CIRPACK IMS

Competitive advantages

- complete and modular solution from one unique editor which unifies SBC, IMS core and IMS application servers
- available as software running on COTS servers, in virtualized environment or in the Cirpack Cloud.
- scalable from 500 to millions of subscribers
- fully compliant with telecom regulatory services : emergency calls, regulated interconnection, number portability.

Use cases

Cirpack IMS can be used as a core network solution in the following use cases:

Fixed network NGN modernization
Built historically on NGN architecture (i.e. based on Call Servers and Media Gateways), the fixed telephony services can be upgraded with the Cirpack IMS to benefit from advanced multimedia services and open interfaces allowing communication services enrichment.

VoLTE/ViLTE/VoWifi
Cirpack IMS supports VoLTE (Voice over LTE), ViLTE (Video over LTE) and VoWifi (Voice over Wifi) defined respectively in GSMA IR.92, IR.94 and IR.51. It provides eSR-VCC (enhanced Single Radio Voice Call Continuity) for 4G/3G/Wifi handovers.

MVNO
The Cirpack IMS solution provides the telephony service infrastructure for MVNO/MVNE, complying with S8HR or LBO in case of VoLTE, and supports natively VoWifi.

Private LTE/4G Mission Critical
Thanks to its density and reliability, Cirpack IMS is suited for private LTE deployments implementing IR.92 telephony and the underlying IMS core for Mission Critical Push to Talk.

The Cirpack IMS is a highly scalable core network solution that enables standard compliant deployments of voice and multimedia services for fixed and mobile networks.
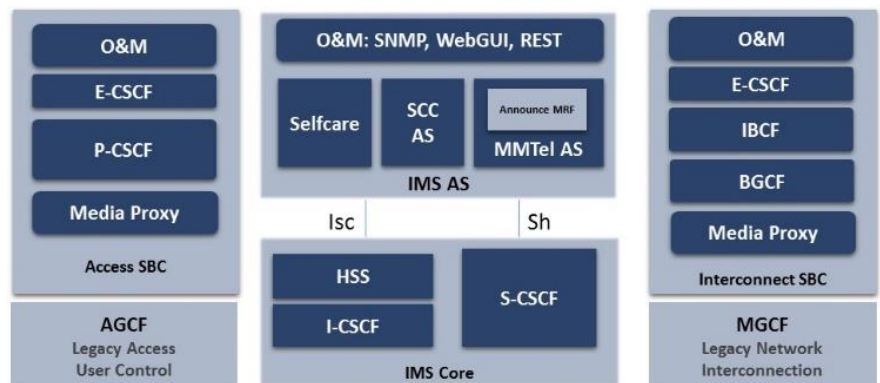
Based on a flexible implementation of industry standards, the Cirpack IMS applies to fixed, mobile networks, MVNO and 4G/5G private networks.

Thanks to Cirpack IMS infrastructure, end users benefit from carrier grade and modern communications such as HD voice, video calls and messaging, while network operators benefit from interoperability and ease of use.

The Cirpack IMS is a complete solution, based on:
- the Cirpack SBC, composed of P-CSCF, ATCF, ATGW, E-CSCF, BGCF and IBCF functions, as defined by IMS standardization
- the Cirpack IMS core, composed of I-CSCF, HSS and S-CSCF,
- the Cirpack Application Servers for telephony and voice call continuity
- Provisioning and administration web server, and an end user selfcare server.

This homogeneous solution provides the whole SIP chain, starting from end user authentication, authorization and registration, continuing with profile and service management, call control, modern multimedia telephony services, and finishing with call routing and interconnection.

Cirpack IMS architecture

Cirpack IMS is compliant with IMS standards such as 3GPP 24.229, hence operators can quickly enrich their offers with new end user services by simply adding new Application Servers.

With Cirpack IMS, operators benefit from a carrier grade and easy to use infrastructure, that can be deployed with geographical redundancy.

Fully software based, the Cirpack IMS solution is deployed as a virtualized application and can scale easily according to operators growth: the same solution can be deployed for 500 end user in case of private LTE deployment, but can also reach several millions of subscribers in public networks.

Key features

Access, interconnection and Security features

- SIP, SIP-I, SIP-T support
- IMS registration control
- Topology hiding with dynamic pinholing
- SIP DDoS protection : common traffic limitation, and individual user traffic limitation
- Deep SIP packet inspection and SIP policy enforcement
- IP white list per user
- Phone number/SIP address normalization/manipulation
- SIP header manipulation
- Encryption : TLS and sRTP
- Emergency calls with fixed or mobile localization (IETF PIDF-LO support from RFC 5139).
- Priority subscriber regulation
- Number portability routing
- QoS management/interconnection to PCRF, Rx interface
- Support of non-SIP terminals : MGCP AGCF and 2G/3G MVNO

Core network features

- SIP call handling
  - ✓ SIP forking
  - ✓ Routing on Tel-URI and SIP-URI, enum interface
  - ✓ User and User Service profile management
- IMS architecture
  - ✓ Service Orchestration based on Initial Filter Criteria
  - ✓ 3rd party registration for advanced AS scenario
  - ✓ ATCF/ATGW and SCCAS for 4G/3G/VoWifi handover
  - ✓ Support for Rich Communications environment
- Multimedia telephony services (MMTel)
  - ✓ Call forwardings
  - ✓ Restriction, Call barrings
  - ✓ embedded MRF for announces and conference calls
  - ✓ Hunting group
  - ✓ Malicious call identification
  - ✓ Subscriber suspending
- PBX trunking, including SIP connect2.0 support

System Operation and management

- Offline charging (CDR and Rf) and online charging (Ro)
- Web based GUI for solution configuration and monitoring
- Selfcare Web allowing end-users to configure their own services
- REST API for provisioning and user registration control
- Real time fault and performance management, real time trace tool and KPI generation
- SNMP traps

About Cirpack

Cirpack is a leading software company that provides scalable and multi-service IP Core Network solutions for the new generation of service providers.

The Cirpack product lines are based on highly innovative technological solutions:

- • Softswitches and gateways for NGN deployments,
- • SBC for network or service operators SIP security, and
- • IMS for fixed and mobile network multimedia communications.

Renowned for robustness, scalability and reliability of its solutions, Cirpack is the ideal partner, offering agility and responsiveness to support its customers in their growth strategies.

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