DPDK COMMUNITY SURVEY
AUGUST 2016

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DPDK US SUMMIT
SAN JOSE
• **First Community-wide Mailing List Survey Conducted**

• **Survey**
  - **Opened:** July 28th 2016, **Closed:** August 4th 2016
  - 34 Questions, Several Multi-Select
  - 4 Main Sections: (1) Usage, (2) Roadmap & Performance, (3) Submissions & Support, (4) Tools & Documentation

• **Participants**
  - DPDK Developers, Users, and Announce Mailing Lists
  - **149 Participants**, with an **85% Completion Rate**
  - ~40% of Participants Contributed Patches to a Recent Release
AGENDA

• EXECUTIVE SUMMARY
• SURVEY RESULTS
• KEY TAKEAWAYS
• NEXT STEPS
The Good

- 96% of participants said that DPDK was meeting their requirements
- Roadmap communications
- Patch submissions process
- Release cadence
- Engaged community 😊

The Improvements

- Release support (stable releases, LTS)
- Documentation – certain aspects
- No specific hotspots but performance bottlenecks seen in certain areas
- Need for a continuous integration and test environment
**Usage**

DPDK 16.04 is the most used release

![Graph showing usage percentages](image)

- Lack of stability is the main reason cited for not upgrading to newer versions
- 70% of participants are using DPDK with Virtualisation or Containers.
- Virtualisation usage is split evenly between SR-IOV and vhost/virtio.
The most commonly used parts are:

- IXGBE
- IGB
- I40e
- Virtio
- vHost
- VMXNET3
- PCAP
- MLX4

Top 3 CPU architecture used:
1. X86
2. ARMv8
3. Power8

Top 3 other open-source projects used with DPDK:
1. Open vSwitch
2. OpenStack
3. Hyperscan
DPDK will have four releases in 2017.

69% believe this is the right release cadence.

67% are aware of the DPDK roadmap.

82% believe it’s communicated at the right time.

68% are satisfied with the level of detail provided on the roadmap.

Areas of DPDK which need to be improved:

Top other areas for Improvement mentioned for the DPDK roadmap were:

1. Release support
2. Documentation updates
3. Testing
4. KNI
5. Memory
75% of participants rated performance as being very important to them.

30% pointed out possible performance bottlenecks in DPDK.

37% of participants had contributed to a recent DPDK release (since 2.1).

Of those, 75% are satisfied with the patch submission process.

Suggested Improvement Areas:
### Importance of Long Term Support (2 years)

<table>
<thead>
<tr>
<th>Importance</th>
<th>Not Important</th>
<th>Slightly Important</th>
<th>Neutral</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8.13% (10)</td>
<td>6.50% (8)</td>
<td>21.95%</td>
<td>40.65% (50)</td>
<td>22.70% (28)</td>
</tr>
</tbody>
</table>

63% of participants are aware of the Automated Test Suite...but of those only 40% have plans to use it in future.

### Importance of having a stable release (back-ported fixes for each release cycle)

<table>
<thead>
<tr>
<th>Importance</th>
<th>Not Important</th>
<th>Slightly Important</th>
<th>Neutral</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7.28% (9)</td>
<td>8.06% (10)</td>
<td>16.13%</td>
<td>39.52% (40)</td>
<td>26.03% (36)</td>
</tr>
</tbody>
</table>

69% of participants run the DPDK Unit Test Framework.

### Importance of ABI compatibility

<table>
<thead>
<tr>
<th>Importance</th>
<th>Not Important</th>
<th>Slightly Important</th>
<th>Neutral</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>23.53% (28)</td>
<td>10.92% (13)</td>
<td>26.89%</td>
<td>24.37% (20)</td>
<td>14.29% (17)</td>
</tr>
</tbody>
</table>

40% of participants have added tests to it.

### Importance of a Continuous Integration & Test Environment

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<thead>
<tr>
<th>Importance</th>
<th>Not Important</th>
<th>Slightly Important</th>
<th>Neutral</th>
<th>Important</th>
<th>Very Important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.64% (2)</td>
<td>3.28% (4)</td>
<td>18.85%</td>
<td>41.80% (51)</td>
<td>34.43% (42)</td>
</tr>
</tbody>
</table>
85% of participants had **not contributed** to the documentation:

**Quality of DPDK Documentation**

<table>
<thead>
<tr>
<th>Poor</th>
<th>Below Average</th>
<th>Average</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.61%</td>
<td>5.65%</td>
<td>37.10%</td>
<td>51.61%</td>
<td>4.03%</td>
</tr>
</tbody>
</table>

The **most used parts of DPDK documentation** are:

Main Improvement Suggestions:

- Removal of **outdated** information – particularly in Programmers Guide

- **A way to go back in version history** (e.g. API documentation for previous versions)

- More detailed information on the PMD’s and **performance tuning**

- ‘**DPDK for Dummies**’ – add more high-level overview diagrams, etc.
OVERALL...IS DPDK MEETING YOUR REQUIREMENTS?

<table>
<thead>
<tr>
<th>Choice</th>
<th>Response %</th>
<th>Response #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>96%</td>
<td>119</td>
</tr>
<tr>
<td>No</td>
<td>4%</td>
<td>5</td>
</tr>
</tbody>
</table>
The Good
• Show of hands as to who responded to the survey?
• Do the survey results resonate?
• Are you surprised by any of the results?
• Is there something you expected to see that didn’t appear?
• Any general comments/feedback?

Discussion

The Improvements

• Release cadence
• Engaged community 😊

Need for a Continuous integration and test environment

Network Platforms Group
NEXT STEPS & HELP NEEDED

- Collate and release the results to the open-source community
- Hold a community call to review the main findings
- Further discussion with the DPDK development community @ DPDK User-space event in Dublin in October ’16
- Please sign up to one of the mailing lists [HTTP://DPDK.ORG/ML](http://dpdk.org/ml)
- Next survey will be sent in 6 months – PLEASE RESPOND!

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