YateHSS/HLR

The YateHSS/HLR stores and manages the SIM database for mobile networks. It also manages multiple subscriber identities (from different technologies) in one server, providing seamless services over different networks. It is designed for use in GSM, UMTS, LTE, IMS, WiFi networks or any other type of network that uses MAP or Diameter for authentication.

The YateHSS/HLR includes a Home Location Register (HLR), an Authentication Center (Auc) (2G/3G) and a Home Subscriber Server (HSS) (4G LTE). The YateHSS/HLR exports a JSON API for integration with any SIM management and CRM systems. It is capable of interconnecting with all the VLRs implemented in a GSM mobile network, with any MME from a conventional LTE network, or with the YateUCN core network server.

As it is also an AuC, the YateHSS/HLR authenticates subscribers as they try to connect to the GSM, UMTS, or the LTE networks, to make phone calls, send SMSs and access mobile data.

Features and benefits

- The YateHSS/HLR is fully implemented in software and uses commodity hardware.
- Can serve as a proxy between an existing 2G/3G HLR and an LTE network.
- Uses the SS7 MAP interfaces when serving as an HLR with other 2G/3G network equipment.
- Provides Diameter support.
- Supports groups for mobile data and CAMEL profiles.
- Scalable by adding more HSS/HLR components, either distributed or load balanced.
- Exports a JSON API for custom features.
- Managed via a web-based management interface.

Software specifications

Roaming	SS7 MAP (2G/3G) | Diameter (4G)
Interfaces	S6a/S6d (MME/SGSN to and from YateHSS/HLR) | Cx/Dx (I-CSCF/S-CSCF to and from YateHSS/HLR)
Supported networks	2G/3G over MAP (ETSI) protocol 4G over MAP or Diameter protocol IMS (VoLTE) over Diameter protocol
Supported authentication	2G SIM using COMP128-1, 2 or 3 algorithms 3G/4G USIM using MILENAGE algorithm Derivation of 2G triplets from USIM quintuplets IMS AKAv1-MD5 ISIM/USIM using MILENAGE algorithm SIP MD5 Digest Configurable partitioning of USIM/ISIM sequence number indexes

Communication protocols	MAP/SS7/SIGTRAN: - ITU TCAP, ETSI MAP v3 - ITU or ANSI SCCP and SS7 MTP - M2PA or M3UA-ASP over SIGTRAN, SCTP (CRC32) - E.164, E.212, E.214, TT or PC SCCP addressing - can connect to multiple STP/GW Diameter - 3GPP Applications S6a/S6d, Cx/Dx - SCTP or TCP transport - can establish or listen for connections - can connect to multiple Routing Agents HTTP - JSON API server for configuration and subscriber management - REST API client for visited network change notification SNMP - SNMP v2 or v3 for information retrieval - Traps sending for alarms Telnet - management CLI - optional SSL and password protection
CS services	Supplementary Services (per subscriber) - call barring: BAOC, BOIC, BOIC-ExHC, BAIC, BIC-Roam - call forwarding: CFU, CFB, CFNRC, CFNRY - other: CLIR, CW, HOLD, MultiPTY - password protection for service change Operator barring (per subscriber) - ROAM, BAOC, BOIC, BOIC-ExHC, BAIC, BIC-Roam CAMEL subscription (per profile) - O-CSI, T-CSI, VT-CSI, D-CSI, M-CSI, SS-CSI - MO-SMS-CSI, MT-SMS-CSI USSD subscription (per profile) - arbitrary number of prefixes to independent gateways
PS services	Operator barring (per subscriber) - ALL-PS, ROAM, HPLMN-AP, VPLMN-AP PDP Contexts (per profile) - name, type, charging characteristics - QoS (basic + extensions) - VPAA, SIPTO, LIPA - APN OI Replacement, AMBR CAMEL subscription (per profile) - GPRS-CSI, MG-CSI APN OI Replacement (per profile)
EPS services	PDN Connections (per profile) - name, type, charging characteristics - QoS (LTE QCI, priorities) - VPAA, SIPTO, LIPA - APN OI Replacement, AMBR - PGW address and name APN OI Replacement, AMBR, SRVCC, vSRVCC (per profile)

IMS services	IMS private and public identities (per subscriber) SIP username, authentication, realm (per subscriber) Domain and CSCF configuration (per profile) Initial Filter Criteria (per profile) - configurable list of SPT groups - SPT types: RequestURI, Method, SIPHeader, SessionCase, SessionDescription CAMEL subscription (per profile) - O-CSI, VT-CSI, D-CSI
High availability	Can be configured in a cluster of equal nodes Subscriber data is replicated across all nodes Requests can be distributed or balanced between nodes Detection of communication failures Automatic synchronization of new nodes Automatic synchronization after failure

About us

Legba, Inc. provides innovative infrastructure for mobile operators.
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