



# Getting Code Upstream into DPDK

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# Getting Code Upstream into DPDK



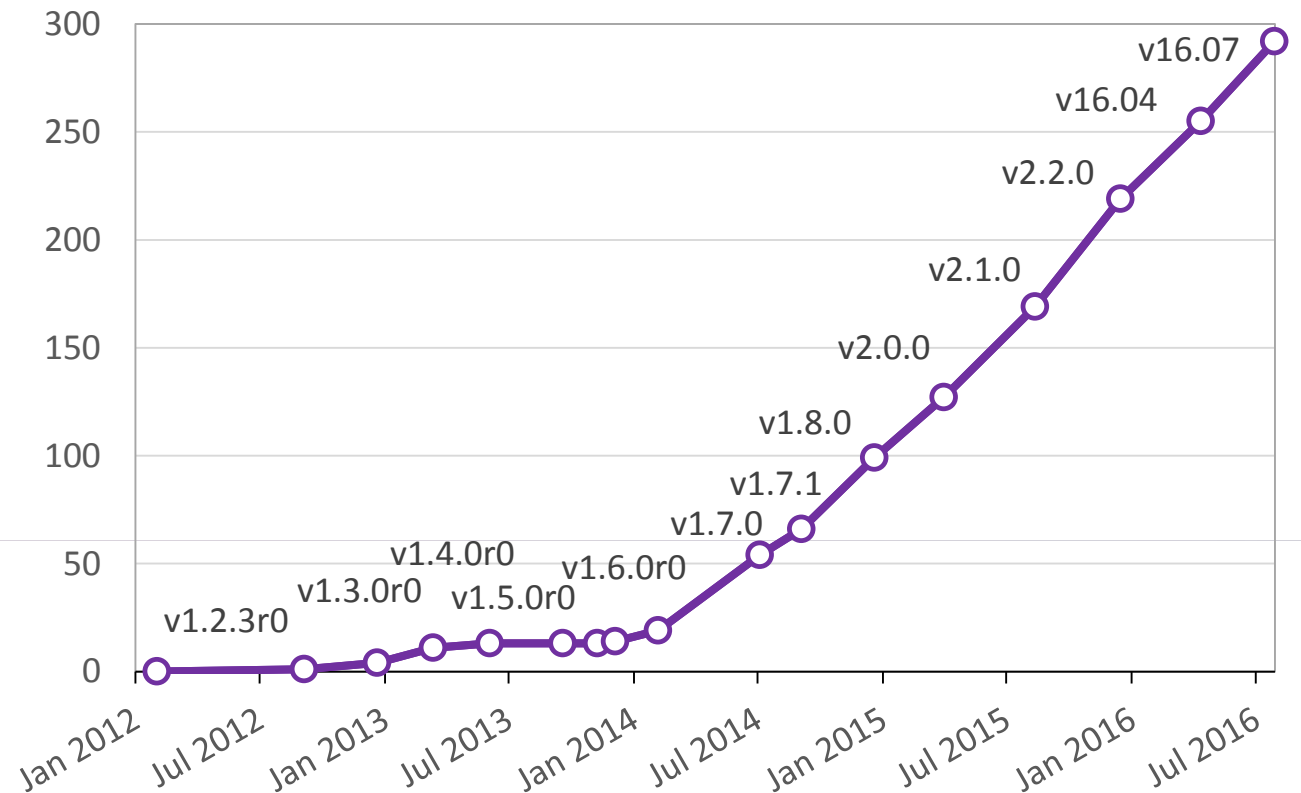
- ▶ Contributors to DPDK
  - ▶ The DPDK community
  - ▶ Lifecycle of a patch
  - ▶ DPDK ecosystem
-

# Contributors to DPDK



- ▶ ~ 300 unique contributors to DPDK
- ▶ ~ 100 unique domains
- ▶ ~ 40 new contributors each release
- ▶ ~ 800 merged patches per release

Total number of Unique DPDK Contributors over time



# Contributors by Domain



6wind.com  
akamai.com  
alibaba-inc.com  
allegro-packets.com  
amazon.com  
andern.org  
an.kaist.ac.kr  
anritsu.com  
arbor.net  
arraynetworks.com.cn  
asaltech.com  
awakenetworks.com  
bigswitch.com  
bisdn.de  
bk.ru  
broadcom.com  
brocade.com  
canonical.com  
caviumnetworks.com

cesnet.cz  
chelsio.com  
cisco.com  
cloudius-systems.com  
cn.ibm.com  
coriant.com  
cs.cmu.edu  
ctbri.com.cn  
ct.jp.nec.com  
ecotelecom.ru  
elyzion.net  
emutex.com  
enea.com  
ericsson.com  
ezchip.com  
freescale.com  
gmail.com  
harmonicinc.com  
huawei.com

igel.co.jp  
infiniteio.com  
infradead.org  
intel.com  
inventum.net  
kernelim.com  
lightcyber.com  
linaro.org  
linux.vnet.ibm.com  
live.com  
mail.ustc.edu.cn  
mellanox.com  
mhcomputing.net  
midokura.com  
mirantis.com  
mvista.com  
neclab.eu  
netinsight.net  
netronome.com

networkplumber.org  
nfware.com  
nodalink.com  
nofutznetworks.com  
nokia.com  
nsn.com  
nxp.com  
nyansa.com  
oracle.com  
outscale.com  
overturenetworks.com  
prolexic.com  
qlogic.com  
qq.com  
radisys.com  
redhat.com  
rehivetech.com  
ruckuswireless.com  
samsung.com

sandvine.com  
schaman.hu  
semihalf.com  
shieldxnetworks.com  
sinogrid.com  
sts.kz  
studenti.polito.it  
suse.de  
tilera.com  
triplefau.lt  
trust-in-soft.com  
tuxdriver.com  
vault24.org  
vmware.com  
vp.pl  
vyatta.com  
windriver.com

**Your Name Here**

# The DPDK Community



▶ Website: <http://dpdk.org/>

▶ Mailing lists:

▶ [dev@dpdk.org](mailto:dev@dpdk.org)

▶ [users@dpdk.org](mailto:users@dpdk.org)

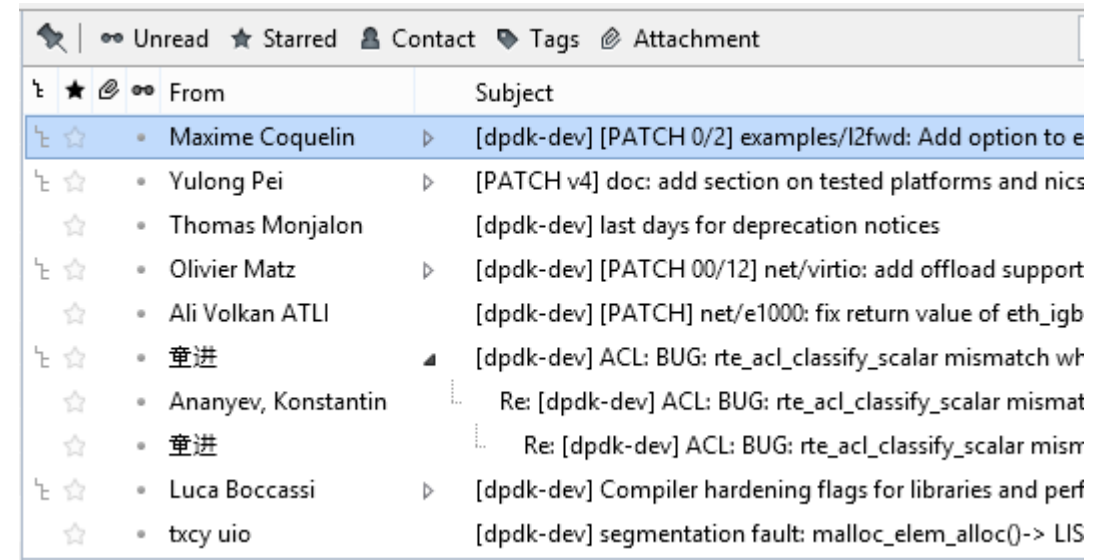
▶ [announce@dpdk.org](mailto:announce@dpdk.org)

▶ [Others](#)

▶ Documentation: <http://dpdk.org/doc>

▶ Patchwork - get/track patches: <http://dpdk.org/dev/patchwork/project/dpdk/list/>

▶ Coverity - code analysis: <http://scan.coverity.com/projects/dpdk-data-plane-development-kit>



# Contribution workflow



- ▶ Workflow is like the Linux kernel model
- ▶ Central git repository
- ▶ Several subtrees and maintainers
- ▶ Patches submitted via email
- ▶ Patches reviewed on the mailing list
- ▶ Patches are acked/nacked (+/- 1)
- ▶ Patches are merged to subtrees and then master
- ▶ Contributions become part of the next release

```
* 182d91f cfgfile: fix return value comment
* 9199cd6 lpm6: fix possible garbage in lookup
* 6226aa5 lpm6: fix missing header dependency
* 7cc3f2c lpm: fix freeing in compatibility mod
* 62aaf55 ip_frag: fix double free of chained r
* 31ca33f mem: fix freeing of memzone used by
* d89a58d kni: support chained mbufs
* 166605b kni: keep ethernet MAC address when
* 331c617 app/testpmd: fix string overrun in en
```

# Contribution workflow



## Clone

- `git clone http://dpdk.org/git/dpdk`

## Add

- `git add lib/*.c`
- `git commit -s`

## Send

- `git format-patch -2 -v1`
- `git send-email --to dev@dpdk.org v1-0001-lib-some-fix.patch`

## Review

- Patch is reviewed. Send v2, v3 until complete
- Merged to subtree or master

# Navigating the Upstream rapids

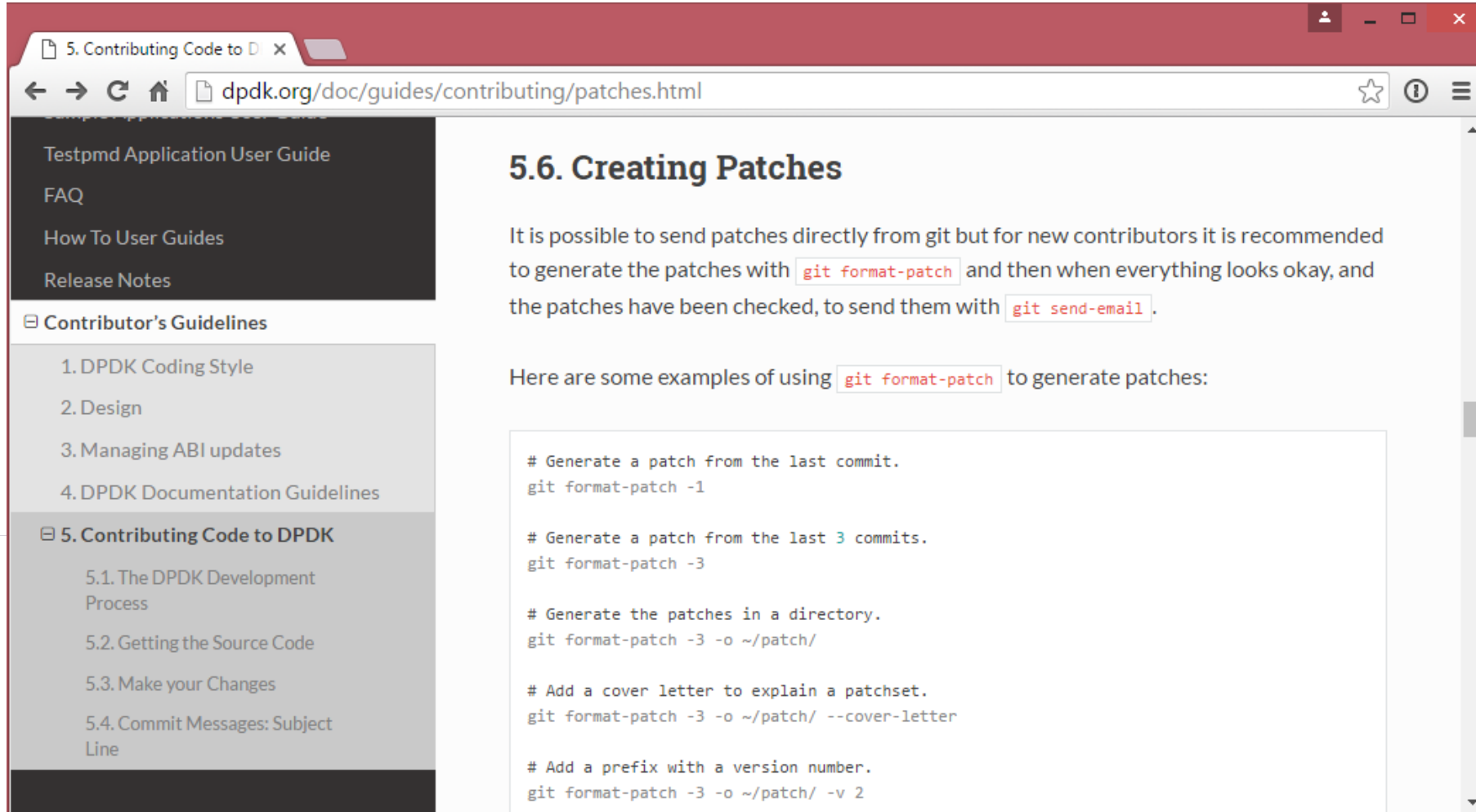


- ▶ Engage with the community early
- ▶ Send an RFC for large changes
- ▶ Follow the [coding guidelines](#)
  - ▶ Linux kernel like
  - ▶ Use `scripts/checkpatches.sh`
- ▶ Follow the [contributor guidelines](#)
  - ▶ Use `scripts/check-git-log.sh`
- ▶ Be polite, be patient, be persistent
- ▶ Review other patches



By Brian W. Schaller (ArtLibre License)





The screenshot shows a web browser window with the address bar displaying `dpxk.org/doc/guides/contributing/patches.html`. The page content is as follows:

## 5.6. Creating Patches

It is possible to send patches directly from git but for new contributors it is recommended to generate the patches with `git format-patch` and then when everything looks okay, and the patches have been checked, to send them with `git send-email`.

Here are some examples of using `git format-patch` to generate patches:

```
# Generate a patch from the last commit.
git format-patch -1

# Generate a patch from the last 3 commits.
git format-patch -3

# Generate the patches in a directory.
git format-patch -3 -o ~/patch/

# Add a cover letter to explain a patchset.
git format-patch -3 -o ~/patch/ --cover-letter

# Add a prefix with a version number.
git format-patch -3 -o ~/patch/ -v 2
```

The left sidebar of the browser shows a navigation menu with the following items:

- Testpmd Application User Guide
- FAQ
- How To User Guides
- Release Notes
- Contributor's Guidelines
  - 1. DPDK Coding Style
  - 2. Design
  - 3. Managing ABI updates
  - 4. DPDK Documentation Guidelines
  - 5. Contributing Code to DPDK
    - 5.1. The DPDK Development Process
    - 5.2. Getting the Source Code
    - 5.3. Make your Changes
    - 5.4. Commit Messages: Subject Line

# DPDK Ecosystem - Patchwork



DPDK - Patchwork

dpkg.org/dev/patchwork/project/dpdk/list/

## Patchwork DPDK

login  
register  
mail settings

Project: dpdk : [patches](#) : [project info](#) [about](#)

### Incoming patches

< Previous 1 2 3 Next >

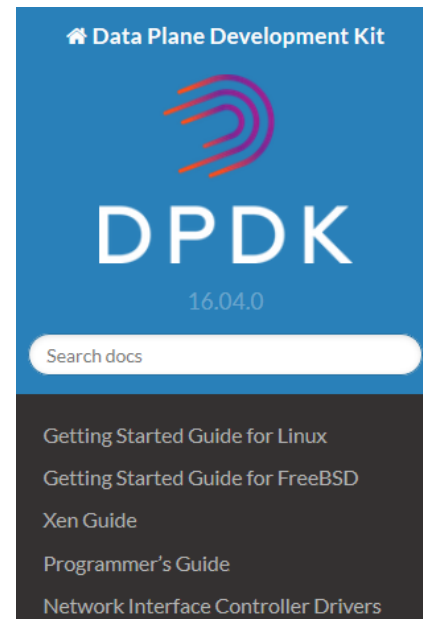
Filters: State = Action Required | Archived = No

Patch	Date	Submitter	Delegate	State
<a href="#">[dpdk-dev,v3] net/mlx5: fix possible NULL deref in Rx path</a>	2016-08-02	<a href="#">Sagi Grimberg</a>		New
<a href="#">[dpdk-dev,RFC] scripts: make load-devel-config not to appear as executable</a>	2016-08-02	<a href="#">Christian Ehrhardt</a>		New
<a href="#">[dpdk-dev,v2] net/mlx5: Fix possible NULL deref in RX path</a>	2016-08-02	<a href="#">Sagi Grimberg</a>		New
<a href="#">[dpdk-dev] net/mlx5: Fix possible NULL deref in RX path</a>	2016-08-02	<a href="#">Sagi Grimberg</a>		New
<a href="#">[dpdk-dev] qat: change the session structure to be variable sized</a>	2016-08-02	<a href="#">John Griffin</a>		New
<a href="#">[dpdk-dev] i40e: enable i40e pmd on ARM platform</a>	2016-08-02	<a href="#">Jianbo Liu</a>		New
<a href="#">[dpdk-dev,v2] examples: fix unusual-interpretter</a>	2016-08-02	<a href="#">Christian Ehrhardt</a>		New
<a href="#">[dpdk-dev,v2] lpm: remove redundant check when adding lpm rule</a>	2016-08-02	<a href="#">wei dai</a>		New
<a href="#">[dpdk-dev,4/4] net/bonding: fix configuration of LACP slaves</a>	2016-08-01	<a href="#">Robert Sanford</a>		New
<a href="#">[dpdk-dev,3/4] net/bonding: another fix to LACP mempool size</a>	2016-08-01	<a href="#">Robert Sanford</a>		New
<a href="#">[dpdk-dev,2/4] mempool: make cache flush threshold macro public</a>	2016-08-01	<a href="#">Robert Sanford</a>		New
<a href="#">[dpdk-dev,1/4] testpmd: fix LACP ports to work with idle links</a>	2016-08-01	<a href="#">Robert Sanford</a>		New
<a href="#">[dpdk-dev] lpm: remove redundant check when adding lpm rule</a>	2016-08-01	<a href="#">wei dai</a>		New
<a href="#">[dpdk-dev] mbuf: remove deprecated internal function</a>	2016-08-01	<a href="#">Thomas Monjalon</a>		New
<a href="#">[dpdk-dev] examples: fix unusual-interpretter</a>	2016-08-01	<a href="#">Christian Ehrhardt</a>		New

# DPDK Ecosystem - Documentation



- ▶ All documentation is in the Git source tree
- ▶ API Documentation
  - ▶ Library header files
  - ▶ Doxygen
- ▶ User guides
  - ▶ RST - Text mark-up format
  - ▶ Python Sphinx to build html/pdf
- ▶ Patches to documentation is and easy way to start contributing to DPDK



[Docs](#) » DPDK documentation

## DPDK documentation

- [Getting Started Guide for Linux](#)
- [Getting Started Guide for FreeBSD](#)
- [Xen Guide](#)
- [Programmer's Guide](#)
- [Network Interface Controller Drivers](#)
- [Crypto Device Drivers](#)
- [Sample Applications User Guide](#)
- [Testpmd Application User Guide](#)
- [FAQ](#)
- [Release Notes](#)
- [Contributor's Guidelines](#)

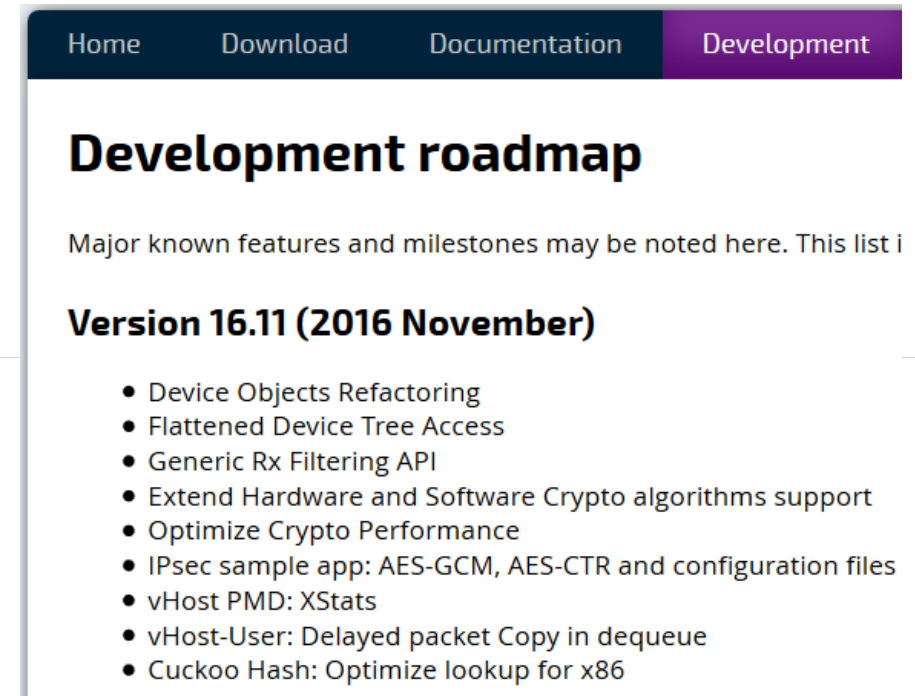
- ▶ Important to maintain ABI compatibility between releases for users and downstream consumers:
  - ▶ Red Hat, Ubuntu, SUSE, FreeBSD, etc.
  - ▶ Open vSwitch, OpenStack, etc.
- ▶ Stable releases
  - ▶ Back ported fixes for 1 release - starting with 16.07
- ▶ Long Term Support (LTS)
  - ▶ 2 years support
  - ▶ Targeted for 16.11

- ▶ In release 16.04 DPDK moved to Ubuntu style YY.MM release number
- ▶ Release cadence moving from 3 releases per year to 4 releases per year - in 2017:

- ▶ 2.2, 16.07, 16.11
- ▶ 17.02, 17.05, 17.08, 17.11
- ▶ 18.02, 18.05, 18.08, 18.11

- ▶ DPDK Roadmap lays out proposed features for next 2 releases:

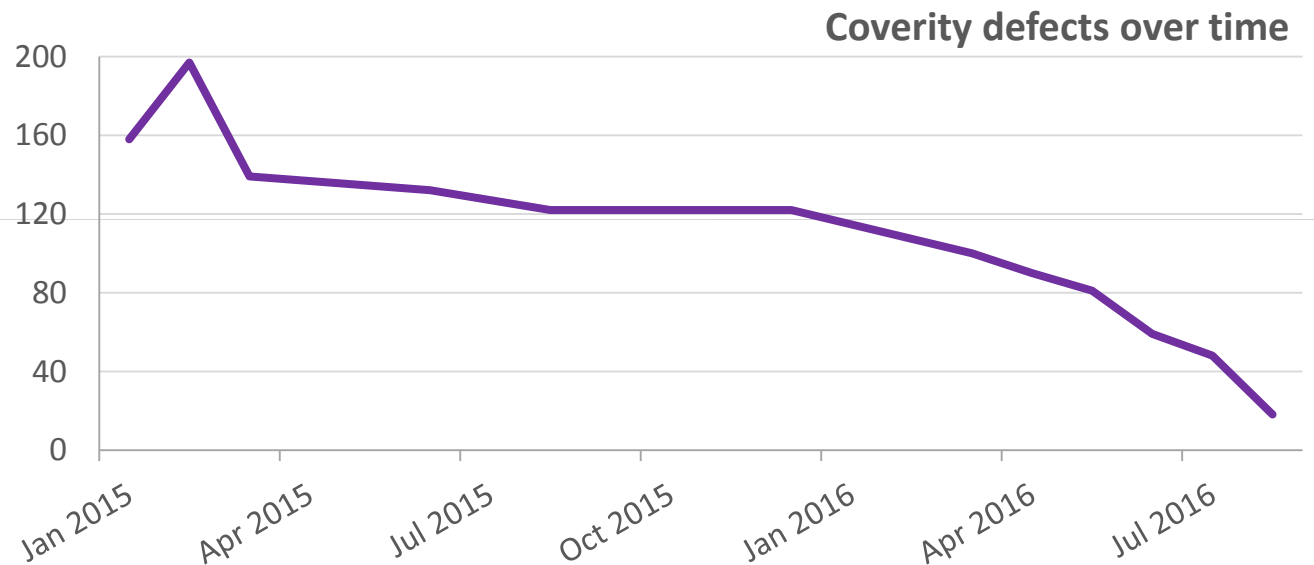
<http://dpdk.org/dev/roadmap>

A screenshot of the DPDK website's "Development" page. The navigation bar includes "Home", "Download", "Documentation", and "Development" (highlighted in purple). The main heading is "Development roadmap". Below it, a paragraph states: "Major known features and milestones may be noted here. This list i". Under the heading "Version 16.11 (2016 November)", there is a bulleted list of features: Device Objects Refactoring, Flattened Device Tree Access, Generic Rx Filtering API, Extend Hardware and Software Crypto algorithms support, Optimize Crypto Performance, IPsec sample app: AES-GCM, AES-CTR and configuration files, vHost PMD: XStats, vHost-User: Delayed packet Copy in dequeue, and Cuckoo Hash: Optimize lookup for x86.

# DPDK Ecosystem - Testing



- ▶ Majority of the public testing is done by Intel
- ▶ Bugs and regressions reports by the mailing list
- ▶ Hoping to move to external Continuous Integration and Bug Tracking in 2017
- ▶ Static code analysis via public Coverity Scan



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Questions?

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