Introducing Open Platform for NFV

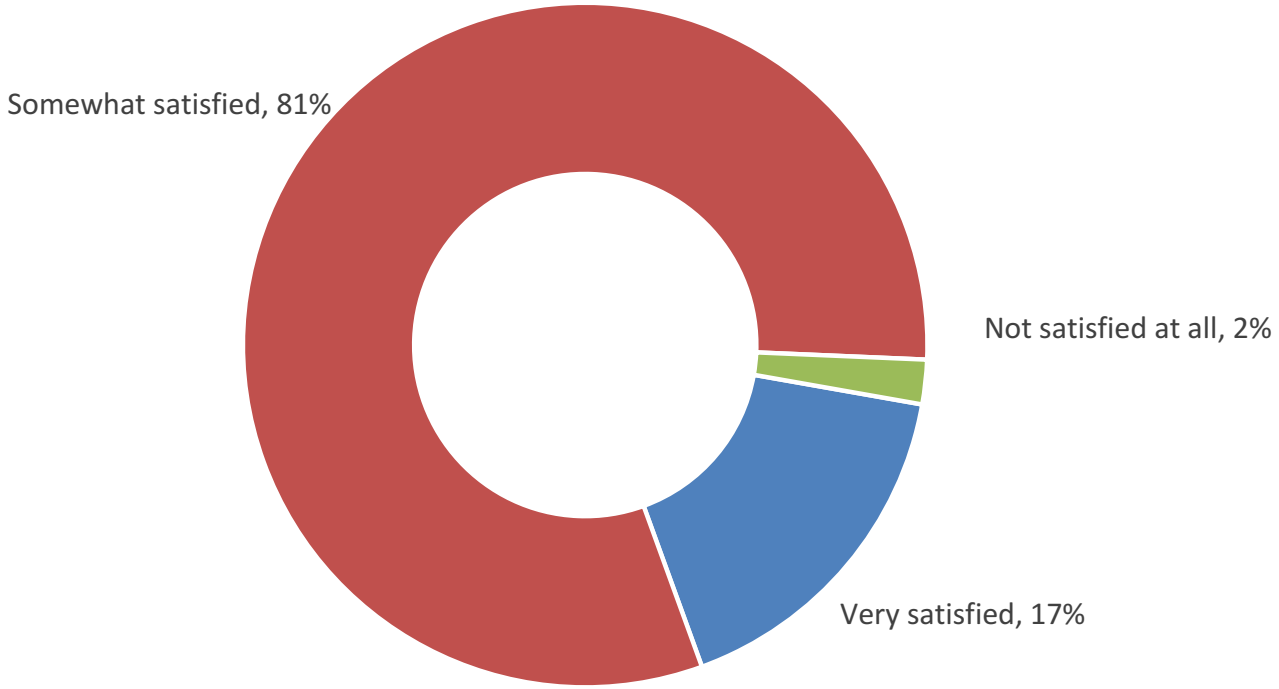
Please direct any questions
to info@opnfv.org

LINUX FOUNDATION
COLLABORATIVE PROJECTS

We are an industry in transformation

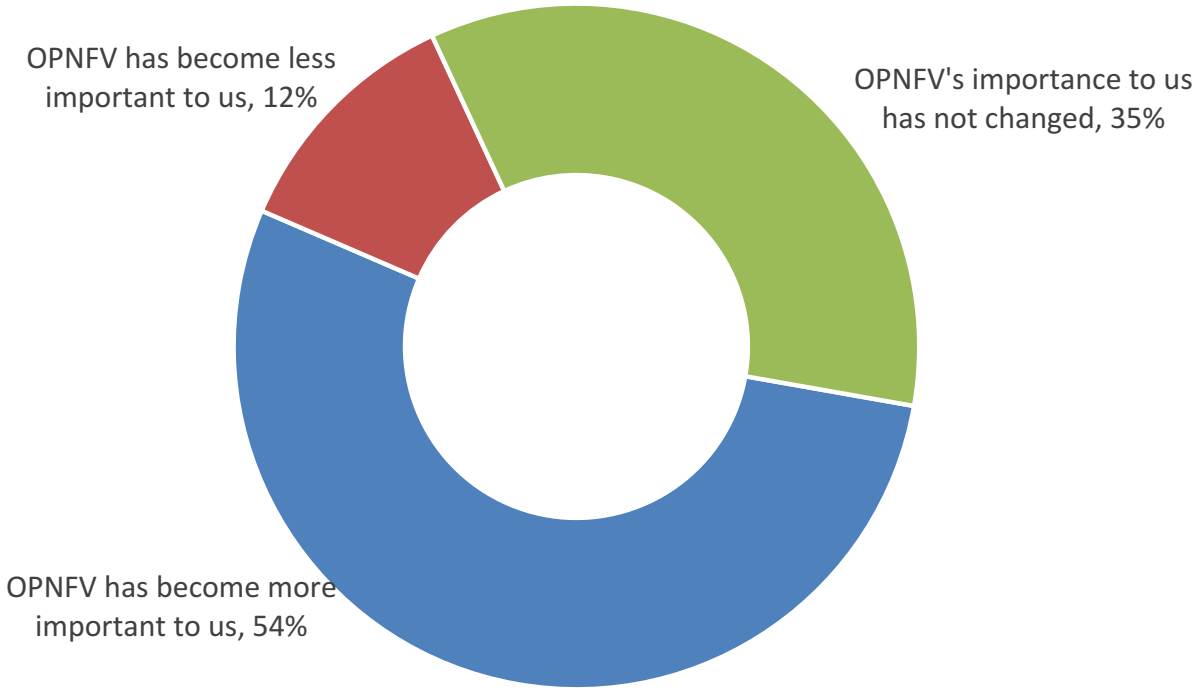
OPNFV

Satisfaction that OPNFV is delivering on its promises



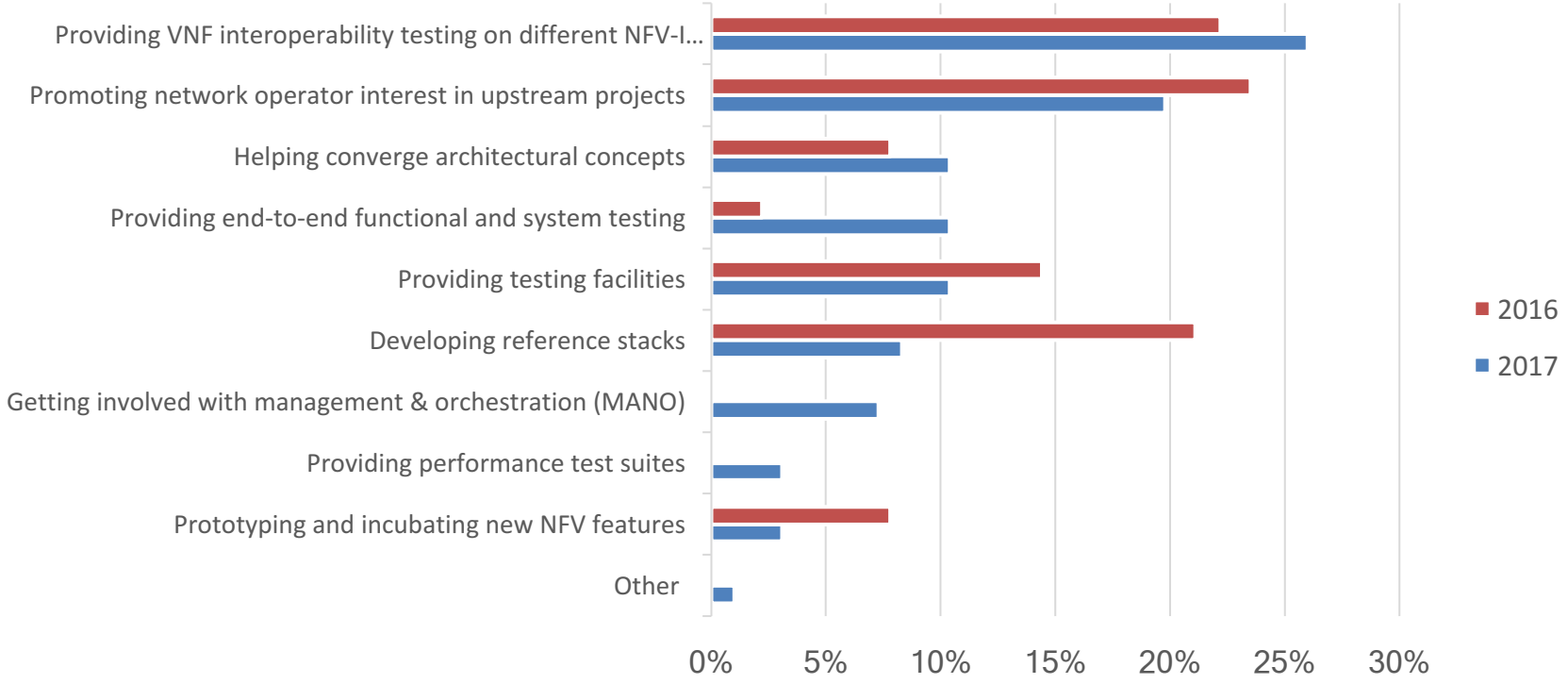
Source: Heavy Reading Service Provider Survey, June 2017 n=97

Change in OPNFV's importance to companies



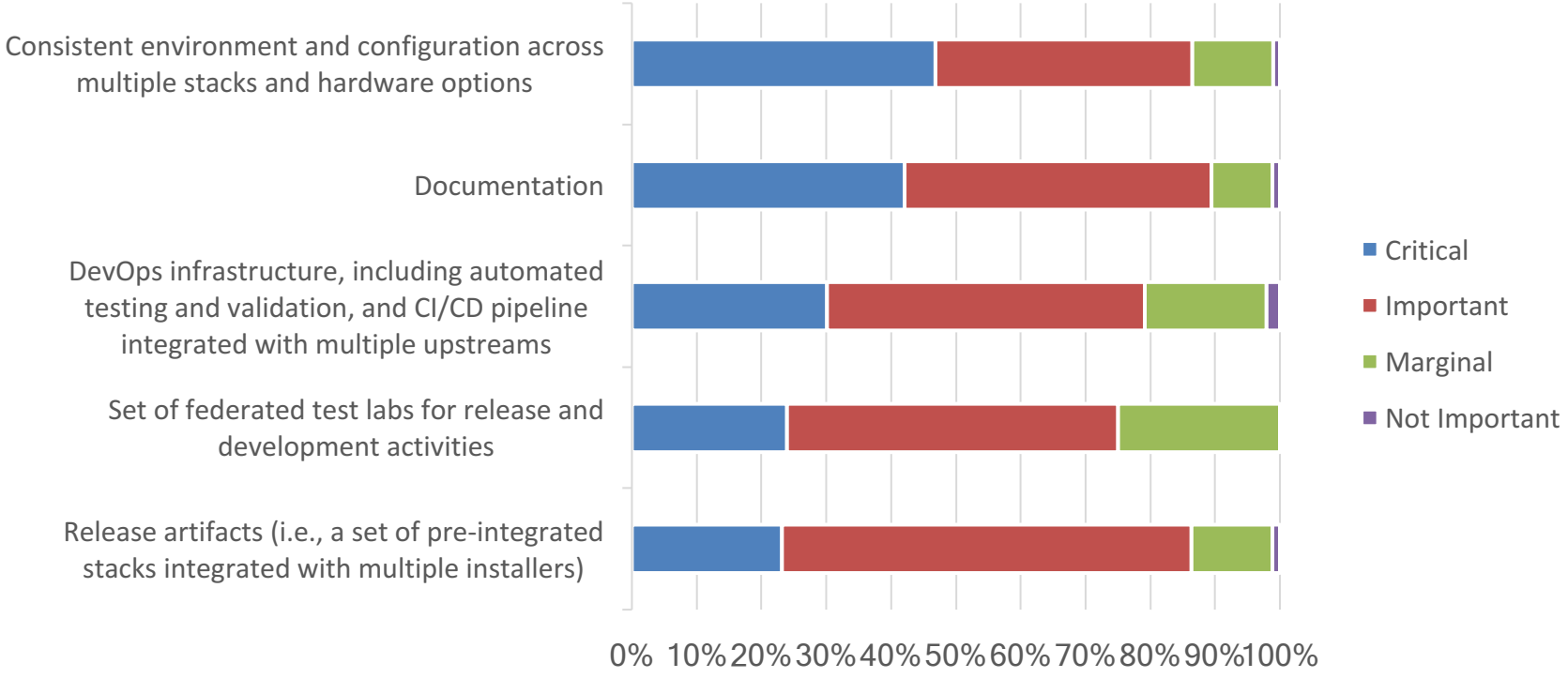
Source: Heavy Reading Service Provider Survey, June 2017 n=97

Most important thing OPNFV is doing



Source: Heavy Reading Service Provider Survey, June 2017 n=97

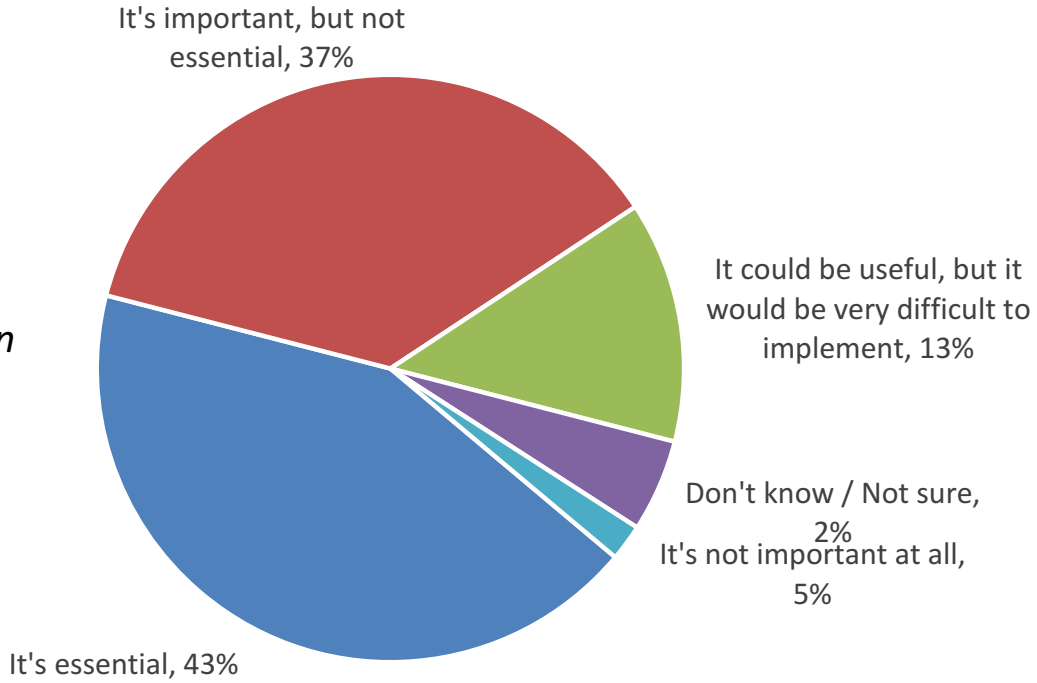
Rating importance of OPNFV activities



Source: Heavy Reading Service Provider Survey, June 2017 n=97

Importance of DevOps to NFV success

Note: More than 50% of those with NFV in production, and more than 50% of those contributing to OPNFV say DevOps is essential.



Source: Heavy Reading Service Provider Survey, June 2017 n=97

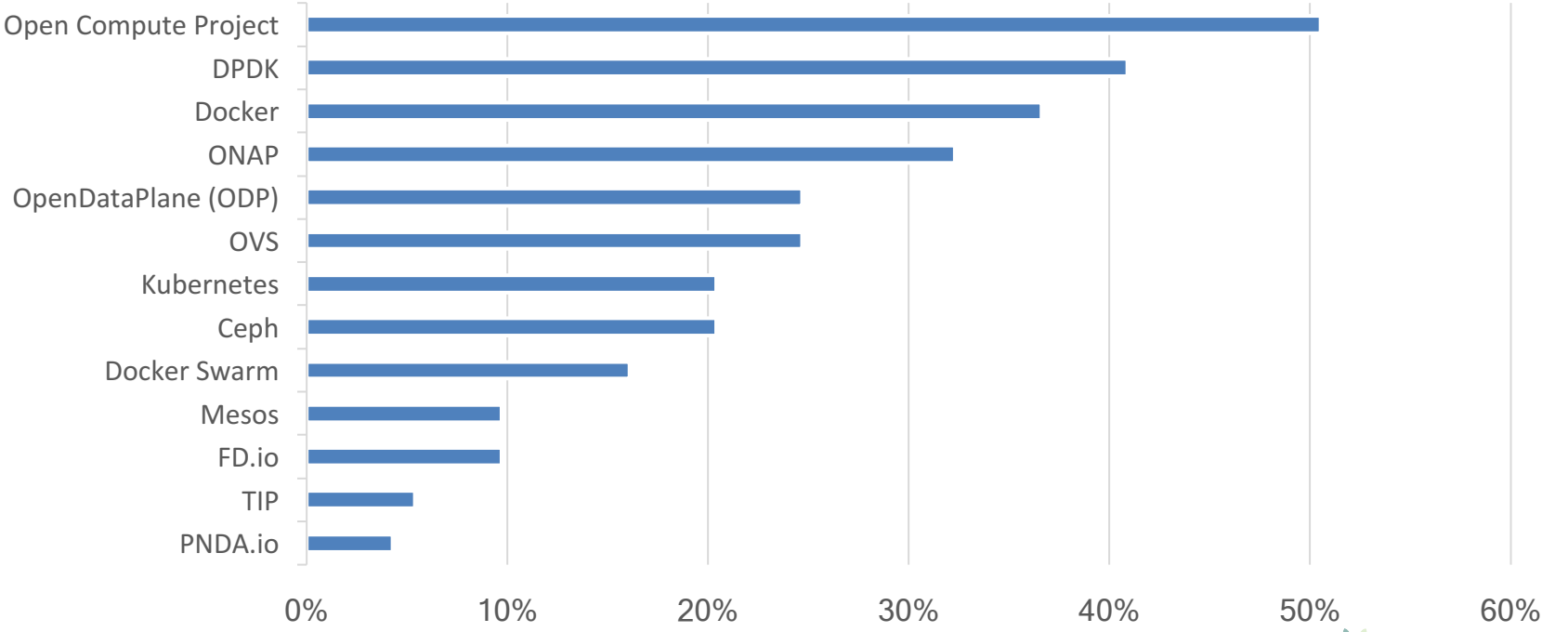
Top expected benefits from OPNFV

Overall Rank	Item	Score
1	Easier integration	143
2	More rapid deployment of NFV	105
3	Accelerated adoption	89
4	Consistent environment across multiple architectures/stacks	79
5	Higher-quality products	73
6	Reduced risk	55
7	Increased understanding of underlying technologies	35

Source: Heavy Reading Service Provider Survey, June 2017 n=97

OPNFV

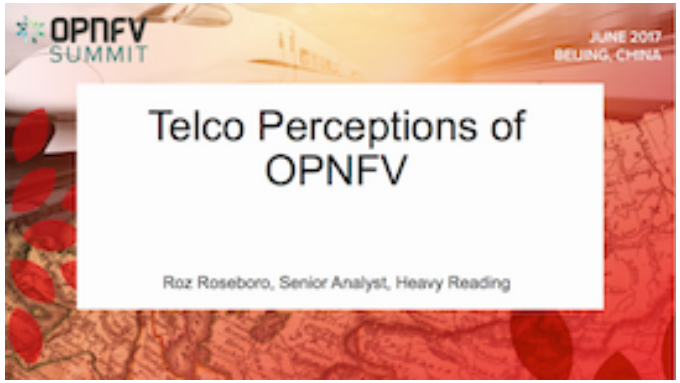
In addition to OpenStack and SDN controllers (e.g., OpenDaylight, ONOS, OpenContrail), which upstream projects are most important to the success of OPNFV?

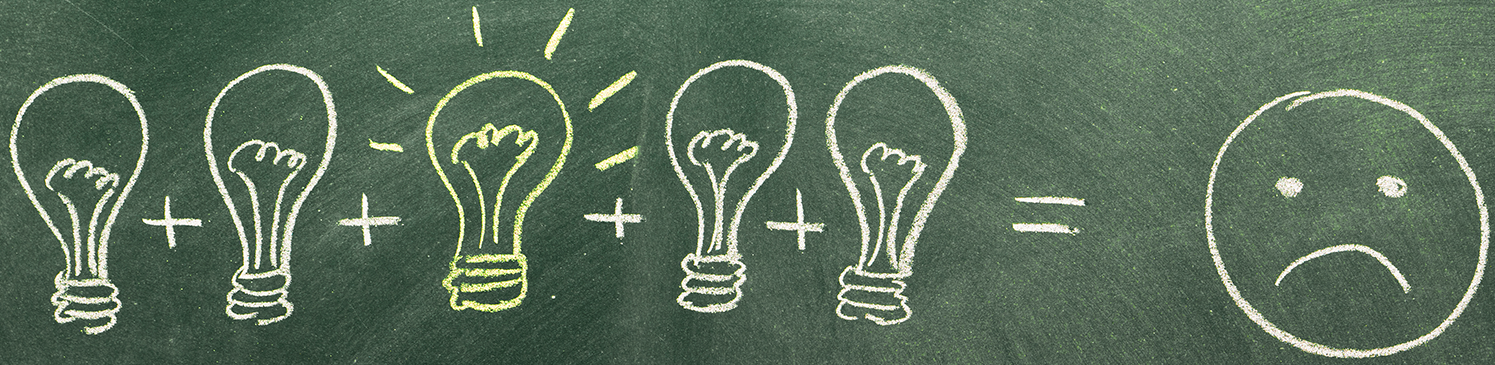


Source: Heavy Reading Service Provider Survey, June 2017 n=97

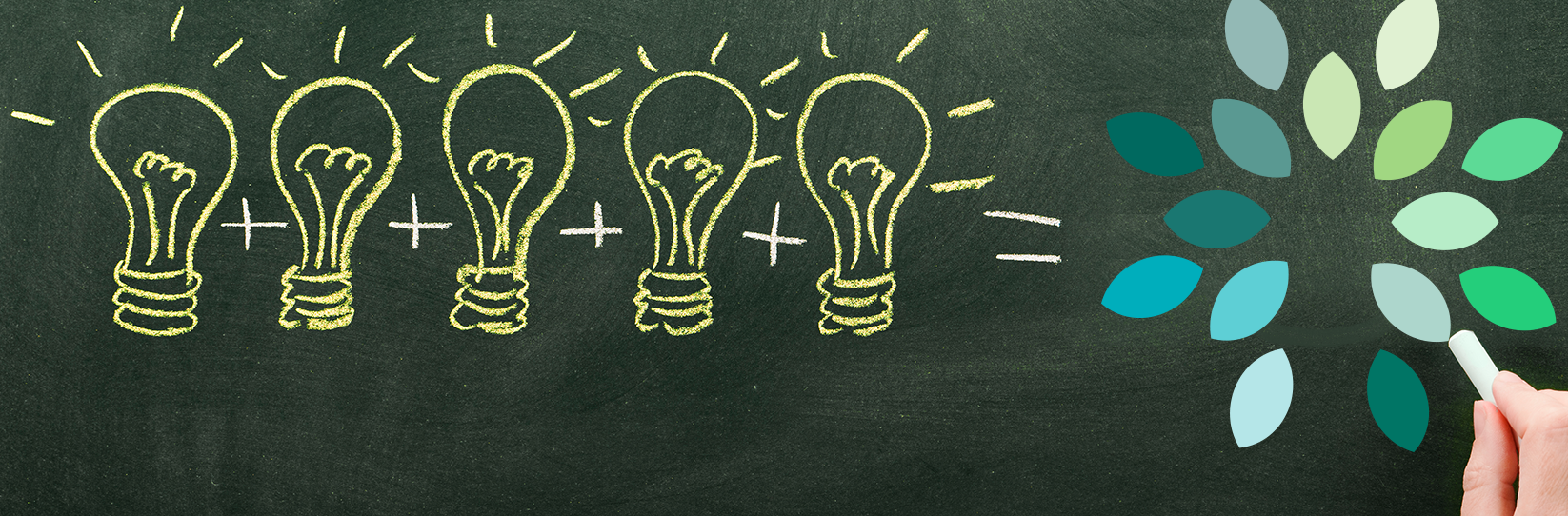
Heavy Reading research

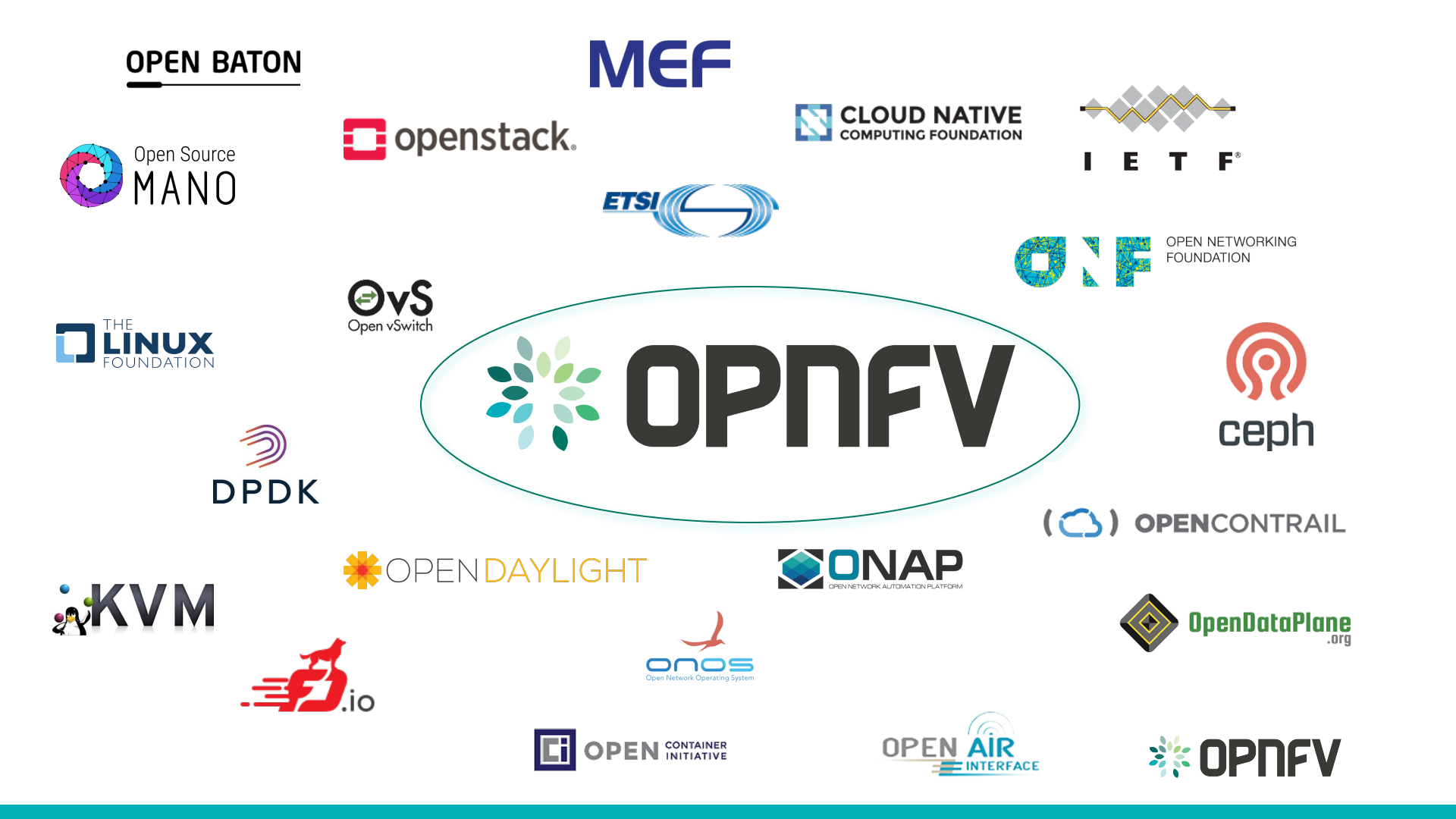
- Learn more!
- “Telco Perceptions of OPNFV” (June 2017)
- Roz Roseboro, Senior Analyst, Heavy Reading
- Presentation Slides:
  - https://www.opnfv.org/wp-content/uploads/sites/12/2017/06/R-Roseboro-Telco-survey-June-2017.pdf





We Need To Work Together




OPEN BATON
MEF
openstack.
CLOUD NATIVE COMPUTING FOUNDATION
IETF
Open Source MANO
ETSI
OPEN NETWORKING FOUNDATION
OvS Open vSwitch
THE LINUX FOUNDATION
OPNFV
ceph
DPDK
OPENCONTRAIL
OPENDAYLIGHT
ONAP
OPEN NETWORK AUTOMATION PLATFORM
KVM
OpenDataPlane .org
.io
onos Open Network Operating System
OPEN CONTAINER INITIATIVE
OPEN AIR INTERFACE
OPNFV

Open Platform for NFV (OPNFV) facilitates the development and evolution of NFV components across various open source ecosystems.

Through system level integration, deployment and testing, OPNFV creates a reference NFV platform to accelerate the transformation of enterprise and service provider networks.

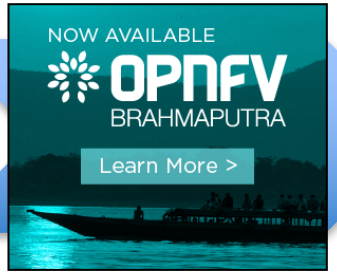
OPNFV

OPNFV release history

June 4, 2015

Baseline foundation of components necessary to build an NFV platform from upstream components

March 1, 2016



Massively parallel simultaneous release process. Advancements in infrastructure, processes, and upstream collaboration

September 26, 2016

Platform support for NFV applications and key improvements in services and support

April 4, 2017

Brings together end-to-end networking stacks, including MANO, data plane acceleration, and architecture advancements.

OPNFV

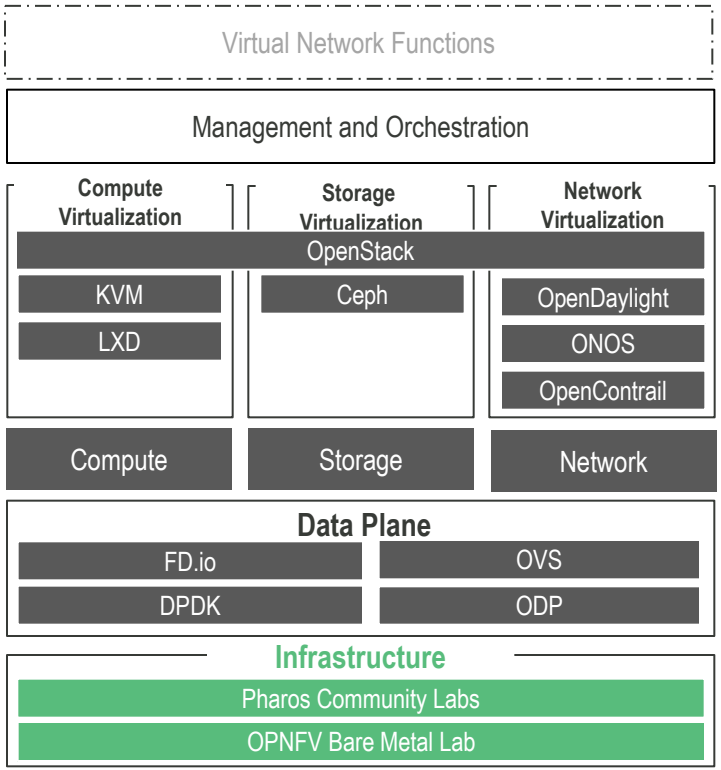
OPNFV
DANUBE

Danube

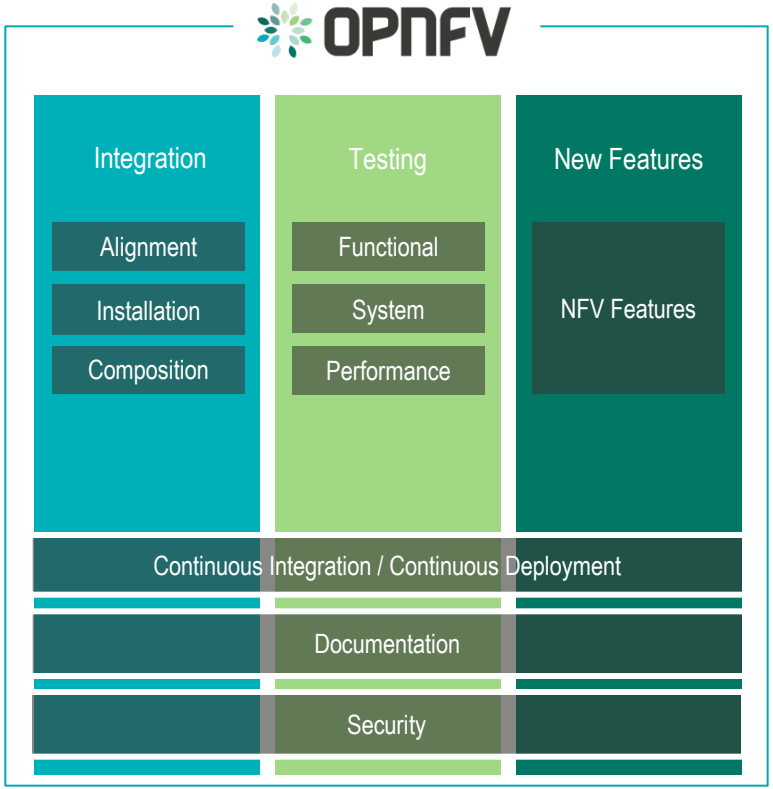
- https://www.opnfv.org/software
- 1.0 released April 4, 2017
- Only platform that brings together elements across multiple end-to-end open networking stacks
- Foundational support and introduction of capabilities for MANO including integration with ONAP (Open-O)
- Enhanced DevOps automation and testing methodologies, including performance and benchmarking test suites
- Architectural improvements including greater network control flexibility, HA, and multisite improvements
- Focus on NFV performance including acceleration of the data plane via FD.io integration and enhancements to OVS-DPDK and KVM
- Feature enrichment and maturity in core NFVI/VIM functionality

OPNFV

OPNFV Danube overview



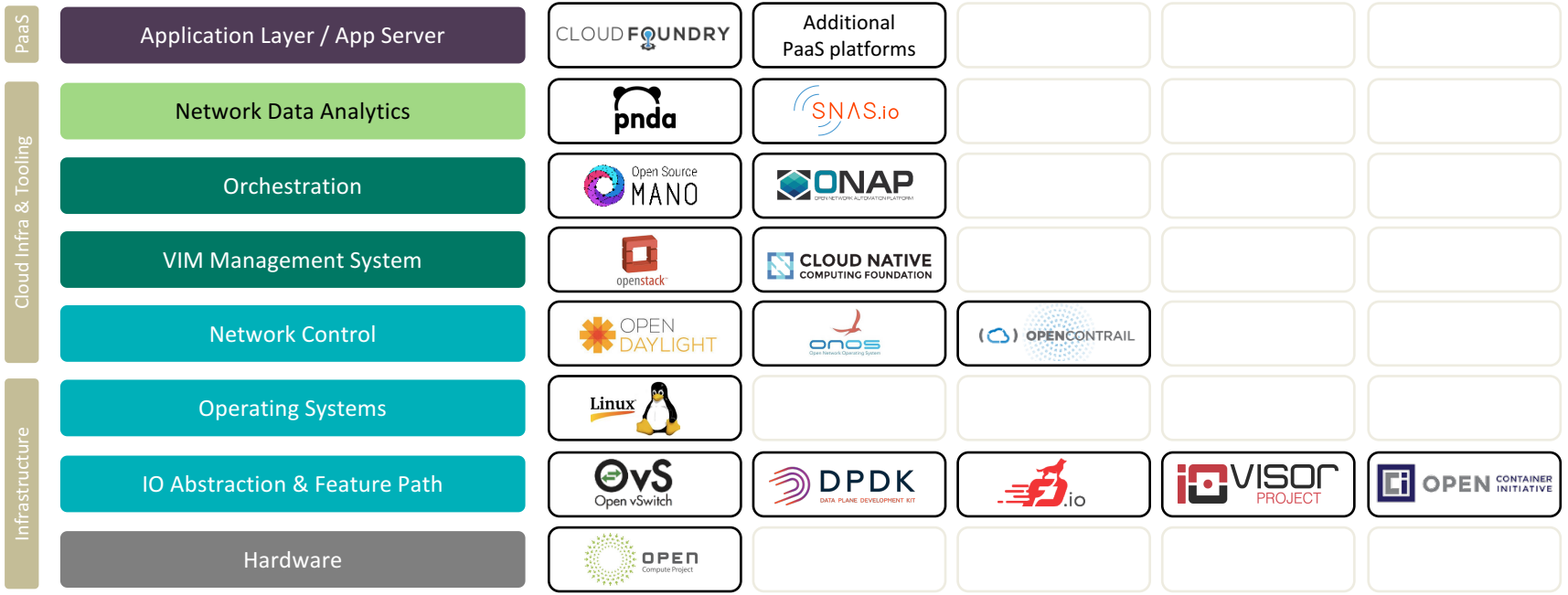
Upstream Project Collaboration:



OPNFV

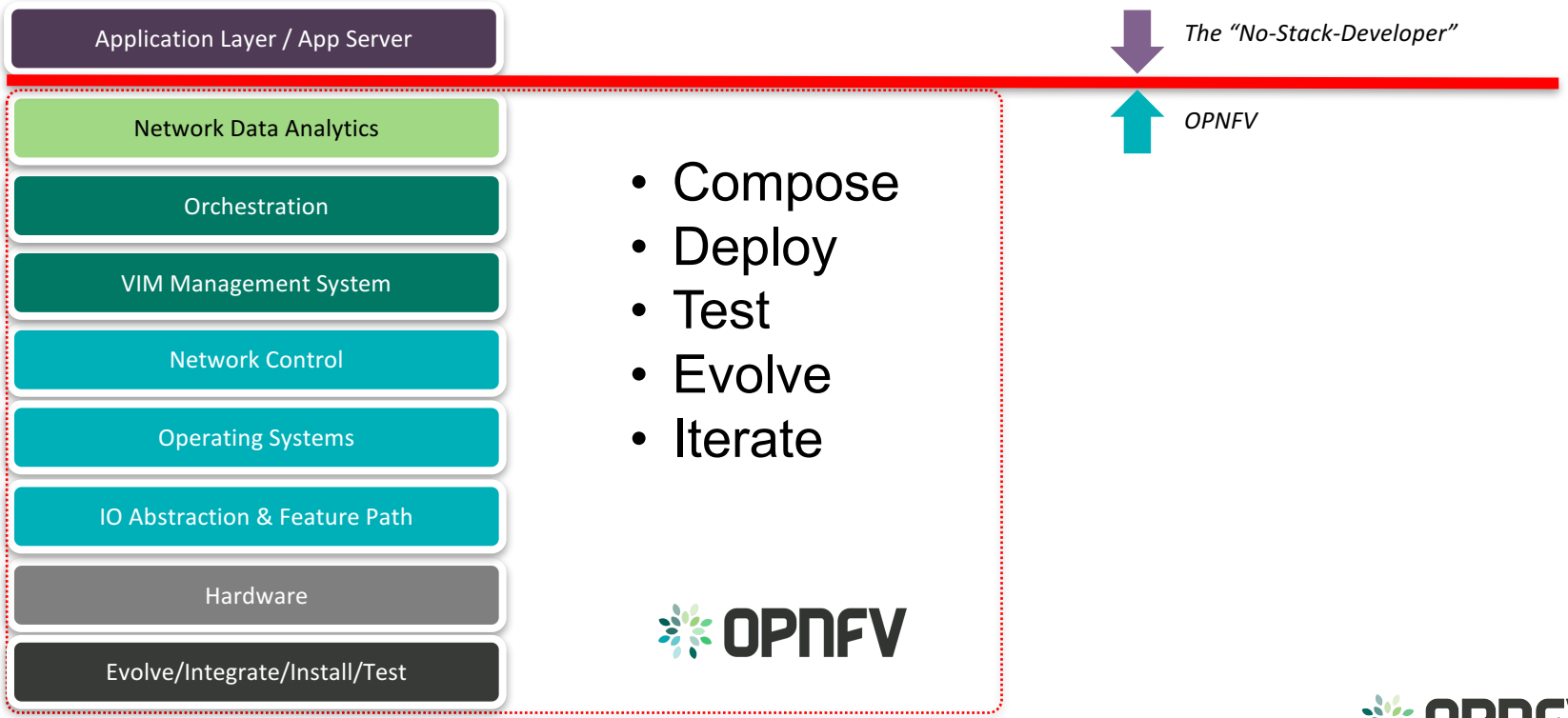
Create.Compose: A typical workflow

OpenSource Building Blocks



OPNFV

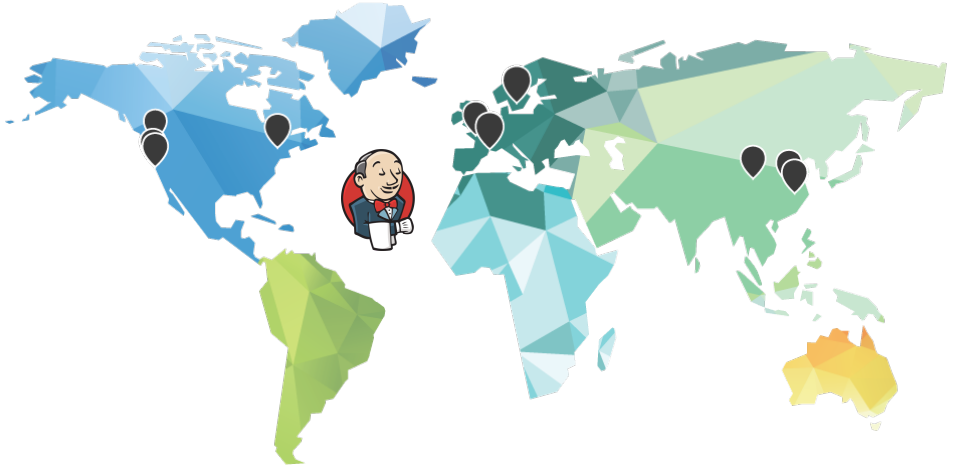
Composing the NO-STACK-WORLD



OPNFV

Infrastructure – Distributed Labs (Pharos Project)

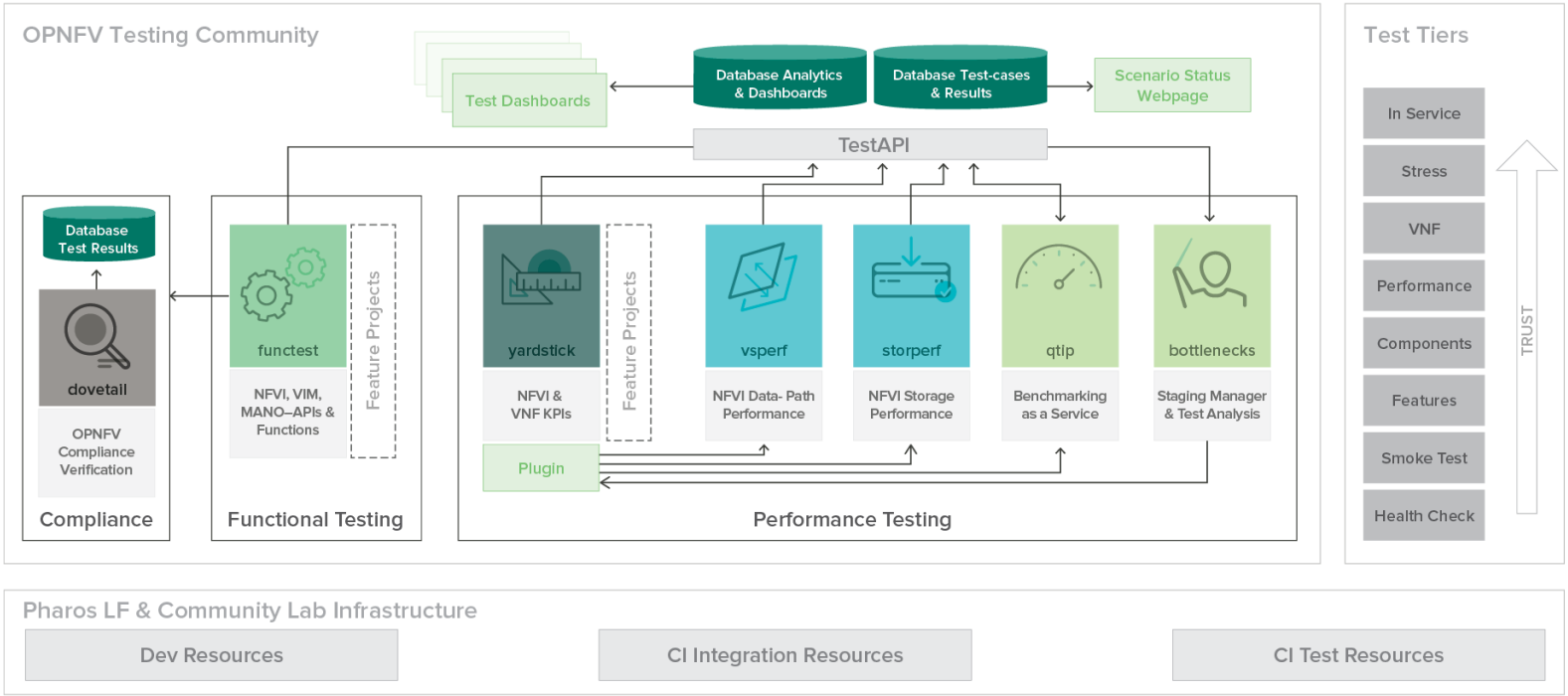
- Facilitate collaborative testing
- Provide developers with substantial resources
- Ensure OPNFV applicability across architectures, environments and vendors
- Create more robust, interoperable releases



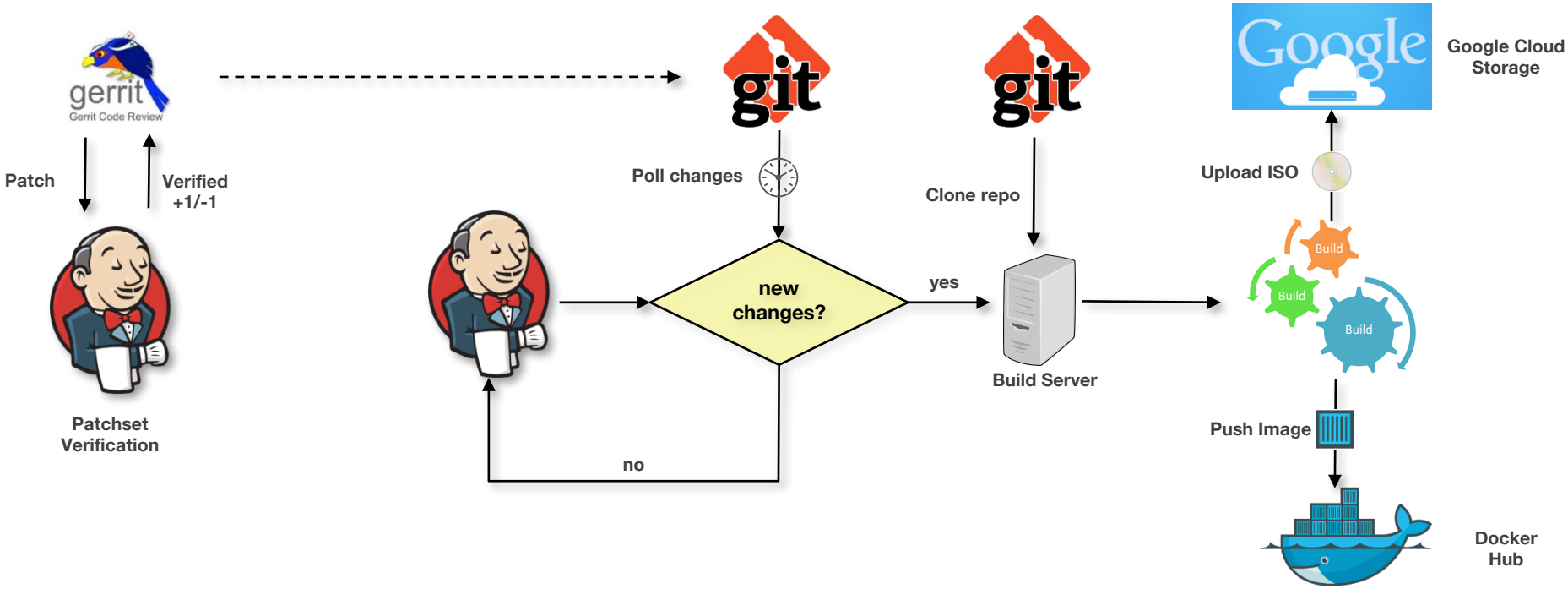
https://www.opnfv.org/developers/pharos

https://wiki.opnfv.org/display/pharos/Pharos+Home

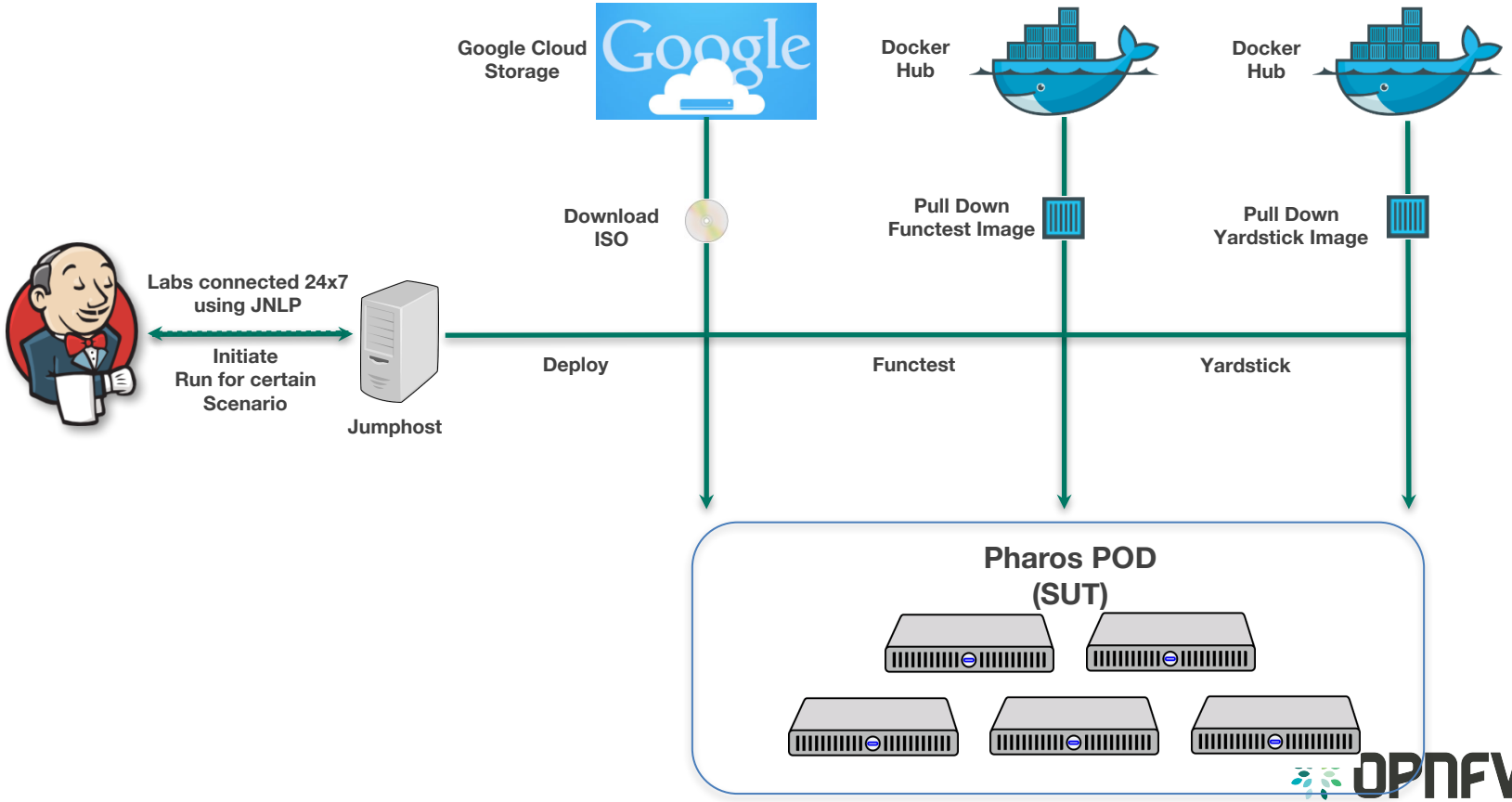
OPNFV Testing Community



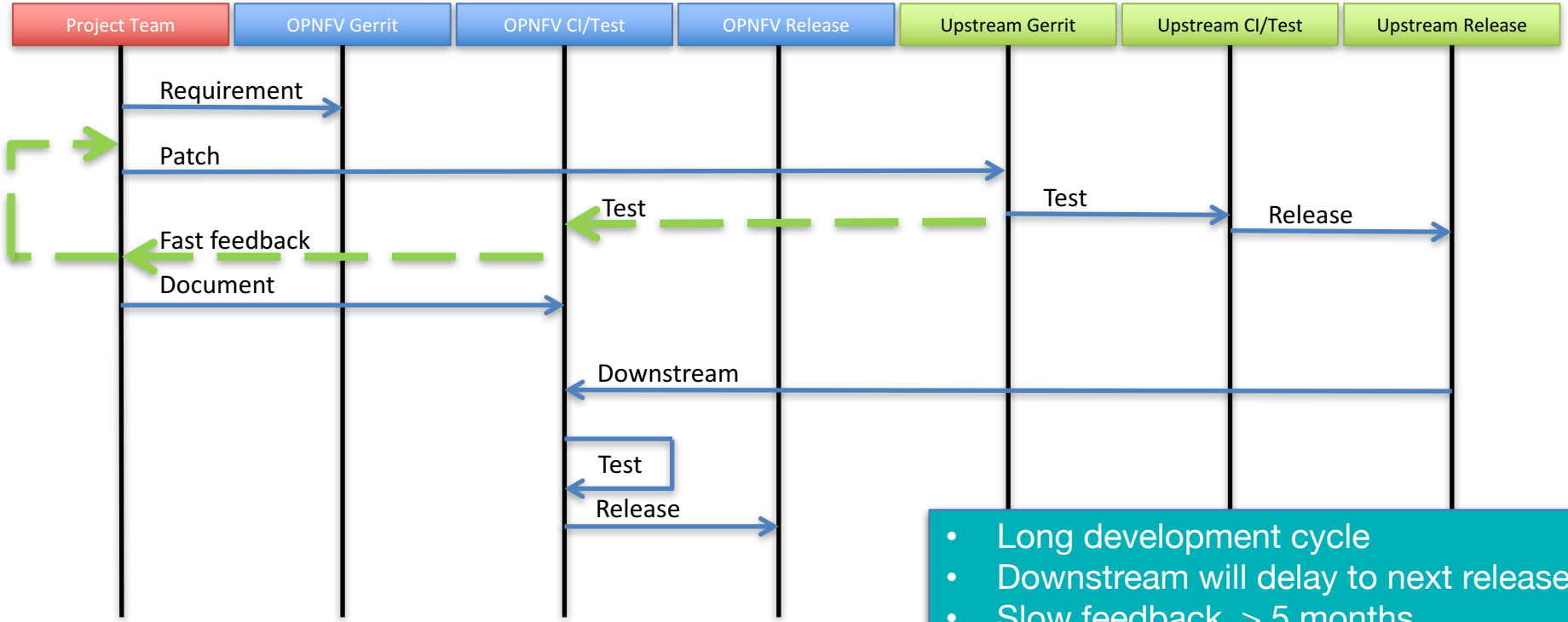
OPNFV CI/CD – Project CI



OPNFV CI/CD – Platform CI

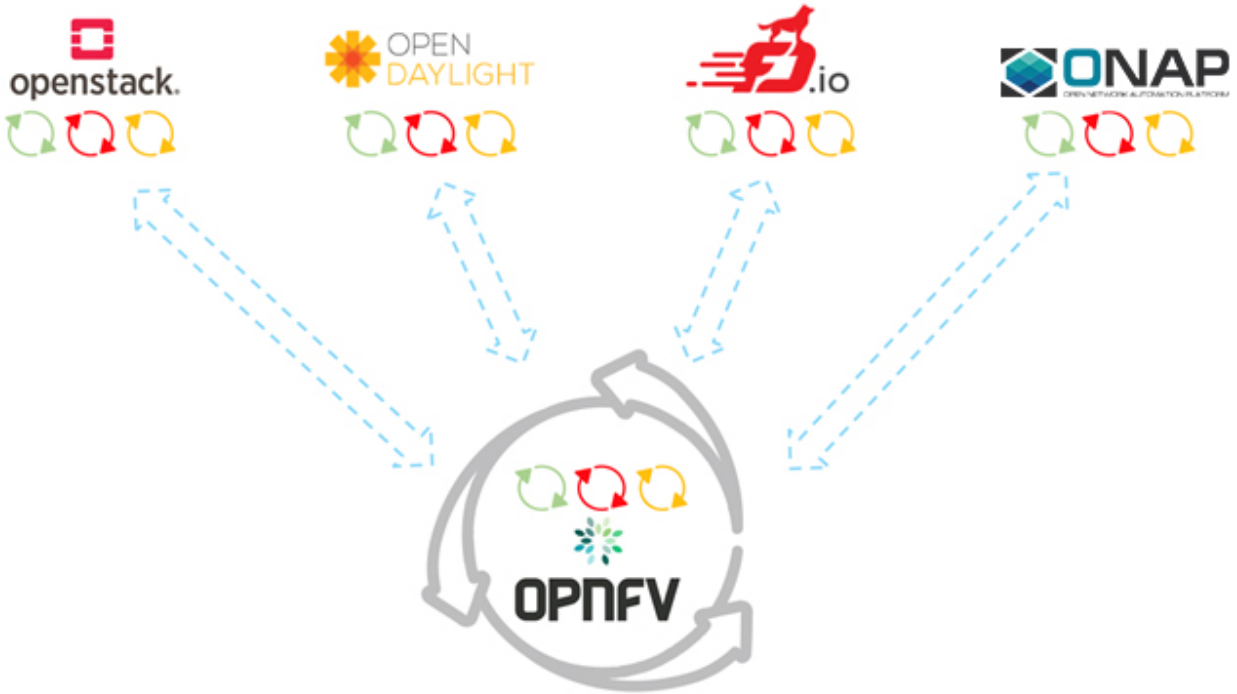


OPNFV Development Workflow



- Long development cycle
- Downstream will delay to next release
- Slow feedback, > 5 months
- OPNFV specific issues cannot be tested/detected in time

Facilitating Faster Integration through Cross-Community CI/CD (XCI)



OPNFV Danube Plugfest

- April 24-28, 2017 at Orange in Châtillon, France
- 87 participants from 29 organizations including 6 end users and 6 non-member organizations
- Focus Areas:
  - Application interoperability
  - MANO integration
  - Prototyping energy management & benchmarking
- Full report available Here: https://www.opnfv.org/resources
- The Euphrates Plugfest will be held Dec 4-8, 2017 at Intel in Hillsboro, OR

OPNFV

PLUGFEST REPORT

Results and Lessons from the Third OPNFV Plugfest (April 2017)

Please direct any questions to info@opnfv.org

NOKIA POD from Espoo, Finland

- JumpHost: Nokia AirFrame Rackmount servers 1U, 4x 10GB, dual 10G LoM, HDD 1x 1TB, 128GB memory, E5-2630 v3 @ 2.40GHz
- One Controller: Nokia AirFrame Rackmount servers 1U, 4x 10GB, dual 10G LoM, HDD 1x 300 GB, 1x 1TB, 128GB memory, E5-2630 v3 @ 2.40GHz
- Five Computes: Nokia AirFrame Rackmount servers 1U, 4x 10GB, dual 10G LoM, HDD 1x 1TB, 128GB memory, E5-2630 v3 @ 2.40GHz

Connectivity

Plugfest attendees were able to access both local and remote PODs from the meeting rooms. Local PODs were connected to a datacenter in an adjacent building through dedicated high-speed networks. Remote PODs were available through a firewall via OpenVPN.

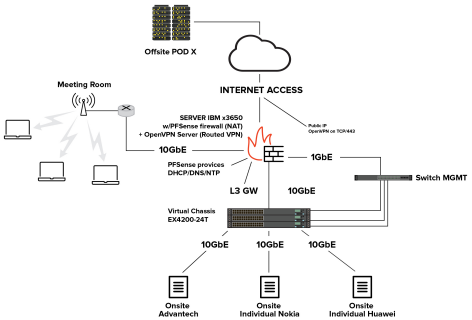


Figure 6: Simplified Plugfest Networks Configuration

Get it here: https://www.opnfv.org/resources

2017 OPNFV Summit

- June 12-15, 2017
- JW Marriott, Beijing, China
- 561 Attendees
- 11 Keynotes
- 67 Breakout Sessions
- Co-located Events:
  - CNCF, DPDK, FD.io, ONAP, OpenDaylight, Open-NFP, OpenStack
- Recap Page: https://www.opnfv.org/opnfv-summit-2017-event-recap

OPNFV membership List

Platinum Members

Silver Members

Associate Members

OPNFV

OPNFV by the numbers

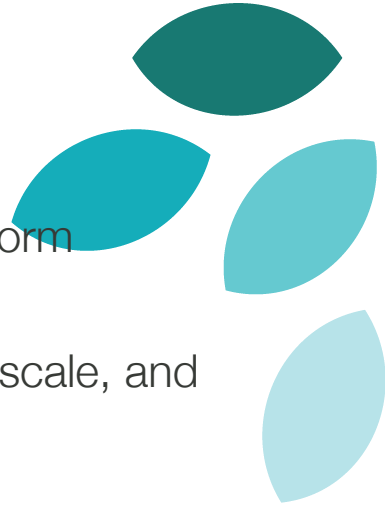
50	534	4	17	28,137	16
Member Companies	Developers	Major Releases	OPNFV User Groups	Commits	Pharos Test Labs

Governance

- A Business (Board) and Technical (TSC) governance structure separates business decisions from meritocratic, technical decisions

Why join as a member?

- Showcase your support for a community-driven, open source platform
- Enable widespread adoption of NFV
- Create an open, carrier-grade platform which meets performance, scale, and reliability requirements
  - Take advantage of the innovation in the open source community
  - Coordinate upstream contributions to address gaps
  - Integrate open source components for an end-to-end solution
- Drive for faster traction and lower development cost on realizing a carrier-grade NFV open platform
  - Take advantage of the resource multiplier effect due to multiple company support
  - Improve speed of development and breadth of features



OPNFV

Membership levels

Membership Level	Annual Fee	Minimum FTE* Requirement	Board Seat	TSC Seat	Notes
Platinum	Flat fee: $200k	2	Yes	Yes	2yr initial commitment, payable each year
Platinum – Strategic End-User	Flat fee: $100k	1	Yes	Yes	2yr initial commitment, payable each year
Silver [1]	$10-50k based on org size[1]	0	1 per 10 Silver members	No	Can be elected to the TSC as a community representative
Silver – Strategic End-User[2]	$5-25k based on org size[2]	0	1 per 10 Silver Strategic End Users	No	Can be elected to the TSC as a community representative
Associate (for non-profit/academic institutions)	N/A[3]	N/A[3]	No	No	Can be elected to the TSC as a community representative

[1]Silver Annual Fee Scale
> 5000 employees = $50K
500-4999 employees = $30K
100-499 employees = $20K
< 100 employees = $10K

[2]Silver – SEU Annual Fee Scale
> 5000 employees = $25K
500-4999 employees = $15K
100-499 employees = $10K
< 100 employees = $5K

[3]Associate (for non-profit/academic)
Requires technical contributions to OPNFV such as:
Testing/developer resources
Hosting hackfests/plugfests
Training
Research
Others

* FTE = Full Time Engineer (e.g. 2 employees each spend 50% of their time on a project). This provision is meant to provide a minimum resource investment to ensure members are contributing technically. Most projects see much higher investment of resources than the minimum requirement.

OPNFV

2017 OPNFV project goals

- Continually evolve the OPNFV reference platform and methodology to deepen VNF testing capabilities, incorporate MANO functionality, and ensure interoperability
- Leverage end user participation in the technical community to validate market needs and to help prioritize efforts
- Collaborate with upstream communities to ensure OPNFV requirements are understood and being worked and to develop efficiencies, best practices, and consistent delivery of market-ready open source components
- Reduce fragmentation and coalesce the industry around open standards, open source, and open NFV solutions
- Provide integrated, robust testing, verification, and a CI/CD infrastructure to accelerate time to market for NFV products and services

What's next?

- Much, much, much more of the same
- OPNFV Plugfest/Hackfest
  - Twice annual
  - Testing and infra improvements
  - SDN controller & storage Performance, policy testing
- Continued advances in carrier grade features, including L2VPN, Policy Management, Security, Multisite, Upgrades, Forwarding, and Data Plane
- Container Support
- OPNFV Euphrates (October 2017)

OPNFV: An Open Community

- Open Governance Model
- Open Technical Decision Making
- Open Design Discussion
- Open Source License
- Open To All

OPNFV

Get Involved

- Website: http://www.opnfv.org/
- Wiki: https://wiki.opnfv.org/
- Companies: Join as a member and/or join projects
- Developers: Join approved projects, propose a project, write documentation, contribute use cases, define tests, analyze requirements, build upstream relationships, contribute code, contribute upstream code, define processes, resource a community lab, answer questions, give training, evangelize.
- Participation in OPNFV is open to anyone, whether you are an employee of a member company or just passionate about network transformation.

OPNFV

Questions?

Please direct any questions or comments to info@opnfv.org

OPNFV