vIMS Characterization using NSB

The telecom networks go through a transition, NFV, to deliver maximum potential benefits for a network. One of the key VNF is IMS to bring voice/video call services to end users.

One of the most concerning is the end-to-end performance of IMS network. The live performance becomes even more crucial that will require to provide KPIs performance.

NSB provides full automation to create a test session using SIPp traffic generator with configurable parameters such as .. and benchmarks vIMS Clearwater as a reference vIMS VNF.

Representation of vIMS topology components in NSB

NSB Test cases for vIMS

Following test cases are examples of "black box" testing of emulated of real VNF.

- vIMS

Test run results contain detailed IMS metrics reported by traffic generator.
Documentation on vIMS test cases can be found below in references.

How to modify the sample vIMS test case to craft a new test case flavor

Users can create their own test cases based on existing sample tests.

For example, user could do some changes by edit the attributes in "options" fields in test case .yaml file:

- Change the number of users will registers into system by edit attributes "start_user" and "end_user"
- Change the mode of sipp call is "nortp" or "rtp" by edit the attribute "run_mode"
- Customize editable attributes of calling (reg_cps, reg_max, call_cps, hold_time, call_step, ...) 
- Craft new session profile by duplication of sample session profile and removing one of test cases and substituting its IMS blocks by real IMS VNF

vIMS KPI and Metrics visualization in Grafana dashboards

Network KPIs are collected from SIPp traffic generator after finishing the test, then displayed in Grafana dashboards.

One dashboard represents a specific test type, displaying a pre-defined set of attributes and statistics.

Besides, some important test scenario settings are displayed. User is able to visualize test results of current or previous test runs by specifying the "run_id" value.
There are two example results for two test cases: baremetal & heat

**Baremetal**

- Registration KPI(s)

- Re-registration KPI(s)

- De-registration KPI(s)
- Immediate message procedures rate KPI(s)

- Calling KPI(s)

Heat

- Registration KPI(s)
- Re-registration KPI(s)

- De-registration KPI(s)

- Immediate message procedures rate KPI(s)
- Calling KPI(s)

References and Documentation links

1. Documentation on vIMS test cases can be found in the [OPNFV yardstick test documentation page](#).
2. Grafana Dashboard for vIMS test can be found in OPNFV yardstick dashboards page for [baremetal](#) and [heat](#).