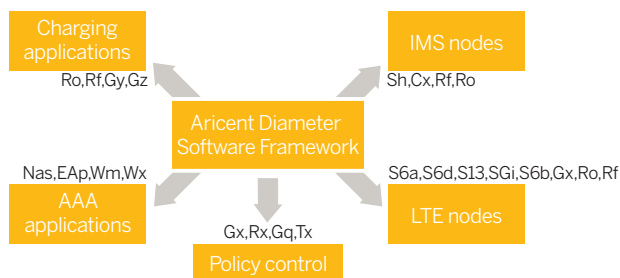# Aricent Diameter Software Framework

Diameter is a critical protocol in modern telecom networks. It has evolved from being a successor to the RADIUS protocol to one that is central to advanced telecommunication networks. Besides authentication, authorization, and accounting (AAA), it is widely used for policy updates and charging applications. The surge of data-hungry smart devices has further increased the importance of Diameter signaling in LTE and IMS networks.

ARICENT'S DIAMETER SOFTWARE FRAMEWORK

The Aricent Diameter software framework supports many application interfaces, with carrier grade features and easy to use APIs that simplify product development and evolution.



DIAMETER SOFTWARE FRAMEWORK FOR END NODES

The Aricent Diameter framework can be used in a variety of solutions including MME, SGW, PGW, and PCRF. We offer the complete portfolio of Diameter interfaces used in LTE, IMS, and CDMA networks. Aricent's Diameter framework consists of the Diameter Front Node (DFN) and the Application Processing Node (APN). The Aricent Diameter Front Node implements base Diameter functionalities and performs relay, proxy, and redirect operations, while the Application Processing Node exposes APIs for application developers to help them build the core application logic quickly.

KEY CAPABILITIES

Most Extensive Compliance: Support for more than 20 important interfaces including Sh, Cx, Dx, Ro, Rf, CCA, NASREQ, EAP, Wx, Wm, Gx, Rx, Tx, Gq, S6a, S6d, S7, S13, Sgi, etc.

Modularity and Ease of Use: Highly portable multithreaded architecture that is ready for multicore, multiprocessor environments and can be easily extended to support any new interface.

Carrier-Grade Features: Distributed architecture providing high capacity, fault tolerance, scalability, load sharing, redundancy, and support for TCP/SCTP/TLS and IPv4/IPv6.
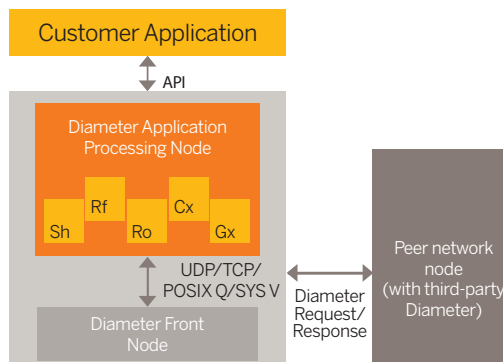
Aricent Diameter Stack

DIAMETER ROUTER

The Aricent Diameter router (DR) software can be deployed as a relay, proxy, or redirect agent. It supports more than 207,000 messages per second in the basic redundant mode, and 230,000 messages per second in non-redundant mode for proxy functionality on a quad core Intel X3460 processor with a speed of 2.8Ghz.
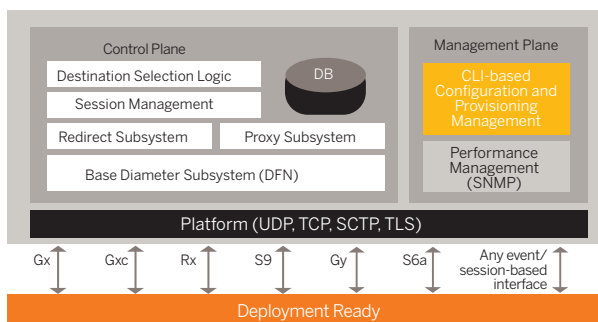

Aricent DR Software Architecture

Following are some of the use cases for which the Diameter router software can be configured:

PCRF Discovery: As a Diameter routing agent (DRA), it can act as a proxy and redirect agent simultaneously, using multiple attribute-value pairs as input filter criteria for PCRF discovery.

HSS Selection: Our DR software can interface between multiple MME/GGSN and HSS nodes to route the messages for a particular subscriber on the designated HSS.

OCS Selection: The DR can be deployed to select a specific OCS for a particular set of subscribers using the Gy interface. This simplifies the deployment of an OCS in the MVNO mode in a network with another third-party OCS.
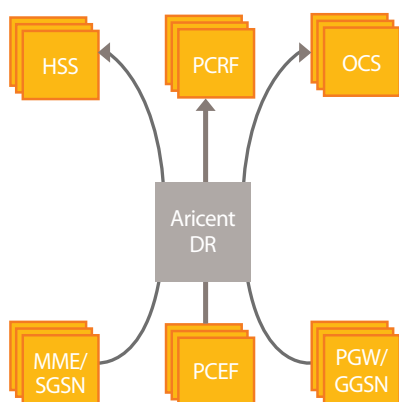
KEY CAPABILITIES

Rich Compliance: Our DR software can be deployed as an IETF Diameter agent, 3GPP Diameter routing agent, or GSMA Diameter edge agent (DEA). Currently it supports all the important LTE and IMS interfaces and can be easily extended to support any new interface.

Flexible Message Routing: The DR software templates can be configured to select different operation modes including proxy or redirect, and can also act as a load balancer supporting weighted distribution of incoming requests to destination servers.

Multiple Configuration Options: Various configuration options such as static (XML and text file based), command line interface, and well-defined easy-to-use APIs for monitoring, statistics, and third-party integration are supported by our software.

Carrier-Grade Features: High availability through 1:1 active-standby redundancy configuration, high-redundancy based on Aricent's proven High Availability Framework (HAF), support for more than 200,000 messages per second in basic configuration with redundancy, multithreaded design, and configurable number of sessions are built into the Aricent DR software.

CUSTOMER BENEFITS

Higher Cost Savings: With its ability to support Diameter messages over several interfaces, our Diameter software is a single framework that can be deployed across the network, thereby saving the cost of installing a different solution for each interface.

Accelerated Time to Market: Since our Diameter software framework implements functionalities defined in the 3GPP and IETF specifications, and provides a very easy-to-use user and management interface, it can be quickly customized and configured for deployment into the field.

Enhanced Network Security: The high degree of flexibility and interoperability built into our DR implementation allows it to be installed on network edges to hide internal topology and reinforce network security.

Reduced Risk: Our field-ready carrier-grade Diameter software and frameworks have been deployed in the field for more than five years now, with proven interoperability and customization for future-ready products designed for scalability, reliability, flexibility, and easy manageability.

For more information, visit
aricent.com/software/diameter-software-frameworks.html

> aricent.com