ALL-IN-ONE PLATFORM for:

1. **Badging** - Vendor/Certification – LFN {OVP / OVP2.0}
2. **On-boarding** – Operator/Design-Time - ONAP {SDC}
3. **Service Testing** – Operator/Run-Time – ONAP {SO/VFC}

VNF TEST PLATFORM(VTP)

[Kanagaraj.Manickam@Huawei.com](mailto:Kanagaraj.Manickam@Huawei.com)

CNTT/OVP Contributor
ONAP VNFSDK/VTP PTL
ONAP CLI PTL
OPNFV Dovetail PTL

LFN 2020 April Virtual Conference

23rd April 2020
VNF/CNF from factory to production – Enabled by OVP

https://wiki.onap.org/display/DW/OVP+Introduction

Manufactured

Verified

Badged

Utilized thru step 2 and 4
Vendor’s & Operator’s Needs of the moment

**Certification (Badging) Time**

- **Vendor** wants to get certification for VNFs (TOSCA & HEAT), CNF (helm) by compliance, verification, validation and performance
- OVP needs a platform to **orchestrate test cases across different tools** and submit result to OVP portal for badging

**Design Time**

- **Operator** wants to check the Operator’s specific VSP compliance check when VNF is on-boarded in SDC
- **Operator** wants to **design the service testing**, similar to service design to enable service verification at run-time

**Run Time**

- On every service instantiation, **operators** want to verify the network service before activating for the consumer. (passive testing) thru SO/VFC
- Operators want to check the SLA of service on need basis (active testing)

THE LINUX FOUNDATION
A Test orchestration agile platform to manage and orchestrate different VNF testing scenario across different SUT environment like ONAP MANO, OpenStack Cloud, Vendor VNFM, SDN Controller, Kubernetes docker, etc under one umbrella across different Test providers and partner labs.

**Programming Interface**
- Provides REST API over HTTP(s)
- Role-based Access control

**User Interface**
- Web Portal
- Command Line Interface (CLI)

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**AGILE**
- Test case Modeling & Standardization
- Test case management
- Test orchestration
- System Under Test (SUT) management

**HE LINUX FOUNDATION**

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--Powered by Open Command Platform (OCOMP) -- Agile orchestrator, part of ONAP CLI project
**Scenario** is a logical entity to model any given situations for which test cases are made, e.g.: LFN OVP, vendor specific, functionality specific.

**Test suites** is a logical entity to group the tests into hierarchy with the notation x,y,z.

**Test case** models the given real test case with required Inputs and Outputs.

**Execution** models every execution of given test case with unique identifier.

**Parameter** is an instance of Test case inputs, given by user while executing the test case.

**Result** is an instance of Test case output, produced by VTP as part of execution.

While execution, user could use Profile and Artifacts.

**Profile** models the System configurations and Pre-defined test case parameters. Ex: GSMA profile, OpenStack environment details, etc.

**Artifact** models the given binaries of any nature like VNF, Scripts, configuration files, certificates, etc.

**Metadata** models tagging to support searching of test execution.

Test case results are searchable based on artifact, profile, scenario, test-case, metadata as VTP captures every test case execution with parameters and results.
OVP:
Can I design, identify & manage test case(s)?
Can I tag and filter test cases for given CNTT RC[1,2] requirements?
Can I store results and search?
Can I mark test case as MUST, SHOULD, OPTIONAL, etc?
I don’t want to worry about my test native result format, but Can I submit my results in OVP format?
Can I integrate and collaborate with different test tools from OPNFV, CNCF, ONAP, OpenStack?

ONAP:
Can I verify my VNF while on-boarding to check for my Operator specific reqs?
Can I make it to verify VNF fn. before activating for user?
Can I make it to check my network service current status?
Can I design, identify & manage test case(s)?
Can I tag and filter test cases for given CNTT RC requirements?
Can I store results and search?
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I don’t want to worry about my test native result format, but can I submit my results in OVP format?
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ONAP:
Can I verify my VNF while onboarding to check for my Operator specific reqs?
Can I make it to verify VNF fn. before activating for user?
Can I make it to check my network service current status?
All-in-1 Platform (VNF) -

VNF: Compute Flavor 4GB 2vCPU
  Nw Flavor NIC speed

Telco Environment

Certify VNF C&V

VTP Portal
((ONAP G release)

VTP Backend

OVP portal

Market place

Check if VNF is badged?

Pull list of OVP certified VNFs

VSP On-board

VSP Compliance check (ONS NA 2019)

ONAP design-time

ONAP Component

Badging: OVP VNF Compliance & Validation (ONS EU 2019)

Design-time: Operator specific VSP compliance check (ONS NA 2019)

Runtime: Network Service Test (ONAP G release)

Operator #1:
  Flavor-match-test-1
  security -check-test-1

Operator #2:
  Flavor-match-test-1
  security -check-test-1

Validation:
  Vnf-validation

Compliance:
  Csar-validate

VTP Test cases

Service Test cases

ONAP Runtime

SO

VNF

OpenStack

Flavor List:
  ✓ NIC speed
  ✓ m1.medium

ONAP

SDC
All-in-1 Platform (CNF)

- Telco Environment
- Kubernetes
  - Flavor: NIC speed, SRIOV

CNF: SRIOV-enabled, Nw Flavor NIC speed

VTP Portal (ONAP G release)

- VTP Backend
- VTP Test cases

Operator #1:
- Flavor-match-test-1
- security -check-test-1

Operator #2:
- Flavor-match-test-1
- security -check-test-1

Validation:
- Cnf-validation

Compliance:
- Csar-validate

Service Test cases

OVP portal

Upload CNF Test results

Upload CVF

Check if CNF is badged?

SDC

ONAP design-time

ONAP CNF TASK FORCE PRESENTATION

Badging: OVP CNF Compliance & Validation

Design-time: Operator specific VSP compliance check

Runtime: Network Service Test

Service Test

ONAP Component

SO

ONAP CNF TASK FORCE PRESENTATION

Kubernetes

- CNF
- ONAP Runtime
- Telco Environment

CNF Badge

vFW

vBS

ONAP CNF TASK FORCE PRESENTATION

Certify CNF C&V

Pull list of OVP certified CNFs

CNF

Badged

vFW

2019.12

vBS

NA
ONAP : Network Service Test (CNF)

VTP Portal

VTP Backend

VTP Test cases

Service Test case distribution

CSAR

Test Case Model

NS MODEL

SOC

ONAP

Service Model distribution

1.1

Service Creation

1.2

Service SLA Testing

CSAR

NS MODEL

VTP

OnAP YAML

VTP YAML

Custom resource YAML

Dynamic

1. Design

2. Create/Terminate

3. Verify

CNF

Network service

Telco Environment

VTP Portal
VNF Test Platform (VTP) – 3rd Party Test tool integration – ONAP G release

VTP provides profile feature to integrate any 3rd party tool and leverage the test cases from those tools without re-implementing them. And each profile is made 3 parts as given below:

1. **Auto Discover** – Discovers the available test cases in test tool and produces Test case YAML
2. **Auto Register** – Register those discovered YAML into VTP as test cases
3. **Executor** – Execute the given test cases by using the corresponding test tool

Note: Currently VTP has implemented these features for OVP, ONAP
Thank you
Adoption of TMF API in VTP

Test case management (TMF704)
Environment management (TMF705)
Test data management (TMF706)
Result management (TMF707)
Test execution (TMF708)
Scenario management (TMF709)
Artifact management (TMF710)
OVP – CNTT Overview