

Better development with robots

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My presentation is a lot like yours, only more interesting 'cause it involves robots

The talk

- Robot here is code for CI enabling technologies
- Q: What robots are scurrying about when you post a patch?
- Q: How can I avoid being taunted by a machine?
- Q: I want to help out with robots, how do I do that?
- Community feedback

Hey developers, wanna test all patches?

Patches are public

- Everyone submits them
- People don't want to admit that they fail to test them
- We can all do better

Tests can be run on the patches

- We know what got submitted
- Just build it!
- Knowing where to apply the patch can be tricky
- Please - run the unit tests!

Reports are public

See <http://mails.dpdk.org/archives/test-report/>

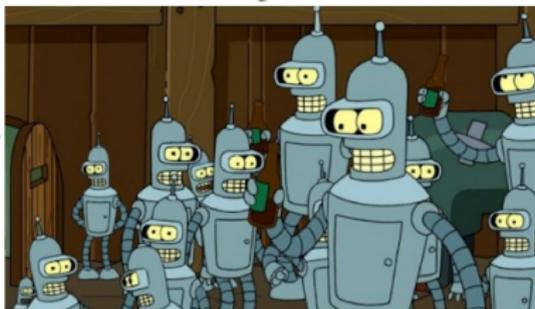
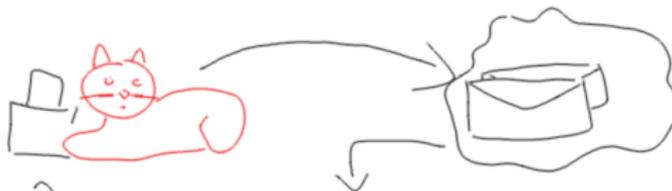
Oh, I get it– make the robot do all the work.

All these patches, like tears in a rain

- Developers come up with a bunch of patches
- They send them via email to the mailing list
- Patchwork gets those emails and builds up series information
- The robots monitor patchwork and start processing

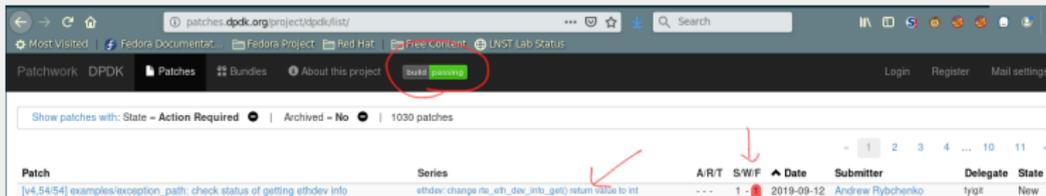
Malfunction! Need input!

How a patch gets to a robot



Here I am with a brain the size of a planet

`http://patches.dpkg.org`



patches.dpkg.org/project/dpkg/llist/

Free Content

passing

Show patches with: State - Action Required | Archived - No | 1030 patches

Patch	Series	A/R/T	S/W/F	Date	Submitter	Delegate	State
[4,54:54] examples/exception_path: check status of getting ethdev info	ethdev: change rte_eth_dev_info_get() return value to int	---	1 - 0	2019-09-12	Andrew Rybchenko	fruz	New

How can I be so bad at everything I try and still be so great

Sometimes not everything passes

[v4,01/54] ethdev: remove redundant device in

Message ID 1568306586-27831-2-git-send-email-arybchenko@solarflare.com
State New
Delegated to: Ferruh Yigit
Headers [show](#)
Series ethdev: change rte_eth_dev_info_get() return value to int
Related [show](#)

Checks

Context	Check	Description
ci/Intel-compilation	fail	Compilation issues
ci/Intel-Performance	fail	Performance Testing issues
ci/iol-dpdk_compile	success	Compile Testing PASS
ci/iol-dpdk_compile_spdk	success	Compile Testing PASS
ci/iol-dpdk_compile_ovs	success	Compile Testing PASS
ci/checkpatch	success	coding style OK

Test my shiny metal patch

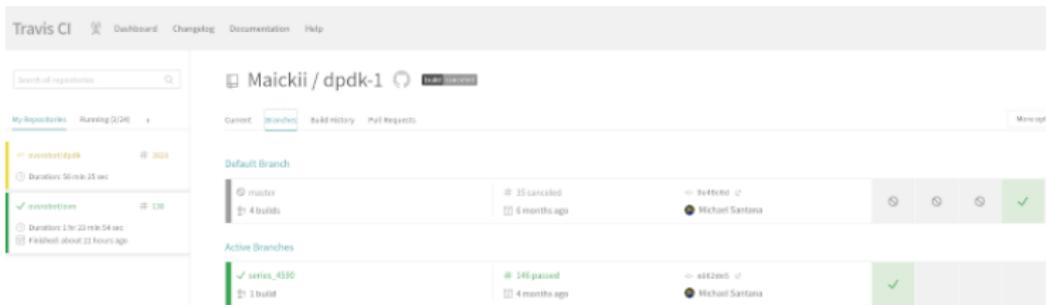
How can a developer get some of this right

- It's great that these safeguards exist
- Better to get it right on the first try
- You can still be 'lazy' though

GitHub + Travis

- Sign up to github
- Link it to travis-ci
- Push your changes
- Profit!

Thanks for your cooperation.



The screenshot shows the Travis CI dashboard for the repository `Maickii / dpdk-1`. The interface includes a navigation bar with links for Dashboard, Changelog, Documentation, and Help. A search bar for repositories is located at the top left. On the left sidebar, there is a section for 'My Repositories' with a 'Running (2/4)' indicator, listing two repositories: `eventlet-dpdk` (with 2024 builds) and `eventlet-tran` (with 138 builds). The main content area displays the repository name and tabs for 'Current', 'branches', 'Build History', and 'Pull Requests'. Below this, there are two sections: 'Default Branch' and 'Active Branches'. The 'Default Branch' section shows the `master` branch with 35 canceled builds, 4 builds in progress, and a last build 6 months ago by Michael Santana. The 'Active Branches' section shows the `series_4330` branch with 146 passed builds and 1 build in progress, with a last build 4 months ago by Michael Santana.

Travis CI | Dashboard | Changelog | Documentation | Help

Search all repositories

My Repositories | Running (2/4)

- eventlet-dpdk | 2024
- eventlet-tran | 138

Maickii / dpdk-1

Current | branches | Build History | Pull Requests

Default Branch

- master | 35 canceled | 4 builds | 6 months ago | Michael Santana

Active Branches

- series_4330 | 146 passed | 1 build | 4 months ago | Michael Santana

sys_stv - does not compute

What It does

- Build code
- Intel specific
- Various compiler and OS configurations

Table: SYS-STV Build Matrix sample

os	Makefile gcc	Makefile clang	...	Meson gcc/clang	Docs pdf/html
RHEL76-64	pass		...		
CENTOS76-64	pass	pass	...		
UB1804-64	pass	pass	...	pass	pass
UB1604-32	pass		...	pass	
...

Red Hat Robot - scaring the life out of you

What it does

- Push a series to a special branch
- Monitors travis-ci run
- Discards all the data and runs into walls

No reports?

- Need to fix some of the sporadic failures

UNH IOL

Overview

- Neutral 3rd party
- Hosts setups from Intel, MLX, Broadcom, NXP
- Dedicated staff (thanks, Jeremy!)

Infra

- Traffic generators, and devices under test
- Dashboard! <https://lab.dpdk.org/results/dashboard/>
- SPDK smoke tests
- OvS perf tests https://github.com/chaudron/ovs_perf/

Perf Tests

- Tuning difficulties (baremetal v. virt, hw, sw, fw combinations)
- DUT tuning vs Traffic Gen tuning

IOL Screenshot

http://lab.dpdk.org

DPDK CI Dashboard Patch sets Tarballs Stats CI Status About

Log in

Home / Tarballs / Tarball

Tarball 6130

Tarball Info dpdk (f991c135bbe365afd34fe8f082a9cfc92e1d2fa4)

Date created Sept. 12, 2019, 9:46 p.m.

Tarball [dpdk.tar.gz](#)

Test Results Possible Regression



ovs_perf: 3 passed, 2 failed

Ubuntu 18.04 VM

Configuration Information

Kernel linux 4.15.0-generic

Compiler gcc 7.4

[dpdk_compile](#)

Directive 1 - Serve the public trust

Get involved

- Most of the steps are stored in `.ci/` subdir
- Makes builds, runs unit tests
- Simple scripts

What still remains

- Reporting from the RH robot
- aarch64 unit tests (utilize `qemu-user`)
- Maybe ppc build
- Code coverage reporting (to identify gaps)
- Other test suites

Beyond Travis - GitLab, Actions, Cirrus, AppVeyor

Other public automation technologies exist

- Cirrus supports Windows and FreeBSD testing
- GitLab can run in a 'hybrid' mode
- Actions is new from Github (maybe for better pull request?)

Build your own

- Everything doable with patchwork APIs
- <https://github.com/orgcandman/pw-ci> - For monitoring patchwork
- <http://git.dpdk.org/tools/dpdk-ci/> - For applying patches and sending reports

Questions