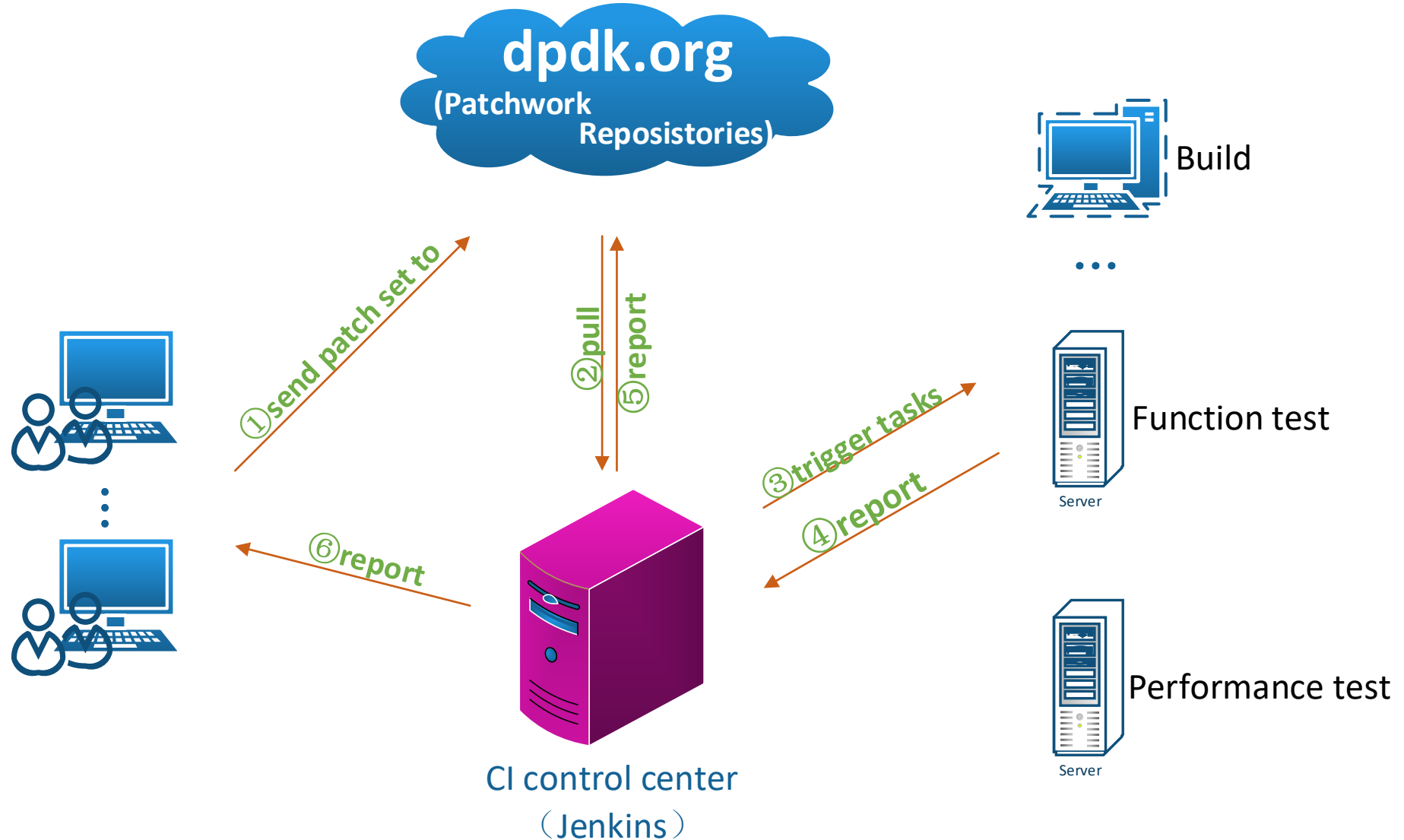# DPDK CI & Open Lab

Lijuan Tu，Intel
Jeremy Plsek，UNH-IOL

DPDK Userspace – Dublin - 2018

Agenda

- ☐ Continuous Integration Status

- ☐ Proposal for CI improvement

- ☐ CI in Open Lab

- ☐ Open Lab CI dashboard

DPDK CI introduction

DPDK CI current status

DPDK CI has two parts:

Before merge: Process of new patch set which haven't merge into any tree

After merge: Process of main-tree (master)

	Before merge	**After merge**
build	✓（Intel）	✓（Intel）
Unit test	✗	✓（Intel）
Function test	✗	✓（Intel）
Performance test	✓（Open lab）	✗

✓ Implemented
✗ Gap

Proposal for CI improvement

➢ Gaps
- ➢ Before merge
  - • Need identify patch set to go to which tree
  - • Need cover unit test and function test
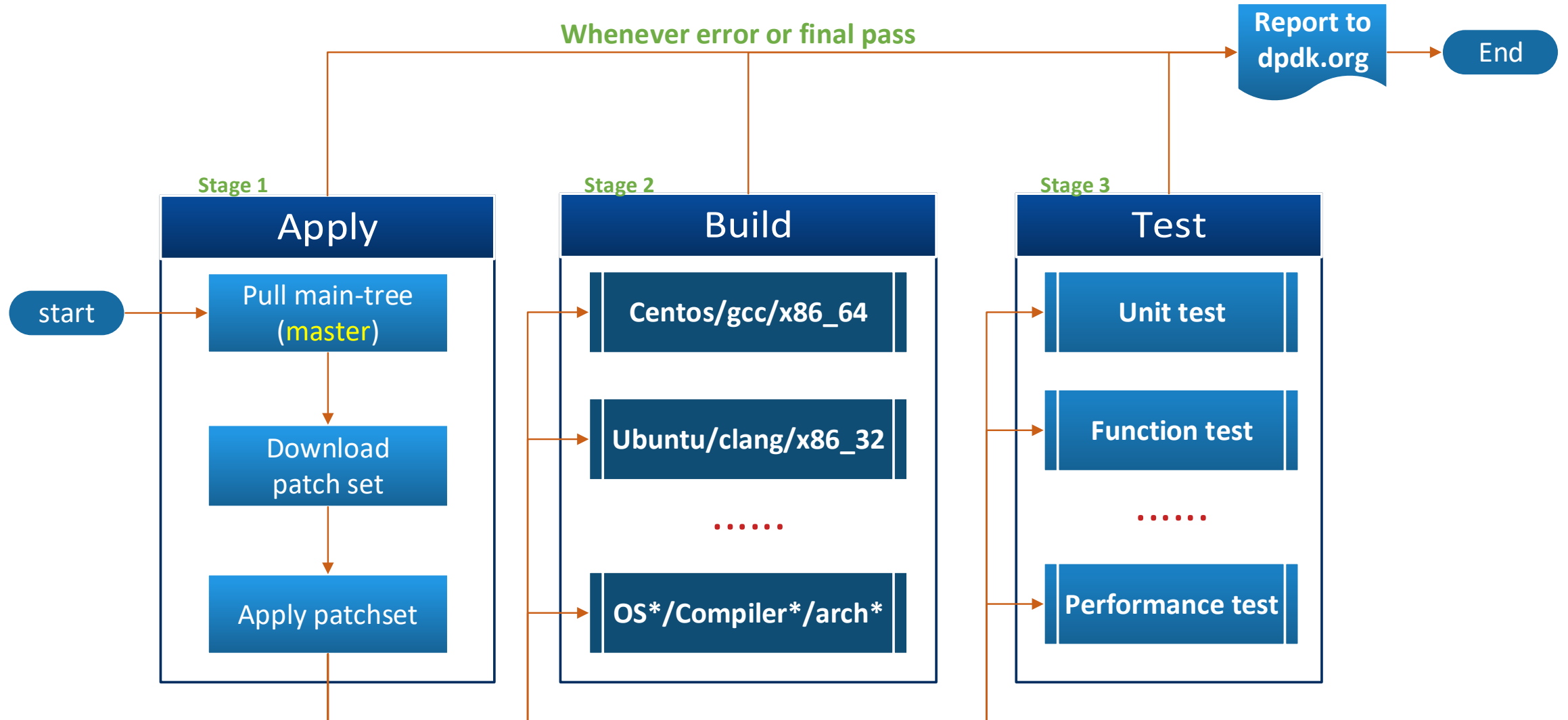 - • Need more performance test
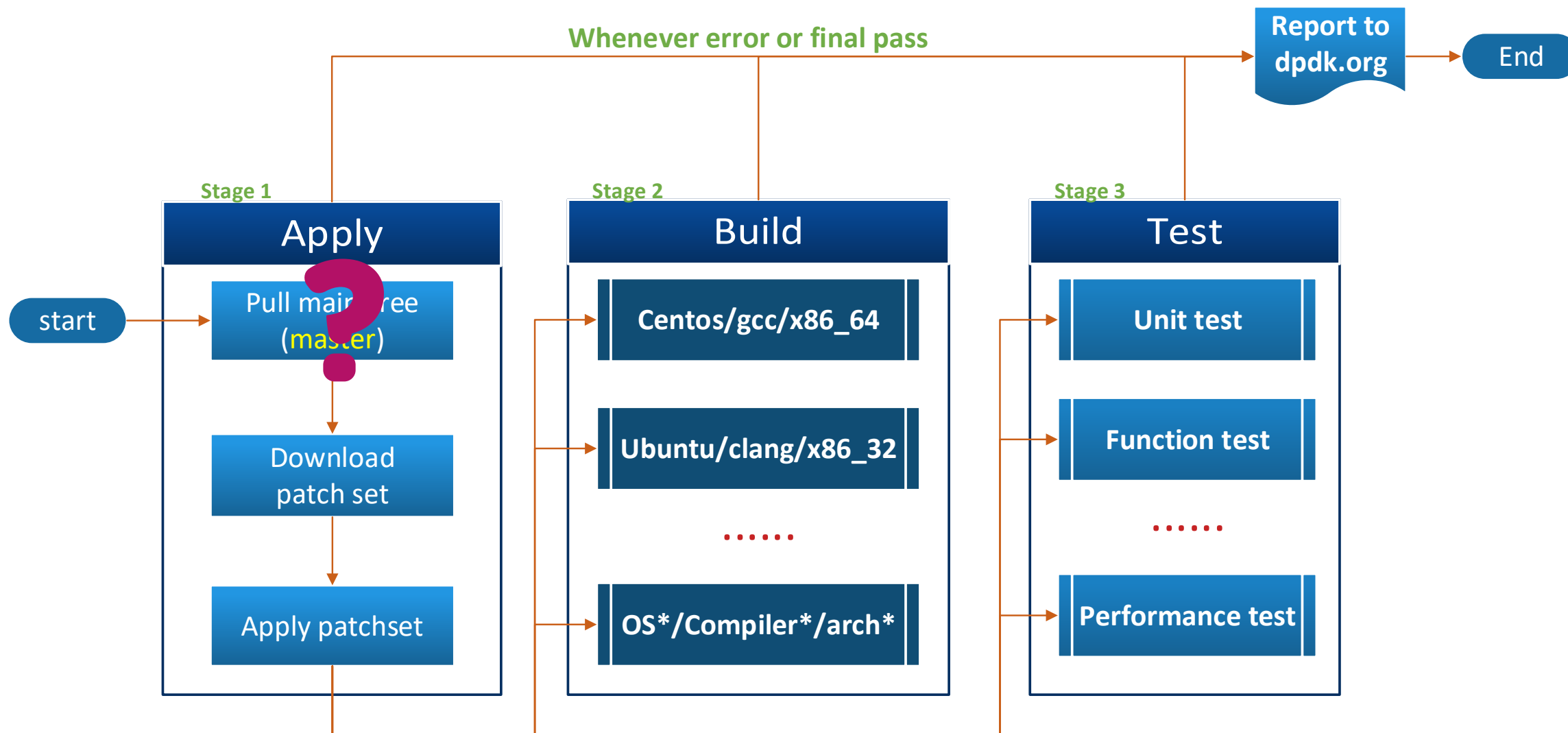- ➢ After merge
  - • Need cover performance test

➢ Proposal
- • Two options on tree-selected issue.
- • Step by step cover the test gaps
- • Before merge > after merge
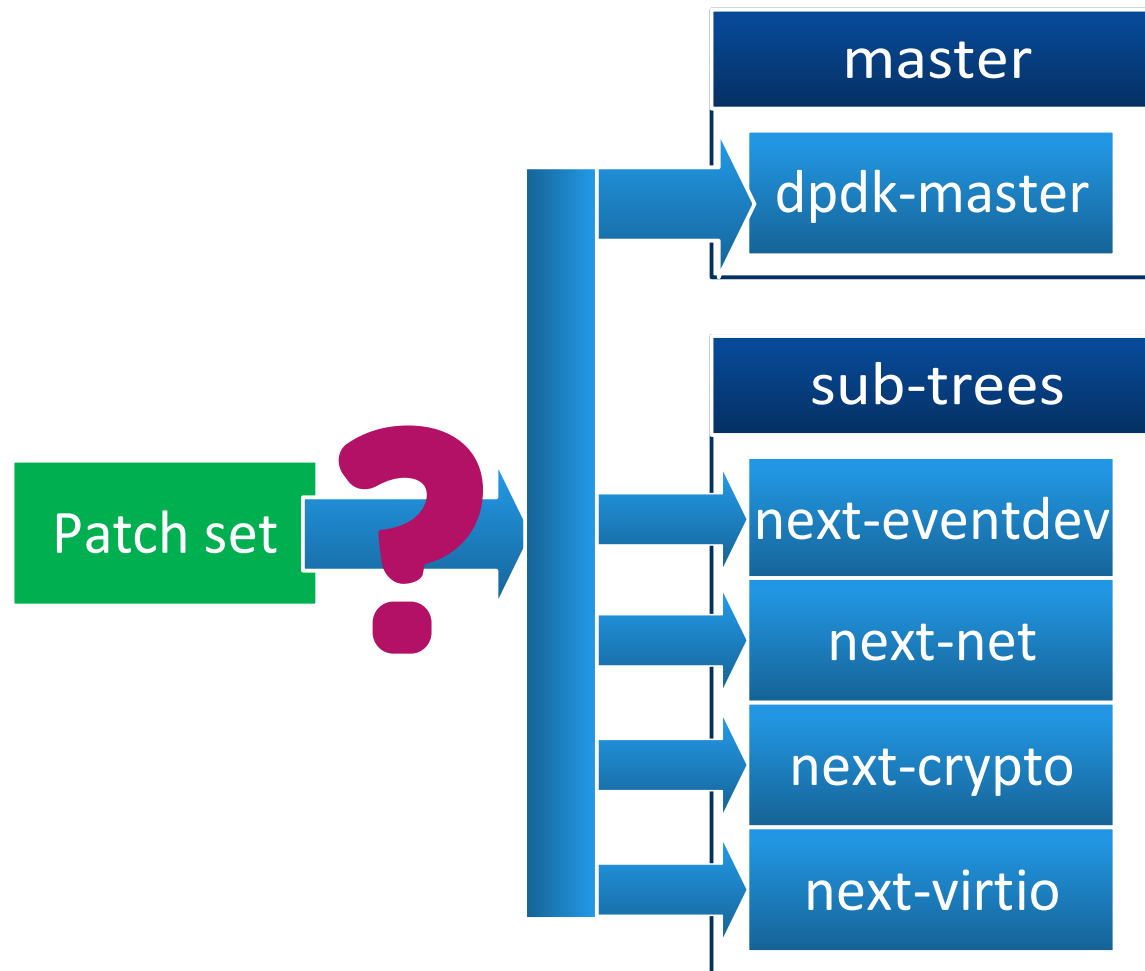
Workflow - Before merge

Workflow - Before merge

Open: Which tree patch set should go ?

Options
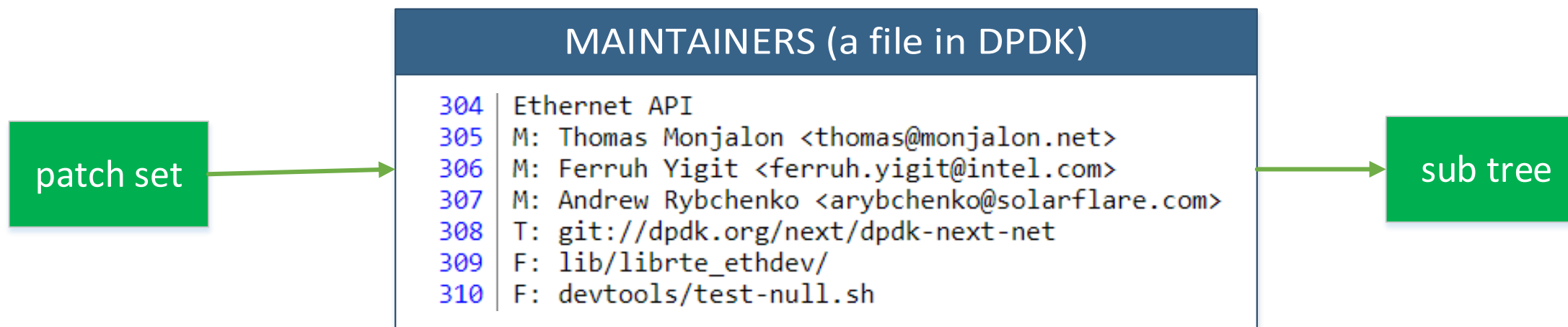1. Go to next-master
2. Go to exact sub-tree

master

dpdk-master

sub-trees

Patch set ?

next-eventdev

next-net

next-crypto

next-virtio

Option 1: Go to next-master
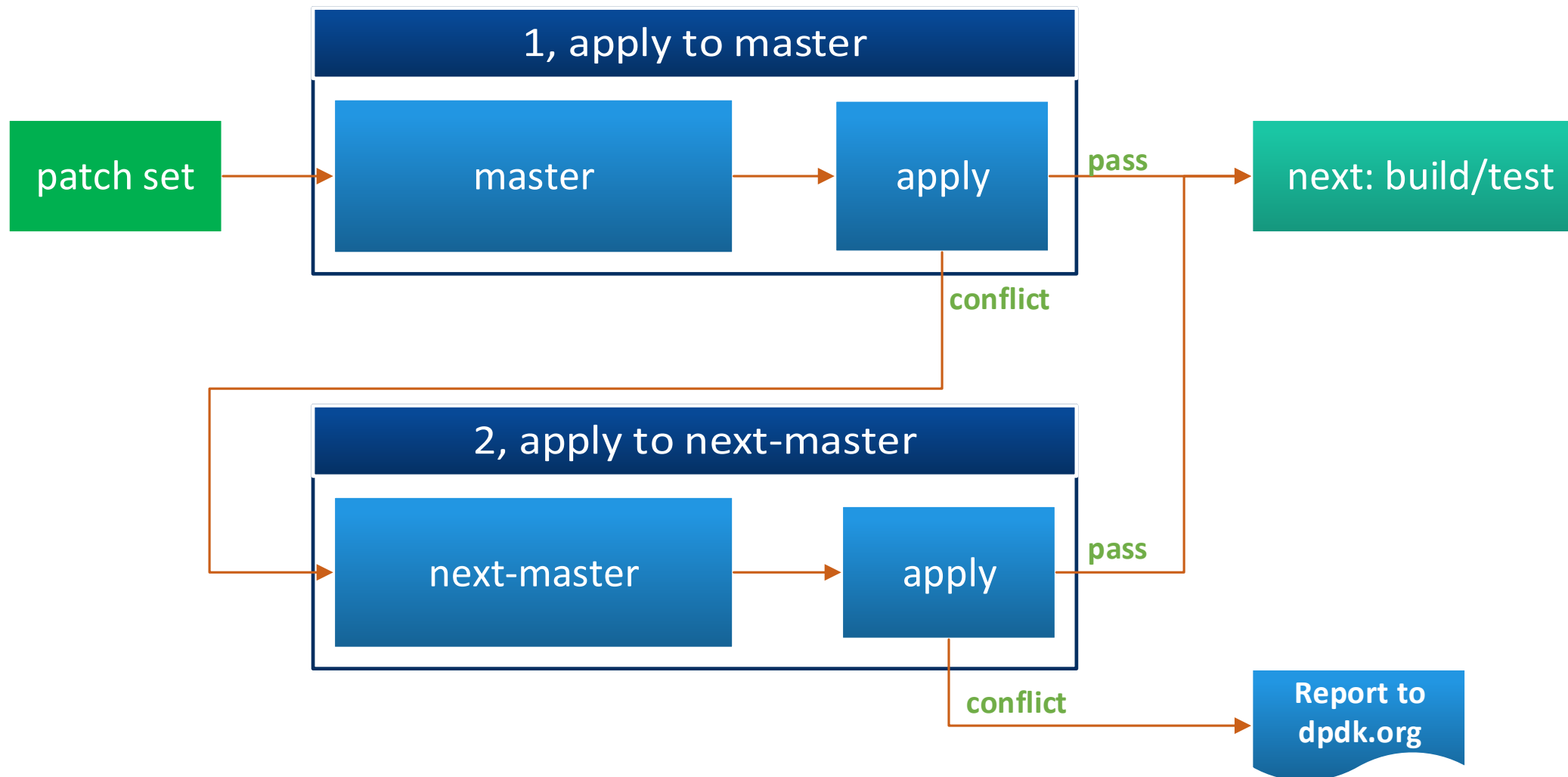
next-master: Local tree which formed by merging all sub-trees into master

Option 2: Go to exact sub-tree

MAINTAINERS (a file in DPDK)

patch set → MAINTAINERS → sub tree

```
304 | Ethernet API
305 | M: Thomas Monjalon <thomas@monjalon.net>
306 | M: Ferruh Yigit <ferruh.yigit@intel.com>
307 | M: Andrew Rybchenko <arybchenko@solarflare.com>
308 | T: git://dpdk.org/next/dpdk-next-net
309 | F: lib/librte_ethdev/
310 | F: devtools/test-null.sh
```

- Information in MAINTAINERS file

- Script to analyze the git history and gives a percentage of probability.

Option comparison

Go to	next-master (**Preferred**)	exact sub-tree
Pros✓	1. No dependency 2. No extra script 3. Already have weekly merge: sub-trees to master 4. Early to find issues	1. Timely reports
Cons✗	1. Will be delayed if merge conflict 2. Maintainers need to manually fix conflict	1. Extra script effort 2. Still uncertainty

Workflow – After merge
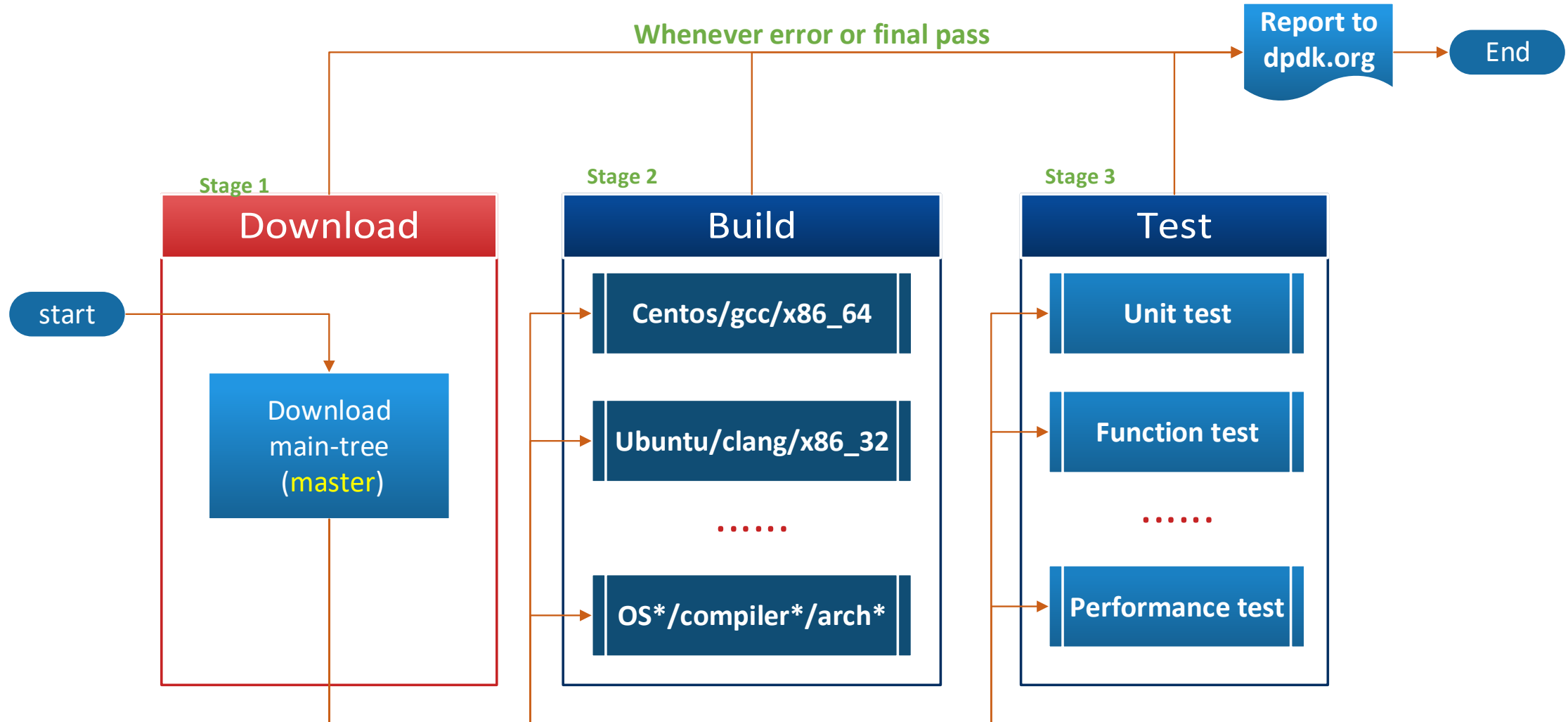
DPDK CI in Open Lab

	Before merge	**After merge**
build	✓（Intel ）	✓（Intel）
Unit test	**Open lab**	✓（Intel ）
Function test	**Open lab**	✓（Intel ）
Performance test	✓（Open lab）	**Open lab**

Future plan (before merge > after merge)
1. CI before merge implementation deploy (option 1)
2. More basic & critical performance test
3. Expend to function test & unit test

Open Lab CI dashboard

- What is it?

- Who is it hosted by?

- What are the plans for the future?

- How to get involved?

What is it?

https://lab.dpdk.org/

DPDK CI Dashboard   Login

Home

Below is the current CI performance testing status for the patchsets currently active in the DPDK Patchwork instance. Possible statuses are Pending, Waiting, Apply Error, Incomplete, Possible Regression, and Pass. NIC vendors may log in to view detailed performance results for their hardware.

ID	Ver	Title	Submitter	Status [?]
43792	2	[v2] port: add sym crypto port	Zhang, Roy Fan	Pass
43791	1	[RFC] mlx5: flow counters support on the linux-rdma v19 base	viacheslavo	Pass
43790	1	port: add sym crypto port	Zhang, Roy Fan	Pass
43789	1	[RFC] ethdev: flow counters batch query	viacheslavo	Pass
43788	1	bus/fslmc: fix the undefined ref of rte dpaa2 memsegs	Hemant Agrawal	Pass
43787	2	[v2] net/bonding: fix buf corruption in merging un-transmitted packets	Jia Yu	Pass
43786	1	net/bonding: fix buf corruption in merging un-transmitted packets	Jia Yu	Pass
43785	1	net/octeontx: fix packet corruption on Tx	Jerin Jacob	Possible Regression
43784	1	vhost: initializing iotlb memory only when IOMMU feature is enabled.	Nitin Katiyar	Pass
43783	1	app/testpmd: add commands for TM to mark pkts	Krzysztof Kanas	Pass
43782	1	vhost: fix crash if set vring num handling failed	Ilya Maximets	Possible Regression
43777–43781	1	Enable hotplug in vfio	Jeff Guo	Apply Error

Detailed View

- View relative performance numbers

- View hardware configuration information

- Download artifacts for logged in members

Baseline   master (3605968c2fa783674624562a7dfab256eb9044ea)
Date Submitted   Aug. 30, 2018, 5:33 a.m.

- [1/2] event/dpaa: remove duplicate log macros
- [2/2] event/dpaa: add select based event support

Test Results
Overall result: Pass

Intel Corporation Ethernet Converged Network Adapter 82599ES 10000 Mbps

Configuration Information

Kernel	Linux 4.13.0-43-generic
Compiler	gcc gcc (Ubuntu 7.2.0-8ubuntu3) 7.2.0
Target	x86_64-native-linuxapp-gcc
Fail/Total	0/3

Detailed performance results

Test run at: Aug. 30, 2018, 11:15 p.m. (17h 42m 16s since patchset posted)

Test Case: nic_single_core_perf

Result	frame_size (bytes)	txd/rxd (descriptors)	throughput Difference (Mpps)
PASS	64	128	0.17600
PASS	64	512	0.18200
PASS	64	2048	0.04800

Download test result artifacts

Mellanox ConnectX-5 MT4121 100000 Mbps

Configuration Information

Kernel	linux 4.4.0-109-generic
Compiler	gcc 5.4.0-6ubuntu1~16.04.6
Target	x86_64-native-linuxapp-gcc
Fail/Total	0/6

Detailed performance results

Test run at: Aug. 30, 2018, 11:19 p.m. (17h 46m 33s since patchset posted)

Test Case: nic_single_core_perf

| Result	frame_size (bytes)	txd/rxd (descriptors)	throughput Difference (Mpps)
PASS	64	256	0.03400
PASS	128	256	0.08100
PASS	256	256	0.11000
PASS	512	256	-0.01000
PASS	1024	256	-0.08500
PASS	1518	256	0.01400

Download test result artifacts

Who is it hosted by?

- University of New Hampshire InterOperability Laboratory (UNH IOL)

- Provides a neutral environment for members

- Established in 1988 with over 100 currently participating companies

- Current Open Lab Participants: Intel, Mellanox, NXP
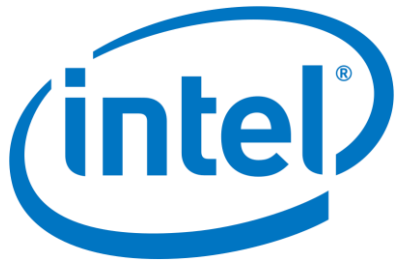
What are the plans for the future?

- Running different test cases

- User management

- Graphing Integration

- Continuous Integration

Getting Involved

Dashboard: https://lab.dpdk.org/

Issue reporting: https://bugs.dpdk.org/

CI Mailing List: http://mails.dpdk.org/listinfo/ci

Submitting Equipment: https://www.iol.unh.edu/testing/hpc/dpdk

Contact: dpdklab@iol.unh.edu