Customization of Magma, an Open-Source Mobile Core Platform

Customer Overview

The customer is a U.S. based company delivering end-to-end private 5G solutions. Built on proprietary mesh architecture, the solutions help meet the emerging communications needs of enterprise and Industry 4.0 customers, and enable easy to deploy, fully secure and scalable connectivity.

The Context

The customer was looking for certain capabilities and features in their core network platform that were not available in open source implementations. For instance, they wanted to package all components into ISO for rapid deployment. They also wanted to enable UE authentication based on the Subscriber Group feature and provide support for new TR-069 parameters supported by the latest versions of eNodeBs.

Type of Service Provided

Product Engineering, QA

Technologies Used

3GPP Specifications C, C++, Python, TR-069, gRPC

The Solution

The GS Lab | GAVS team customized various components of Magma's Orchestrator and AGW to implement the following new features as required by the customer:

- Subscriber Group based authentication of UE

- Support for TR-069 for QRTB firmware used by latest eNodeBs

- Addition of new TR-069 parameters supported by eNodeBs

- Creation of new integration tests for existing and new features, performance, scalability

- Scripts for creation of Magma AGW ISO which can be used to rapidly deploy new AGW instances

Challenges

- Immediate need to develop the following features to enhance the 5G solution:

  - Subscriber Group based authentication

  - Support for TR-069

  - New integration tests

  - Creation of Magma AGW ISO

  - Rapid deployment

Solution Impact

- Competitive edge over other providers through Subscriber Group based authentication

- Faster release cycles because of extended integration tests

- Gained end customer confidence due to hassle free deployments

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Magma Architecture Diagram