MARBEN DIAMX STACKS

EFFICIENT TO SECURE AND MONETIZE NEXT GENERATION NETWORK SERVICES

NATIVE JAVA AND C++ FLEXIBLE MARBEN DIAMX DIAMETER STACKS FOR A QUICK GO-TO-MARKET IN EPC/LTE SERVICES AT LOW RISK AND HIGH RETURNS.

QUICK GO-TO-MARKET - OFFERS COMPLETE DIAMETER CONNECTIVITY AT SMALL INTEGRATION COST.

EASY INTEGRATION

- Two implementations for better integration: Native Java and C++.
- Friendly APIs guaranteed short learning curve.
- Very complete documentation and sample code for quick jump start.

STANDARD AND INTEROPERABLE

- MARBEN Diameter is tested for standard compliance and proven interoperability with industry equipment.

CUSTOMIZABLE AND FUTURE PROOF - FOLLOWS THE STANDARDS AND IS ADAPTIVE TO SPECIFIC REQUIREMENTS.

FOLLOW STANDARD EVOLUTION

- Marben is committed to follow IMS/LTE and NGN standards and to provide the implementation of the latest versions of these standards. 5G ready.

OPEN AND EXTENSIBLE SOLUTION

- Keeps Diameter standard openness and extensibility by allowing to dynamically extend Diameter applications commands and AVP set.

CARRIER GRADE READY - ENABLES TO MEET THE REQUIREMENTS OF NEXT GENERATION BROADBAND NETWORKS.

HIGH PERFORMANCE AND CONGESTION MANAGEMENT

- Multi-threaded architecture ready for multi-core, multi-processor architectures. Very efficient message switching ensuring very low latency. Adapted for Diameter load balancer and routing agent.
- Detects congestion and provide alternative route

HIGH AVAILABILITY AND SECURITY

- Extends intrinsic Diameter protocol reliability mechanisms by supporting an active/standby High Availability (HA).
- Secures AAA data with DTLS, TLS and IPsec when offered by the hosting operating system.

TARGET APPLICATIONS

3GPP2 AAA servers,
Policy Decision Function (PDF),
Diameter Proxy, Relay Redirect,
Diameter load balancer,
Home Subscriber Server (HSS),
Application Server (AS),
Online Charging Server (OCS),
Mobility Management Entity, QOS servers

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 STACKS

TECHNICAL OVERVIEW

The MARBEN DiamX Stack offer consists of two products: MARBEN DiamX Stack **Java,** a Diameter stack implemented in **native Java** and MARBEN DiamX Stack **C++**, a Diameter stack written in C++. Both products are optimized to fully take advantages of any running environment and offer a perfect integration with Java or C++ environment.

MARBEN DiamX stacks are packaged as libraries to be embedded into EPC/LTE and IMS software applications. They share the same design concept and provide the identical level of functionality as detailed below.

RICH SET OF INTERFACES

The core of MARBEN Diameter Java and C++ stacks is a robust and high-performance implementation of the Diameter base protocol (RFC 6733 and 3588). MARBEN DiamX stacks include the following features:

- Peer transport connection with failover/failback.
- Proxy, Relay and Redirect functions with priority routing.
- Stateless and stateful session management.
- Support of TCP & SCTP, with/without TLS, DTLS & IPsec.
- Support for High Availability compatible with SAF specifications.
- Client and server role for DBP and all applications.
- Diameter Update Capabilities Application: RFC 6737

On top of the base protocol, MARBEN DiamX stack implements more than **50 Diameter applications (interfaces)**:
The supported applications are NAS, EAP, Sh/Dh, Zh/Zh'/Dz, Zn, S6a/S6d, Cx/Dx, SWx, STa, SWd, SWm, S6b/H2, S6m/S6n and S6t for AAA, Rf, SCAP, S13/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. Those interfaces cover requirements from IETF, 3GPP all releases, 3GPP2, TISPAN and Ericsson and thus making it the most complete Diameter implementation of the market.

SPECIALIZED APIS AND EXTENSIBLE DIAMETER APPLICATIONS

Each of the supported Diameter application is accessed via a dedicated API for facilitating access to Diameter messages. All these APIs follow the same high-level object and well designed making them easy to learn and to mix with SIP or other signaling protocol in the same application.

The Diameter application commands are stored in XML dictionary. This dictionary is dynamically loadable and extendable to allow service developers to adapt AVP set to specific constraints or requirements.

APIs include primitives for building and parsing the sequence of AVPs in Diameter messages. Parsing is driven by the Diameter command syntax description stored in the XML dictionary and brings adaptability and openness to applications. Specialized APIs give direct access to values of the most important AVPs of Diameter message.
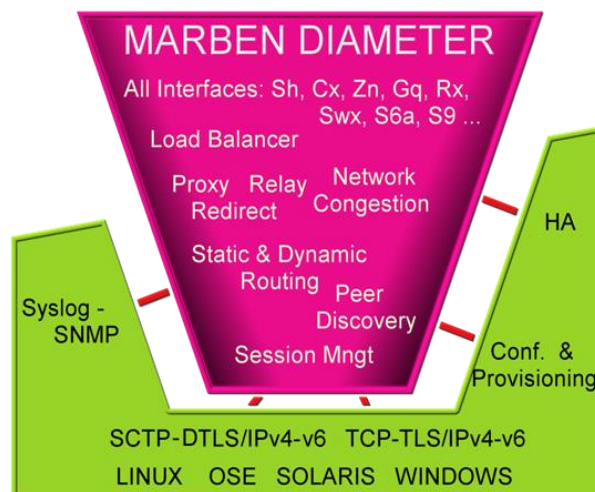
CONTACTS

Marben Products
30 rue Pasteur
92150 Suresnes, FRANCE
Phone: +33 1 7962 1018

Artifex Solutions, Ltd.
3883 Rogers Bridge Road,
Suite 504 - Duluth,
Georgia 30097 - USA
Phone: +1 770 709 7238

Sales information:
sales@marben-products.com
www.marben-products.com

CONFORMANCE

3GPP:
Cx/Dx/Px9(TS 29.229); Gi/Sgi(TS 29.061); Gq(TS 29.209); Gx, Gxx, S15, Sd (TS 29.212); Rf, Ro/Gy(TS 32.299); Rx(TS 29.214); S13/S13', S6a/S6d, S7a/S7d(TS 29.272); S6b/H2, STa/SWa/SWd, SWm, SWx(TS 29.273); S6c, SGd(TS 29.338); S6m/S6n, S6t(TS 29.336); S9(TS 29.215); Sh/Dh/Ph(TS 29.329); SLg(TS 29.172); SLh(TS 29.173); Sy(TS 29.219); T4(TS 29.337); T6a/T6b/T6ai/T6bi/T7(TS 29.128); Tsp(TS 29.368); V4(TS 29.388); Zh/Zh', Zn, Zpn(TS 29.109)

3GPP2: Tx(X.S0013-013-0)

RFC:
CCA (RFC 4006); Diameter Base Protocol (RFC 3588 & RFC 6733); Diameter EAP (RFC 4072); NASREQ (RFC 4005); Diameter Routing Message Priority (RFC 7944); Diameter Overload Indication Conveyance (RFC 7683)

ETSI: E2(TS 283.035); E4(TS 283.034); Gq'(TS 183.017)

Ericsson:
SCAP (Ericsson 1553-HSD 108 06/1)

SNMP management and monitoring

SYSTEM REQUIREMENTS

MARBEN Java Diameter requires:

- Sun Java RE v1.5 or higher.
- Open JDK v1.5 or higher
- OpenSSL v0.9.8e for TLS support

MARBEN C++ Diameter qualified on:

- RedHat and other Linux on Intel x86 and x86_64,
- Solaris 10 on SPARC and x86_64,
- HP-UX 11iv2 & v3 on PA-RISC and Itanium,
- Windows

RELATED OFFERS

MARBEN DiamX Gateway,

MARBEN DiamX Router,

Consulting, Training, Turnkey projects.