

MiniCore

MiniCore is a Software-defined compact core network for LTE/IMS and GSM/GPRS.

It is intended for MNOs and MVNOs laboratories to test new Core Network configurations or features before production usage.

Using commodity hardware it can implement in software all the functions and protocols for LTE/IMS and GSM/GPRS core network.

On the Radio interfaces, MiniCore can be used with our range of LTE and GSM RAN equipments (SatSite, LabKit) but is also compatible with any standard eNodeB.



Components

The MiniCore is a small factor PC computer that has preinstalled the following software components:

- YateUCN (MSC/VLR, GMSC, gsmSCF, MME/SGW/SGSN, PGW/GGSN, IMS CSCF)
- YateHLR/HSS (AuC, HLR, HSS, Subscriber management)
- YateSMSC (SMS store-and-forward, routing, home routed SMS)
- YateSTP (routing of SS7 messages by Point Code or Global Title)
- YateDRA (routing of Diameter messages by host, realm, application)
- YateMMI (Web management interface)

On demand additional components can be installed on the same hardware.

Features

- Setup/edit mobile network and component preferences via MMI management interface
- Minimal monitoring of each network component, additional YateBTS monitoring possible
- Wireshark capture of communication between components including decrypted IMS traffic
- JSON API integration with any SIM management and CRM systems
- JSON and REST API for sending SMS
- Can use both SIGTRAN/SS7 and Diameter for signaling
- Supports both IPv4 and IPv6
- Works both stand alone and with external components

Communication protocols

MAP/SS7/SIGTRAN	<ul style="list-style-type: none"> - M2PA or M3UA-ASP over SIGTRAN, SCTP (CRC32) - ITU TCAP, ETSI MAP v3 - ITU or ANSI SCCP and SS7 MTP - E.164, E.212 (ANSI), E.214 (ITU), TT or PC SCCP addressing - Can connect to multiple STP/GW - CAMEL phase 2
Diameter	<ul style="list-style-type: none"> - 3GPP Applications S6a/S6d, Cx/Dx - SCTP or TCP transport - Can establish or listen for connections - Can connect to multiple Routing Agents
HTTP	<ul style="list-style-type: none"> - JSON API server for configuration and subscriber management - JSON API for monitoring and information retrieval - REST API client for visited network change notification - JSON and REST API for sending SMS
SNMP	<ul style="list-style-type: none"> - SNMP v2 or v3 for information retrieval - Traps sending for alarms
Telnet	<ul style="list-style-type: none"> - Management CLI for each component - Optional SSL and password protection
Voice interconnect	<ul style="list-style-type: none"> - SIP and RTP - G711, GSM and AMR codecs
SIP	<ul style="list-style-type: none"> - Supported standards (RFC3261) - Registrar function - B2BUA for calls - RTP (RFC3550) with sideband DTMF (RFC2833) - SMS and USSD over IP
SMPP	<ul style="list-style-type: none"> - Standard version 3.3 - Supports bidirectional communication
RADIUS	<ul style="list-style-type: none"> - Authorization of voice calls, data sessions and short messages - Postpaid accounting for voice, data and SMS - Prepaid support by re-authorization - Support for 3GPP, Cisco VoIP VSA and Cisco ISG VSA dictionaries
SMS	<ul style="list-style-type: none"> - Format: SMS PDU (MO and MT) - MAP/SS7 transport (T-PDU format) - SIP MESSAGE transport (SMS over IP, R-PDU format)
CDR	<ul style="list-style-type: none"> - Flexible file format - Automatic file rotation - Optional file transfer: FTP, SFTP - JSON HTTP push API - RADIUS with 3GPP and Cisco dictionaries

Communication Interfaces

- C Interface (MAP, HLR ↔ GMSC)
- D Interface (MAP, HLR ↔ VLR)
- E Interface (MAP, MSC ↔ MSC)
- F Interface (MAP, MSC ↔ EIR)
- J Interface (MAP, HSS ↔ gsmSCF for USSD)
- Gr Interface (MAP, SGSN ↔ HSS)
- Gc Interface (GTP or MAP, GGSN ↔ HSS, optional)
- S6a/S6d (Diameter, MME/SGSN ↔ HSS)
- S13 (Diameter, MME/SGSN → EIR)
- SIP, RTP (YateBTS ↔ VLR)
- S1 Interface (S1AP & GTP-U, YateENB ↔ EPC)
- Gn/Gp Interface (GTPv1, SGSN and GGSN)
- S5/S8 Interface (GTPv2, SGW and PGW)
- Gi/SGi Interface (IP, connects to Public Data Network)

Hardware Interfaces

- Dual Gigabyte ethernet
- DVI and HDMI video
- USB for mouse and keyboard
- 12V Power supply, 100-240V AC, 50-60Hz (included)

About us

Legba, Inc. provides innovative infrastructure for mobile operators.

SS7ware Inc. provides 2.5G/4G mobile networks. The company is a subsidiary of Null Team, the creators of Yate.

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