vCMTS Characterization using NSB

The vCMTS architecture consists of a vCMTS dataplane node and a traffic generation node all running in a single kubernetes cluster. For both of these nodes a number of 25G/10G Intel Ethernet Network Adapter must be installed. On the vCMTS dataplane node, multiple containers host DPDK-based DOCSIS MAC upstream and downstream dataplane processing for individual cable service-groups, allowing them to be instantiated and scaled independently. On the CMTS traffic-generation node Docker containers host DPDK Pktgen-based traffic generation instances which simulate DOCSIS traffic into corresponding vCMTS dataplane instances.

Assuming Intel vCMTS Reference Dataplane Installed and running, NSB provides a full automation to create a test session using the containers provided after modification for yardstick ssh access.

Representation of vCMTS topology components in NSB

NSB Test cases for vCMTS

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

- vCMTS

Test run results contain detailed vCMTS metrics reported by vCMTS-d application.

vCMTS KPI and Metrics visualization in Grafana dashboards

KPIs are copied from collectd instance running on the vCMTS dataplane node to the local yardstick InfluxDB instance periodically.

- Downstream Processing Per Service Group
- Downstream Throughput

- Upstream Processing Per Service Group

- Upstream Throughput

- Platform Metrics
References and Documentation links

- vCMTS test case configuration can be found in NSB Operations document.
- Documentation on vCMTS test cases can be found in the OPNFV yardstick test documentation page.
- Intel vCMTS Reference Dataplane v18.10.1 Install-Guide