even on a distributed architecture with Front-End Process (FEP) and Back-End Processes nodes (BEP) supporting cluster environment for heavy throughputs. An active load management enables an intelligent dispatch when receiving and sending calls among FEP and BEP. Two 1U servers can supports thousands of messages per second. Please contact Marben representative for performance benchmark details.

**DiamX Gateway offers the following benefits to MNOs and MVNOs:**

- Rich Mediation Gateway offering off-the-shelf solution to interwork with any LTE network equipment: DiamX Gateway supports multiple transport connectivity (TCP, SCTP, TCP/TLS, SCTP/DTLS). Handles simultaneous connections to many peers on various Diameter interfaces. DiamX Gateway can be configured to create client or server role using a simple OAM interface. It supports session management on all Diameter interfaces so application is free to perform business intelligence. Third party protocols can easily be plugged as Add-ons for LDAP/MAP/RADIUS conversion.

- Reliable System: Taking advantages of its "in the field" experience stack, DiamX Gateway handles multiple Diameter 3GPP releases in the same platform. New release support or complete Diameter applications could be added without interrupting the existing services. BEP nodes in the distributed configuration could be added or removed from the cluster to face a planned traffic change without any impact on the deployed services.

- An Efficient and Scalable Solution: A Single DiamX Gateway can simultaneously handle hundreds of peer connections and application roles on various interfaces in the operator's network. DiamX Gateway supports dynamically loadable and extendable dictionary to adapt Diameter Attribute Value Pairs (AVP) set to specific constraints or requirements: Every Diameter AVPs of received messages can be modified or blocked on-the-fly by the operator to handle interworking issues or hiding functions.

- Secure Gateway to handle fraud management: Enable Security e.g. IPSec, TLS and DTLS with encryption algorithms are natively supported. The gateway management itself is controlled through an access control list of users and user' profiles, it is managed using OAM GUI that is accessed through user authentication functions. Detailed logs and statistics are available on demand for real-time check and control. Real time Alarm notifications are sent in case of any intrusions or dysfunctions.

DiamX Gateway is proven and tested by MVNOs/MNOs and operational in less than a month. Marben' customers get their host MNO acceptance for connecting to their PS-Core within few weeks. Ask Marben for use cases and an evaluation.
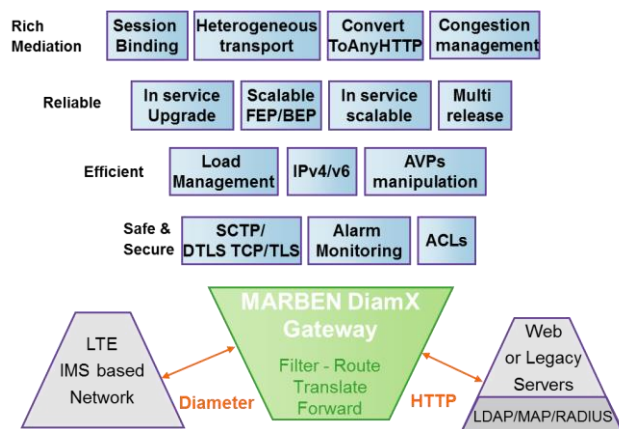
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CONFORMANCE

Base Protocol: RFC 3588 and RFC 6733

Translation agent role, Static/dynamic peer discovery

S-NAPTR: RFC 6408

Credit Control Application: RFC 4006,

All interfaces: Sh/Dh, Zh/Zh'/Dz, Zn, S6a/S6d, Cx/Dx, SWx, STa, SWd, SWm, SWx and S6b/H2 S6m/S6n and S6t for AAA, Rf, SCAP, S13, S7a, S7d, SLg, SLh, SWa, S6c, SGd for offline charging, Ro, Gy, CCA for online charging, Ph, Px for presence, Tx, Gx, Rx, Gq, Gq', e2, e4, S9, Zpn, Gxx, Sd, Sy, Gi, Sgi, S15 for Policy and QoS, T4, T6a/T6b/T6ai/T6bi/T7 for Interworking functions, V4 for V2X, Interface per release 6 to 14.

Diameter Update Capabilities Application: RFC 6737

Supports HTTP and HTTPS.

Java MBean management and monitoring.

SNMP management and monitoring.

SYSTEM REQUIREMENTS

Runs on any x86 integrated platform or virtual container where either Sun Java RE (v1.7, v1.8 or v1.9) or Open JDK (v1.7, v1.8 or v1.9) is available.

RELATED OFFERS

MARBEN DiamX Stack

MARBEN DiamX Router

Consulting, Training,

Onsite Professional Services,

Turnkey Projects.

DIAMX/GTW/DSH V2.1