ETSI NFV POCS AND PLUGTESTS
AS OPPORTUNITIES FOR COLLABORATION ... WHILE FOSTERING NFV INTEROPERABILITY

Presented by Silvia Almagia ETSI (CTI)

ETSI (NFV) meets OpenStack, Denver, September 2017
ETSI Centre for Testing and Interoperability

We support different groups at ETSI (NFV, MEC, 3GPP, OSM ...) to achieve and validate the interoperability, conformance and “implementability” of standards with:

- Test methodologies and specifications
- Plugtests™ (interop events)
- HIVE (Hub for Interoperability and Validation and ETSI)
- Proofs of Concept

And lately, also:

- Open Source project and community hosting (ETSI OSM)
- OpenAPIs hosting, development and validation
Launched in 2013 with the first set of NFV specs, main goals:
• Look for practical results and get feedback
• Foster ecosystem and cross-company collaboration

Main principles:
• Multi-vendor PoC Team: min 2 vendors & 1 operator
• Challenge by choice: PoC scope & goals set by the PoC Team
• Commitment to provide feedback to ETSI NFV

Process
• PoC Team fills in and submits PoC Proposal
• CTI & TST Chairs review and accept PoC Proposal
• PoC Team runs PoC & demo(s)
• PoC Team fills in and submits PoC Report

43 multi-vendor NFV PoCs to date, +120 organisations involved
• Check them out!

www.etsi.org/nfv-poc
NFV PLUGTESTS

- Provide a neutral and coordinated environment for collaborative testing and validation among different organizations
  - Continuous and ubiquitous environment
  - Periodic face to face events

- ETSI does not certify or endorse participating companies or products
- We provide the framework, the means, the methodology, the procedures, the test plan...
- Actual testing is run collaboratively by participants
- Free and open to any organisation bringing something to test or support the testing
HIVE

Hub for Interoperability and Validation at ETSI

- Allows to securely interconnect remote labs to ETSI
- Seamless access among connected labs and local infrastructure at ETSI
- Supports Plugtests on many different technologies (NFV, MCPTT, Small Cells...)
- Supports OSM Remote Labs network & CI/CD pipeline
1ST NFV PLUGTESTS

Madrid, January 2017
31 participating companies
29 remote labs
35 Functions Under Test (commercial and open source):
  • 15 VNFs,
  • 9 MANOs,
  • 11 NFVI&VIM

Several supporting open source communities:
  • ETSI OSM,
  • Open Baton,
  • OPNFV,
  • Open-O
**GOALS & SCOPE**

- **Interoperability** Test Sessions
  - Among different combinations of Functions Under Test (FUTs): VNFs, MANO, NFVI&VIM
  - At a functional level (conformance not enforced)

- Validate basic **NFV Rel 2 capabilities**:
  - NSD, VNF Package and SW Image Management
  - NS and VNF Life Cycle Management, VR Management

- **“Early”** Plugtests
  - ETSI NFV Data Models and APIs still under development
  - IOP through open APIs, plugins, ...
  - ...and remote integration
TEST PLAN DEVELOPMENT

- Open & continuous process during Plugtests preparation
- Implementation agnostic, functional level
- Resulting Test Plan was contributed to NFV-TST007...
TIMELINE OF THE 1\textsuperscript{ST} NFV PLUGTESTS

NOV’16 – JAN’17 : Remote integration and pre-testing
- Remote labs connection to HIVE
- FUT documentation, pre-testing procedures
- Test Plan development
- Weekly conf-calls to sync-up

23 JAN-3 FEB’17 : 1\textsuperscript{st} Plugtests Event
- At least 1 representative per FUT onsite
- FUTs local or remote (through HIVE)
- Test Session Scheduler, goals:
  - Maximise the number of test sessions and tests run
  - Ensure fair and balanced FUT combinations
  - Keep all participants busy all the time!
## TEST SESSION REPORTS

### ETSI Test Reporting Tool

<table>
<thead>
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<th>ID</th>
<th>Status</th>
<th>Date</th>
<th>Duration</th>
<th>Area</th>
<th>Test</th>
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<td>231</td>
</tr>
</tbody>
</table>

**Test Groups:**
- NFV
- Setup & Instantiation
- Scale
- Scale VNF
- Update
- Terminate & Teardown

**Test ID**
- TD_NFV_SETUP_ONBOARD_VNF_PKG_001: To on-board a VNF Package
- TD_NFV_SETUP_ONBOARD_NSD_001: To onboard a NSD
- TD_NFV_NS_LCM_INSTANTIATE_001: To verify that an NS can be successfully instantiated

**Result**
- OK
- NO
- NA

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1ST PLUGTESTS RESULTS

Onboarding & Instantiation

Scale (+/- VNF i)

Scale VNF (+/- VNFC i)

NS Update

Terminate & Teardown

160 Test Sessions

+1500 individual test results

Feedback to ETSI NFV
NFV Plugtests proved to be a great opportunity for collaboration...

- Hands-on collaboration to “make it work”
- Meet and test with many other players in the ecosystem working on different solutions
- Understand usage of own products by 3rd parties, fix a lot of bugs!!

... and a very powerful tool for standards validation!!

- Reality check: **align** expectations
- **Gather consolidated feedback**
- Help to **reduce gaps** between standards and implementations

Pointers:

- [1st NFV Plugtests Test Plan](#)
- [1st NFV Plugtests Report](#)
- [1st NFV Plugtests video](#) (2-3 mins)
LOOKING FORWARD

**2nd NFV Plugtests** event, 15-19 January 2018
- @ETSI, Sophia Antipolis, FRANCE
  - Registration is **OPEN** (until mid-October)
  - OCT-DEC 2017: Remote integration & pre-testing
  - Building on the learnings of 1st Plugtests
    - Considering new aspects such as fault and performance management, multi-site, network path, enhanced platform awareness, NFV APIs...
  - ETSI OSM, OpenBaton, OPNFV, ... and **OpenStack! 😊** as supporting open source communities
  - Co-located with 1st ETSI OSM Hackfest

**3rd NFV Plugtests** event, mid 2018
- Co-located with OPNFV Plugfest
OPPORTUNITIES FOR COLLABORATION

Submit a POC Proposal

Participate to Plugtests

Help to shape the next test plan:
  • Working document (google docs)
  • Input, comments, feedback, ... most welcome!

Other ideas? Let us know!
CONTACT DETAILS

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Thank you!