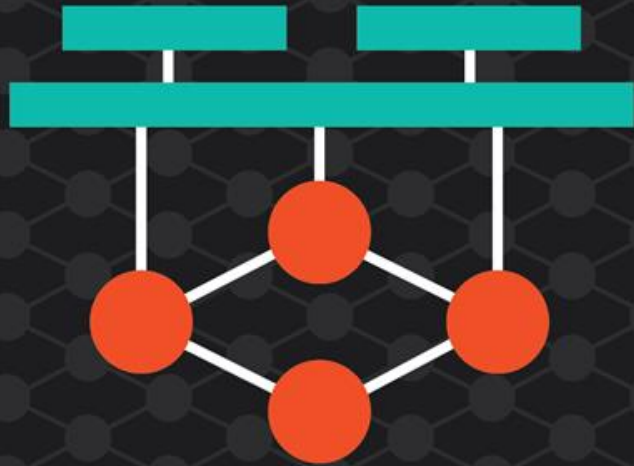


March 26-29, 2018
Los Angeles, CA



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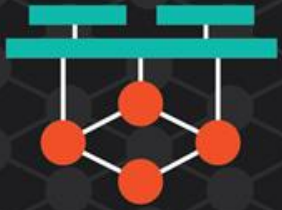
March 26-29, 2018
Los Angeles, CA

LFN Developer Forum

ONAP/OPNFV Cross-Community Collaboration PoC

VNF SDK / Dovetail Integration

Bruce Thompson – Amdocs
Moshe Hoadley – Amdocs
Eddie Arrage - Huawei



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LFN Validation & Verification Project Landscape



Doctor
Fault Analysis

Barometer
Telemetry

Dovetail
Compliance
Verification

Current Project Collaboration

VNF SDK
VNF Marketplace
VNF Onboarding / Lifecycle Validation

Yardstick
Performance
Framework

Storperf
Storage
Performance

Bottlenecks
Bottleneck
Identification

**NFVBench/
VSPERF**
Data-Plane Traffic
Generation and
Performance Validation

Functest
Functional
Validation

RefStack
Interoperability

Tempest
Integration

VNF
CLOUDIFY OPEN BATON
Clearwater

k8s e2e
Conformance

Current Project Collaboration

Integration
Benchmarking
is Sub-Project

**Use-Case
System Test**

**Service
Assurance**





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LFN 'Verified' Web Portal

Governance & Workflow

[Overview](#)
[Governance Guidelines](#)
[Terms & Conditions](#)
[Process Workflow](#)
[Participation Form](#)

Training Resources

Release Information

- Provide Key Resources
- Support Learning
- Incentivize Participation

Test Result Overview

Test Filters:

All Passed Not Passed

Total: 215, Pass: 215, Rate: 100.00%
Mandatory Total: 215, Pass: 215, Rate: 100.00%

Display Result
Summaries

Inspect Logs

Service Name	URL
compute_legacy	http://192.168.0.2:8774/v2
neutron	http://192.168.0.2:9696
swift_s3	http://192.168.0.2:8080
aodh	http://192.168.0.2:8042
ceilometer	http://192.168.0.2:8777
cinder	http://192.168.0.2:8776/v1
cinderv3	http://192.168.0.2:8776/v3

Collect SUT Info



- Centralized Community Repository
- Collaboration & Result Sharing
- Self-Testing / Community Review

Acceptance & Marketing

Category label

Infrastructure

OPNFV
VERIFIED

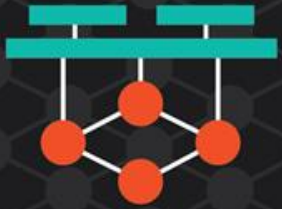
2018.01

Date versioning



Common Verification Framework

Test Execution, Logging, Centralized Results, Pass/Fail Reporting



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OVP Highlights

- Based on operator requirements & capabilities – goal of inclusion in RFPs
- Supports both self-testing and third-party lab testing
- Compliance verification with automated test suite developed by the OPNFV community
 - Dovetail – test tool with test suites – mandatory/optional
 - OVP Portal – collaborate and submit results for community review
- Offerings/products that pass the OVP may be labeled as ‘OPNFV Verified’ – considering evolution to unified LFN program
- Initial version validates VIM & NFVI component offerings (+HW = SUT)
- VNF SDK validation content will make a unified ‘Verified’ program more compelling allowing VNF vendors to participate



Integration of VNFTest in Dovetail

<https://gerrit.opnfv.org/gerrit/#/c/54317/>



VNFTest



Logging / Reporting

VnftestCrawler, VnftestChecker

```
from report import Report, VnftestCrawler, VnftestChecker
from report import FunctestCrawler, YardstickCrawler, BottlenecksCrawler
```

Run / CLI

```
class VnftestRunner(DockerRunner):
    def __init__(self, testcase):
        self.type = 'vnftest'
        super(VnftestRunner, self).__init__(testcase)

class TestRunnerFactory(object):
    TEST_RUNNER_MAP = {
        "functest": FunctestRunner,
        "yardstick": YardstickRunner,
        "bottlenecks": BottlenecksRunner,
        "shell": ShellRunner,
        "vnftest": VnftestRunner
    }
}
```

Dovetail



```
cli
compliance
conf
container.py
parser.py
patch
report.py
run.py
test_runner.py
testcase
testcase.py
tests
userconfig
utils
```

Test Suite

Container

Test Case

YAML

```
onap.1.0.0:
  name: onap.1.0.0
  testcases_list:
    - dovetail.lifecycle.tc001
```

```
testsuite_supported:
  - compliance_set
  - proposed_tests
  - debug
  - ovp.1.0.0
  - onap.1.0.0
```

```
---
vnftest:
  image_name: onap/vnftest
  docker_tag: beijing.0
  opts: '-id --privileged=true'
  config:
    dir: '/home/onap/userconfig'
  pre_condition:
    - 'echo this is pre_condition'
  cmds:
```



```
---
dovetail.lifecycle.tc001:
  name: dovetail.lifecycle.tc001
  objective: vnf lifecycle tests
  validate:
    type: vnftest
  pre_condition:
    - 'echo pre-condition'
  testcase: onap_vnftest_tc001
```

```
testarea_supported:
  - osinterop
  - example
  - ha
  - ipv6
  - sdnvpn
  - vping
  - stress
  - tempest
  - optional
  - mandatory
  - full
  - smoke
  - vnf
  - lifecycle
```



VNF SDK / VNFTTest Code Structure

`git clone https://gerrit.onap.org/r/vnfsdk/dovetail-integration`



```
# vnftest comment: this is a modified copy of
# yardstick/docker/Dockerfile
FROM ubuntu:16.04

LABEL image=onap/vnftest

ARG BRANCH=master

# GIT repo directory
ENV REPOS_DIR="/home/onap/repos" \
    IMAGE_DIR="/home/onap/images/"

# Set work directory

# Vnftest repo
ENV VNFTTEST_REPO_DIR="${REPOS_DIR}/vnftest" \
    RELENG_REPO_DIR="${REPOS_DIR}/releeng" \
    STORPERF_REPO_DIR="${REPOS_DIR}/storperf"
```

Dockerfile

VNFTTest



```
LICENSE.txt
dist
docker
etc
ez_setup.py
install.sh
pom.xml
pre_config
requirements.txt
setup.py
test-requirements.txt
tests
tools
tox.ini
vnftest
vnftest.egg-info
```

```
common
lifecycle
onap_api_call.py
onboard
package_upload.py
```

Test Case YAML

Onboard

```
_init_.py
accept_resource_test.yaml
accept_service_test.yaml
add_resource_instance.yaml
add_service.yaml
approve_distribution.yaml
```

```
checkin_vlm.yaml
checkin_vsp.yaml
create_package_vsp.yaml
create_vlm.yaml
create_vsp.yaml
distribute.yaml
```

```
import_vsp.yaml
monitor_distribution.yaml
process_package.yaml
start_resource_test.yaml
start_service_test.yaml
submit_resource_for_testing.yaml
```

```
submit_service_for_testing.yaml
submit_vlm.yaml
submit_vsp.yaml
upload_package.yaml
```

Lifecycle

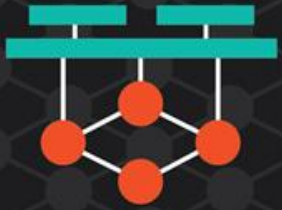
```
create_customer.yaml
create_region.yaml
```

```
create_service.yaml
create_service_instance.yaml
```

```
create_vf_module.yaml
create_vnf_instance.yaml
```

```
monitor_request.yaml
preload_sdnc.yaml
```

```
---
method: "POST"
url: "http://{mso_ip}/ecomp/mso/infra/serviceInstances/v5/{service_instance_id}/vnfs/"
headers: {
  "Content-Type": "application/json",
  "Accept": "application/json",
  "Authorization": "Basic SW5mcmFQb3J0YWxDbG1bnQ6cGFzc3dvcmQxJA==",
  "X-FromAppId": "MSO",
  "X-TransactionId": "demo"
}
body: {
  "requestDetails": {
    "requestInfo": {
      "instanceName": "{vnf_instance_name}",
      "source": "VID",
      "suppressRollback": "true",
      "requestorId": "vid1",
      "productFamilyId": "vFW"
    }
  },
  "modelInfo": {
    "modelType": "vnf",
    "modelInvariantId": "{resource model invariant id}"
  }
}
```



ONAP VNF Validation Framework

- ONAP VNF SDK / OPNFV Dovetail Integration

ONAP VNF Marketplace

App which shows VNFs available for instantiation in ONAP Network Service

OPNFV Dovetail

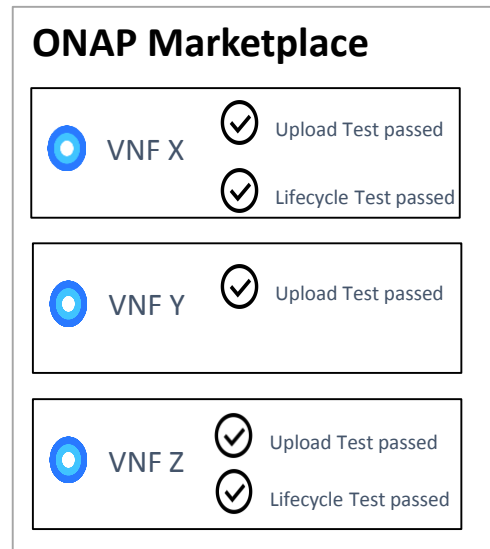
Integrated in ONAP VNF Marketplace
Available as a service and reports pass/fail results
Test suites divided into onboarding/lifecycle

VMF Vendor Cloud

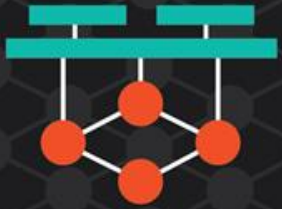
VMF onboarding validations automatically triggered upon uploads to the ONAP VMF Marketplace

ONAP Orchestration / Lifecycle Management

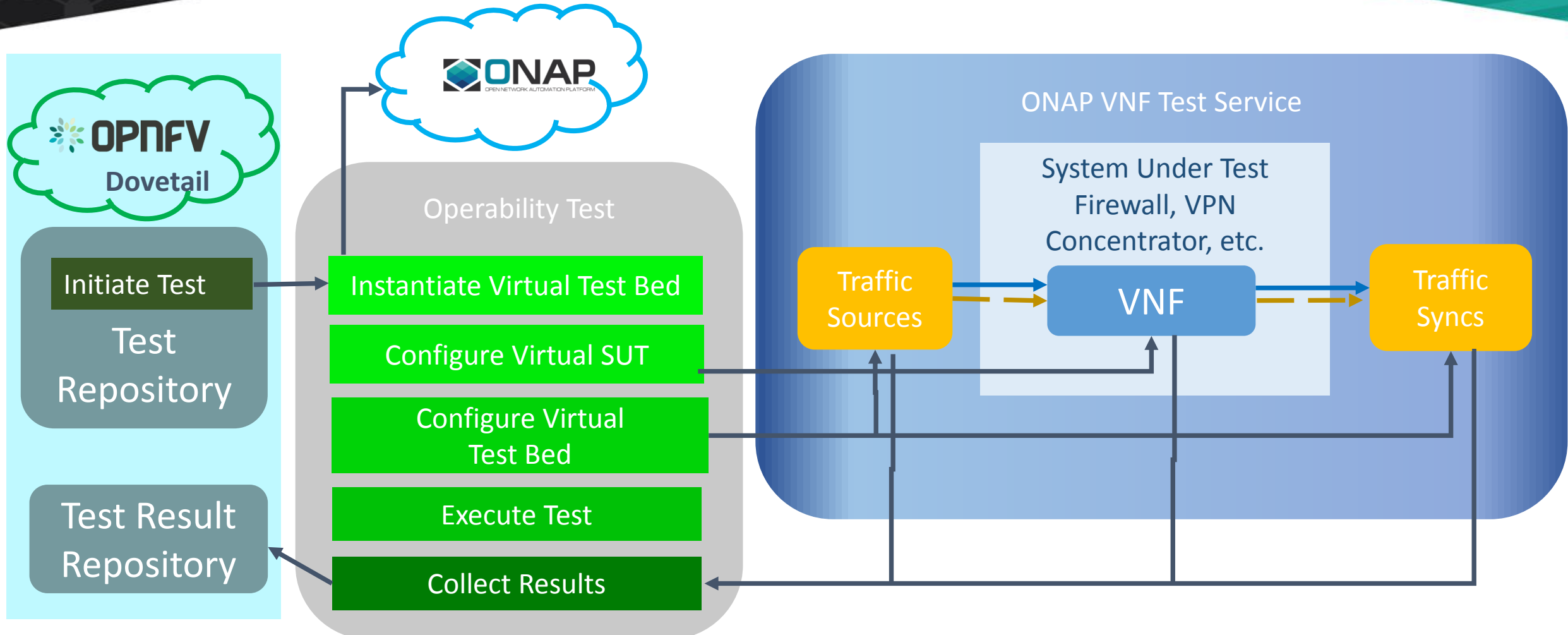
VMF Lifecycle validations executed on demand from VMF Marketplace UI

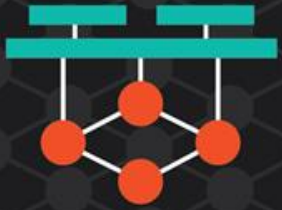


<upload package>



VNF Test Environment

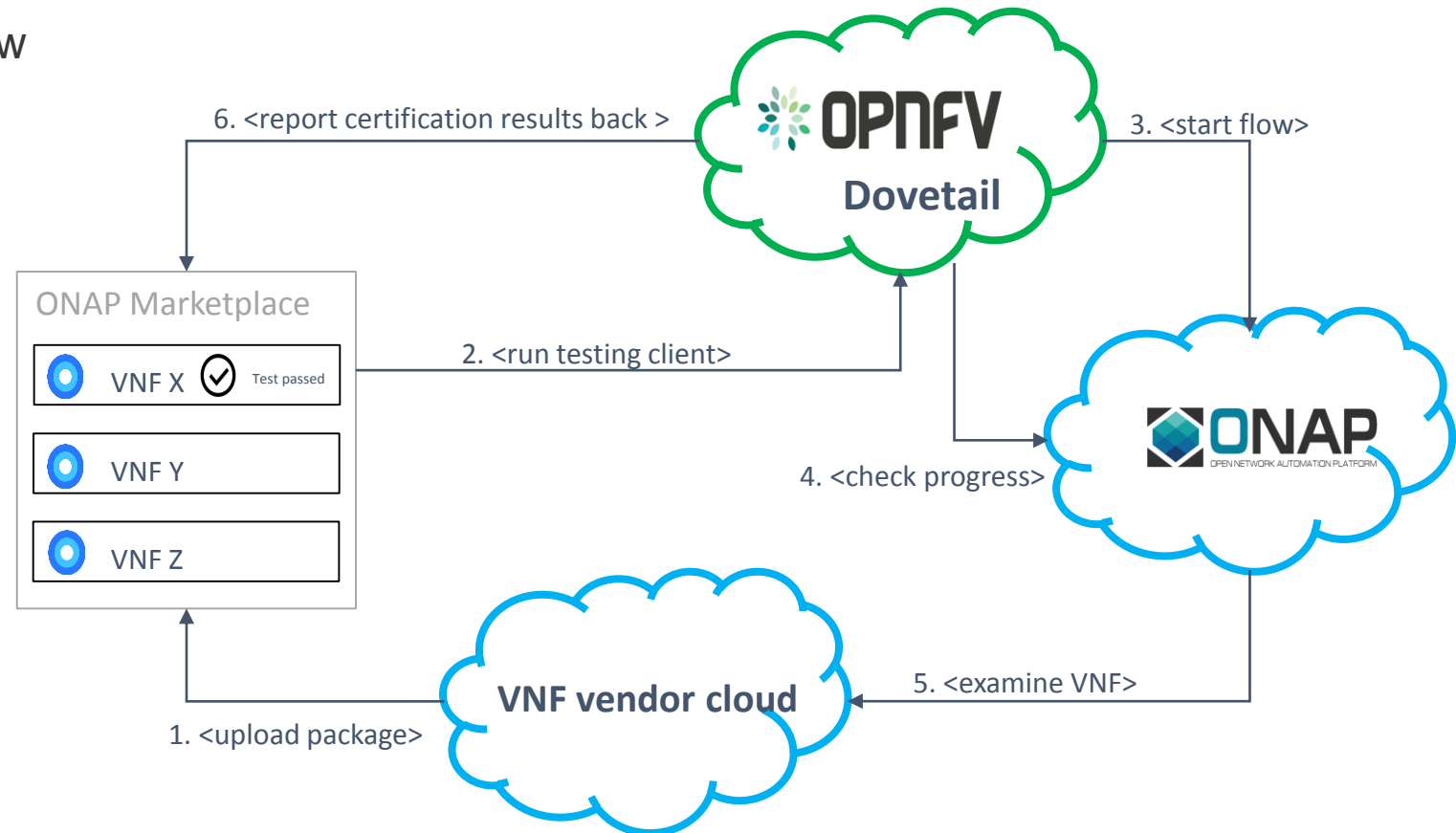


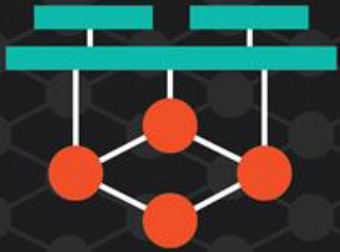


ONAP VNF Validation Framework

- ONAP VNF SDK / OPNFV Dovetail Workflow

1. VNF vendor initiates upload request to marketplace – API call references VNF package
2. VNF ingest trigger - download Dovetail client with parameter specifying test suite to execute
3. Dovetail creates Docker container for tests in the suite
4. Check progress – check status of ONAP services
5. Examine VNF – may access components of VNF package for validation
6. Report results – progressively report back results through Dovetail framework in local database to VNF Marketplace





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Demo

<https://wiki.onap.org/display/DW/VNFTTEST+integration+with+DOVETAIL>



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Appendix



Upload Results to OVP Portal – Share Results

- https://verified.opnfv.org/#/user_results

[Click here to begin](#)

The screenshot shows the 'My Results' page of the OVP Portal. At the top, there is a navigation bar with 'Home', 'Applications', 'My Results' (highlighted with a red box), 'Profile', and 'Sign Out'. Below the navigation bar, the page title is 'Private test results' with a subtitle 'Your most recently uploaded test results are listed here.' There is an 'Upload Results?' button with a question mark icon. Below this is a form with a text input field, a 'Browse...' button, and an 'UPLOAD RESULT' button. A table lists test results with columns: 'Upload Date', 'Test ID', 'Status', 'Log', 'Operation', and 'Share List'. The first row shows a test from 2017-10-16 with ID '7df77a9e-b221-11e7-a96e-0242ac11000f' and status 'private'. The 'Log' column has a 'logs' link. The 'Operation' column has a dropdown menu with options: 'submit to review', 'share with' (highlighted with a red box), and 'delete'. The 'Share List' column shows a list of users, including 'wenjing' (highlighted with a red box). A modal dialog box is open for sharing, titled 'Enter user name', with a text input field and a 'Commit' button. Annotations include a red box around the 'My Results' navigation item, a red box around the 'share with' option in the Operation dropdown, and a red box around the 'wenjing' user in the Share List. A red arrow points from the 'share with' option to the 'wenjing' user. A red box also highlights the 'Share results' text and the note 'Must know user login ID (Linux Foundation or OpenStack)'.

Home Applications **My Results** Profile Sign Out

Private test results

Your most recently uploaded test results are listed here.

Upload Results?

Browse... **UPLOAD RESULT**

Upload Date	Test ID	Status	Log	Operation	Share List
2017-10-16 04:32:48.902296	7df77a9e-b221-11e7-a96e-0242ac11000f	private	logs	OPERATION ▾ submit to review share with delete	SHARE LIST ▾ wenjing ✕

First Previous **1** Next Last

Share results
Must know user login ID
(Linux Foundation or OpenStack)

Enter user name

Commit

- Testers see options of **'share with'** and **'submit for review'** in Operation dropdown



Upload Results to OVP Portal – Review Results

Upload Date	Test ID	Owner	File Name	Label	Status	Log	SUT	Operation	Share List
2017-11-03 23:18:53	a00c47e8	jtaylor	logs_16_05_12.tar.gz	Xinocom Results	review	logs	info	OPERATION ▾	SHARE LIST ▾

Click Test ID to
view summary
results

Click logs to drill
into failed results

SUT Endpoint and
Hardware Info

Test Result Overview

Test Filters:

All Passed Not Passed

Test ID: a00c47e8-b22d-11e7-a96e-0242ac11000f

1. dovetail.osinterop.tc001 [205/205] osinterop test area
2. dovetail.vping.tc001 [1/1] vping test area
3. dovetail.vping.tc002 [1/1]
4. dovetail.ha.tc001 [1/1]
5. dovetail.ha.tc002 [1/1]
6. dovetail.ha.tc003 [1/1]
7. dovetail.ha.tc004 [1/1]
8. dovetail.ha.tc005 [1/1] ha test area
9. dovetail.ha.tc006 [1/1]
10. dovetail.ha.tc007 [1/1]
11. dovetail.ha.tc008 [1/1]

Index of /logs/987e90b8-adf4-11e7-94d9-0

../			
ipv6_logs/	10-Oct-2017 20:27	-	
tempest/	10-Oct-2017 20:27	-	
dovetail.log	10-Oct-2017 20:27	5984	
functest.log	10-Oct-2017 20:27	728K	
results.json	10-Oct-2017 20:27	16K	
tempest_custom.txt	10-Oct-2017 20:25	141	

Endpoints

Service Name	Service Type	URL
compute_legacy	compute_legacy	http://192.168.0.2:8774/v2/(tenant_id)s
neutron	network	http://192.168.0.2:9696
swift_s3	s3	http://192.168.0.2:8080
aodh	alarming	http://192.168.0.2:8042
ceilometer	metering	http://192.168.0.2:8777
cinder	volume	http://192.168.0.2:8776/v1/(tenant_id)s
cinderv3	volumev3	http://192.168.0.2:8776/v3/(tenant_id)s
heat	orchestration	http://192.168.0.2:8004/v1/(tenant_id)s
cinderv2	volumev2	http://192.168.0.2:8776/v2/(tenant_id)s
swift	object-store	http://192.168.0.2:8080/v1/AUTH_(tenant_id)s
nova	compute	http://192.168.0.2:8774/v2.1
keystone	identity	http://192.168.0.2:35357/v2.0
glare	artifact	http://192.168.0.2:9494
glance	image	http://192.168.0.2:9292
heat-cfn	cloudformation	http://192.168.0.2:8000/v1