MACH7-DIAMETER

"Signaling solution for All-IP Networks"

Overview

Diameter is the signaling protocol for converged telecom network facilitating deployment of an all-IP based IP Multimedia Subsystem (IMS) in the 3G network and Evolved Packet Core (EPC) for LTE 4G networks. Today Diameter has been standardized as the protocol for policy management, charging and subscription management in next generation networks.

Diameter Base Protocol was initially defined by IETF for AAA (Accounting, Authorization and Authentication) services. This was further extended by 3GPP /3GPP2 standards body for IMS networks and most recently for EPC networks with additional command codes and attribute value pairs (AVPs).
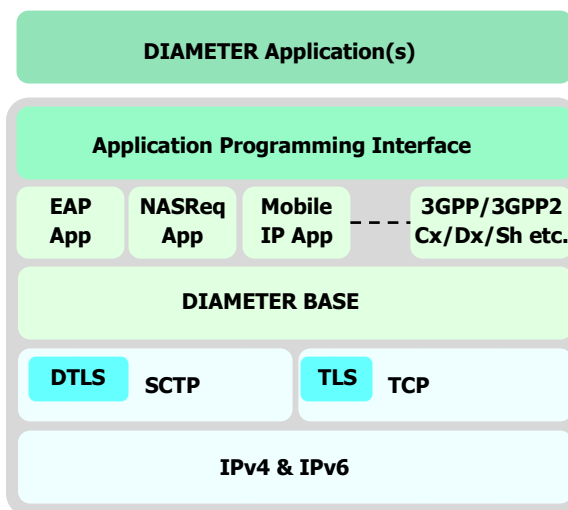
teleSys' Diameter

teleSys Diameter solution provides full implementation of Diameter Base Protocol (RFC 3588) and in compliance with all major standards and interfaces as specified by IETF, 3GPP, 3GPP2 and ETSI.

MACH7-Diameter offers easy-to-integrate programming interface for the base protocol and associated interfaces, to build 3G/4G network elements and applications with complete abstraction from functional complexities of transport and session control. It incorporates all mandatory and optional components of Diameter Protocol to integrate and deliver real-time Multi-Media, Charging, Billing, Subscriber Data Management and Mobility services in 3G/IMS, 4G/EPC and WiMAX networks.

MACH7-DIAMETER provides full Diameter client, server and agents (relay, proxy, redirect) functionality to the integrated application(s), which can also utilize other MACH7 signaling components, including SS7/SIGTRAN, to bridge with legacy network nodes.

Target Applications

- AAA servers
- Policy Decision Functions (PDF)
- Diameter Routing & Edge Agent (DRA/DEA)
- Diameter Load Balancer
- Home Subscriber Server (HSS)
- Application Servers (AS)
- Online/Offline Charging Server (OCS/OFCS)
- Mobility Management Entity (MME)
- Policy and Charging Rules Function (PCRF)
- Call Session Control Function (CSCF)
- Service Delivery Platform (SDP)

DIAMETER Application(s)

Application Programming Interface

| EAP App | NASReq App | Mobile IP App | | 3GPP/3GPP2 Cx/Dx/Sh etc. |

DIAMETER BASE

| DTLS | SCTP | TLS | TCP |

IPv4 & IPv6

Benefits

➢ Accelerated time-to-market with complete cross-platform portability due to open architecture implementation.

➢ Standards based protocol implementation for complete network interoperability.

➢ Comprehensive roadmap, maintenance and support plan for product evolution.

➢ Customized training program with onsite integration services.

➢ Designed and built to address service providers 3G/4G network control plane and service requirements for scalability, reliability, flexibility and easy manageability with high performance.

MACH7-DIAMETER

Product Features

➢ Designed to utilize multi-core, multi-CPU systems to meet network performance demands.

➢ Easy-to-integrate thread-safe Application Programming Interfaces (APIs) for next-generation services and applications.

➢ Message validation, error handling and user friendly notifications.

➢ Extensible framework allowing dynamic addition of new and vendor-specific Diameter command codes and AVPs.

➢ Open and flexible interface for provisioning, monitoring and management.

➢ Advance debugging and tracing capabilities for troubleshooting.

➢ Facilitate carrier-grade reliable and scalable architecture for next-generation applications to meet high-performance needs with low latency.

Protocol Features

➢ Peer Discovery

➢ Peer Capabilities Negotiation

➢ Peer State and Connection Management

➢ Transport and Session Control

➢ Timer Management

➢ Simultaneous hosting of multiple application instances

➢ Failover and fallback procedures for high-availability

➢ SCTP & TCP as transport protocols

➢ IPv4 & IPv6 as communication interface

➢ TLS / DTLS for security

➢ Server, Client , Relay, Proxy and Redirect mode of operation

➢ Complete Diameter base implementation with dozens of Diameter interfaces

teleSys Advantage

- **OPEN ARCHITECTURE**

teleSys' MACH7 solutions provide a scalable and flexible architecture for applications that require services from Next Generation network. Operating on industry standard Solaris and Linux host environment, provides manageability and capabilities for cost effective and flexible growth.

- **CARRIER PROVEN**

Broad range of MACH7 Signaling Solutions are mature, carrier proven and successfully deployed worldwide with rich feature sets. It ensures carrier-grade reliability allowing high-available configurations to the application(s).

- **COST-EFFICIENT**

Solution utilizes industry-standard servers benefiting from the price, performance, and capacity improvements of the underlying hardware platform.

- **FUTURE PROOF**

teleSys' is committed to follow IMS and NGN standards to provide all OEM customers the capability to offer enhanced applications compliant with latest signaling protocol standards and interfaces as they emerge.

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MACH7-DIAMETER

Technical Specifications

- **Standards Compliances & Interfaces***

Following are the compliances of MACH7-DIAMETER protocol and supported interfaces to industry standards.

- ♦ **IETF Standards**

  - DIAMETER Base (RFC 3588)
  - Mobile IPv4 Application (RFC 4004)
  - Network Access ServerApp (RFC 4005)
  - Credit Control Application (RFC 4006)
  - EAP Application (RFC 4072)
  - SIP Application (RFC 4740)
  - Mobile IPv6 Application (RFC 5447)
  - Gz (TS 32.295)
  - Sy (TS 29.219)
  - Dw/Wa/Wd/Wx/Wm/Wg (TS 29.234)
  - S6a/S6d interfaces (TS 29.272)
  - S6b/SWa/SWd/SWx/SWm (TS 29.273)
  - S9 (TS 29.215)
  - S13 (TS 29.272)

- ♦ **3GPP Standards**

  - Ro/Rf (TS 32.299)
  - Sh/Dh (TS 29.328, TS 29.329)
  - Sp (TS 23.203, TS 29.328, TS 29.329)
  - Cx/Dx (TS 29.228, TS 29.229)
  - Rx (TS 29.214)
  - Gx/Sd (TS 29.212)
  - Gxa/Gxb/Gxc (TS 23.203)

- ♦ **3GPP2 Standards**

  - Ro/Rf (X.S0013-007, X.S0013-008)
  - Sh/Dh (X.S0013-011)
  - Cx/Dx (X.S0013-005, X.S0013-006)
  - Tx (X.S0013-013)
  - Ty (X.S0013-014)

- ♦ **ETSI Standards**

  - Rq (ETSI TS 183 026)

*** *Please contact teleSys for the required list of interfaces & compliance tables*

- **Transport & Security**

  - ♦ **SCTP or TCP as transport**

    - SCTP (IETF RFC 2960/4960)

  - ♦ **TLS / DTLS for security**

    - DTLS (IETF RFC 4347)
    - TLS (IETF RFC 4346)

teleSys Software, Inc.

teleSys is the premier provider of advanced Telecommunications solutions for the next generation LTE Signaling Networks, providing open systems hardware and software.