

OMEC

Project Overview

April 2019



Sprint

Brighter Future For All

Open Mobile Evolved Core (OMEC)

A project is intended to become an open source production grade Evolved Packet Core (EPC).

OMEC is built using an NFV (Network Function Virtualization) architecture

OMEC includes:

- Complete connectivity, billing and charging capabilities
- 3GPP Release 13 compatibility (more on this in a bit)
- Support for large numbers of subscribers with a high performance DPDK based data plane
- Optimization for lightweight cost effective deployments and IoT applications
- Integrated CI/CD test and verification capabilities

<https://github.com/omec-project>

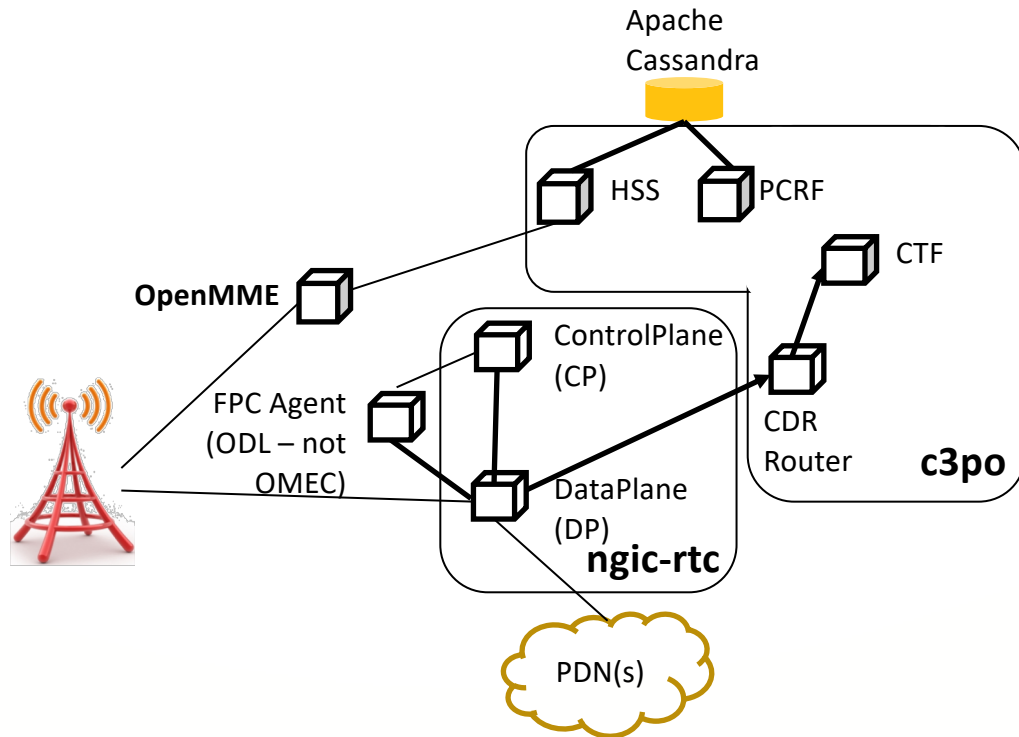
“Visible” Projects

Single Frame (1 instance of each component)

40K Users

1K Control Plane TPS

42-80 CPU Cores



Yes, there is no connection from the PCRF to anything yet

Infrastructure / Support Projects

Infrastructure projects

- oss-util – CLI support
 - Uses RESTful interface
 - Provides local CLI callback to RESTful API
 - One source for configuration / command changes to watch
- Freediameter – fork of freediameter
 - Fixes
 - Performance improvements
 - **Release 14** Diameter interfaces

Test, CI/CD and deployment resources

- omec-project-ci
- deployment (terraform based tools)
- ci-test
- ll_trafficgen – DPDK based S1U traffic simulator

Basic Functions

Default Bearers

Offline Billing

Child Protections (gating by domain or 5 tuple)

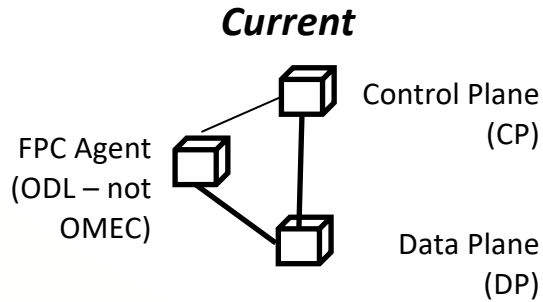
Basic MME support (initial attach, detach, etc.)

UPF DNS lookup per TS 29.244

Planned

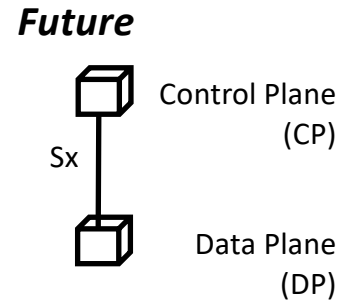
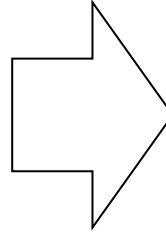
- User Level Packet Copying (based on open Lawful Intercept for CUPS)
- SAEGW modes for roaming
- OAM (alarms, measurements, etc)
- Common CLI
- Dedicated Bearers
- Handover Scenarios
- Restoration

ngic-rtc Communication Modes



agent based or direct

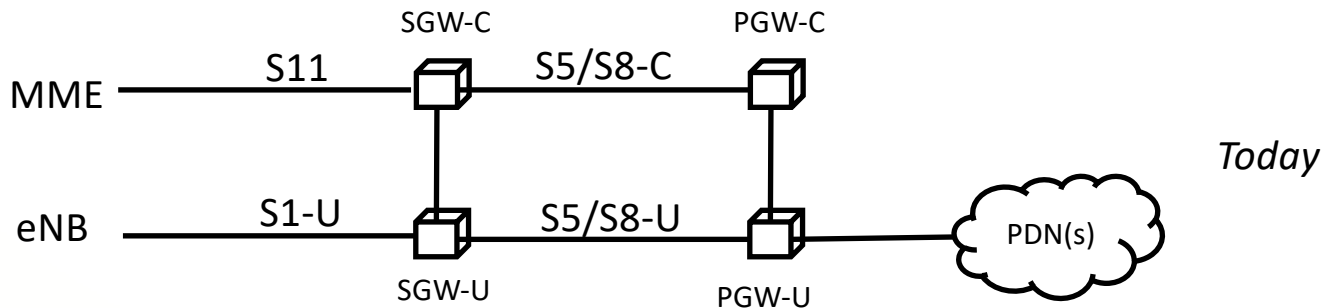
Direct mode uses a protocol over ZMQ



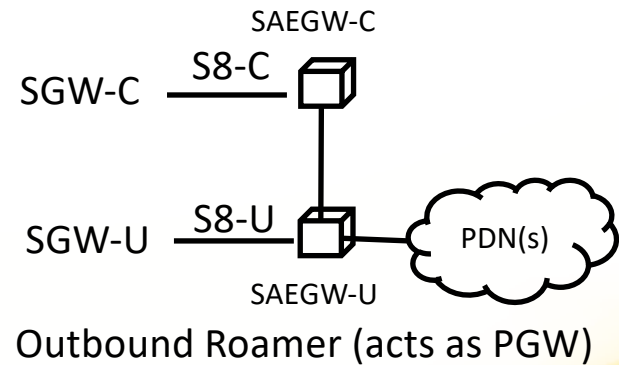
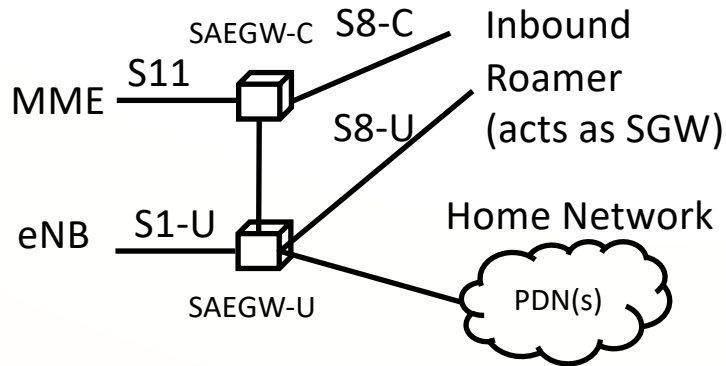
Direct mode via Sx (aka CUPS or N4)

FPC Agent is still an option

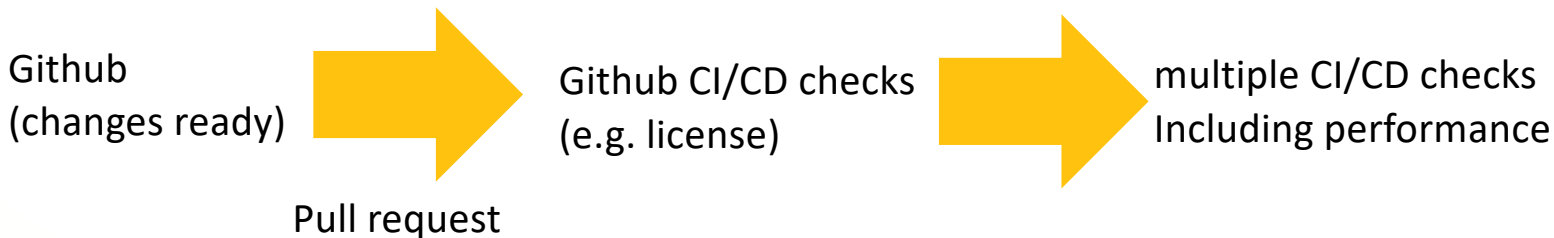
ngic-rtc deployment Roles



Under Development



Continuous Integration / Continuous Delivery (CI/CD) process



Performance is a part of our CI/CD process

- il-trafficgen
- Other tools, e.g. ng4t

If you are concerned about user plane performance you can download and run il-trafficgen prior to submitting!

What Version are you at?

Current

Diameter – R14

GTP – R12

S1AP – tested against production eNodeBs – based on R10 with some R11/R12 features

S1-U – R12

Future

Sx - R15

GTP – R15

Gx – R14 with necessary AVPs for R15 (as required)

Deployment?

VM based

Container options as well

Terraform scripts are out there!

Where can you contribute?

Documentation

Bugs submissions

Test, test, test!

Functions

MME will always need work

PCRF – current one is basic