



# DPDK

DATA PLANE DEVELOPMENT KIT

## DPDK Community Update

**Jim St. Leger**  
**Software Product Line Manager**  
**Intel Corporation**

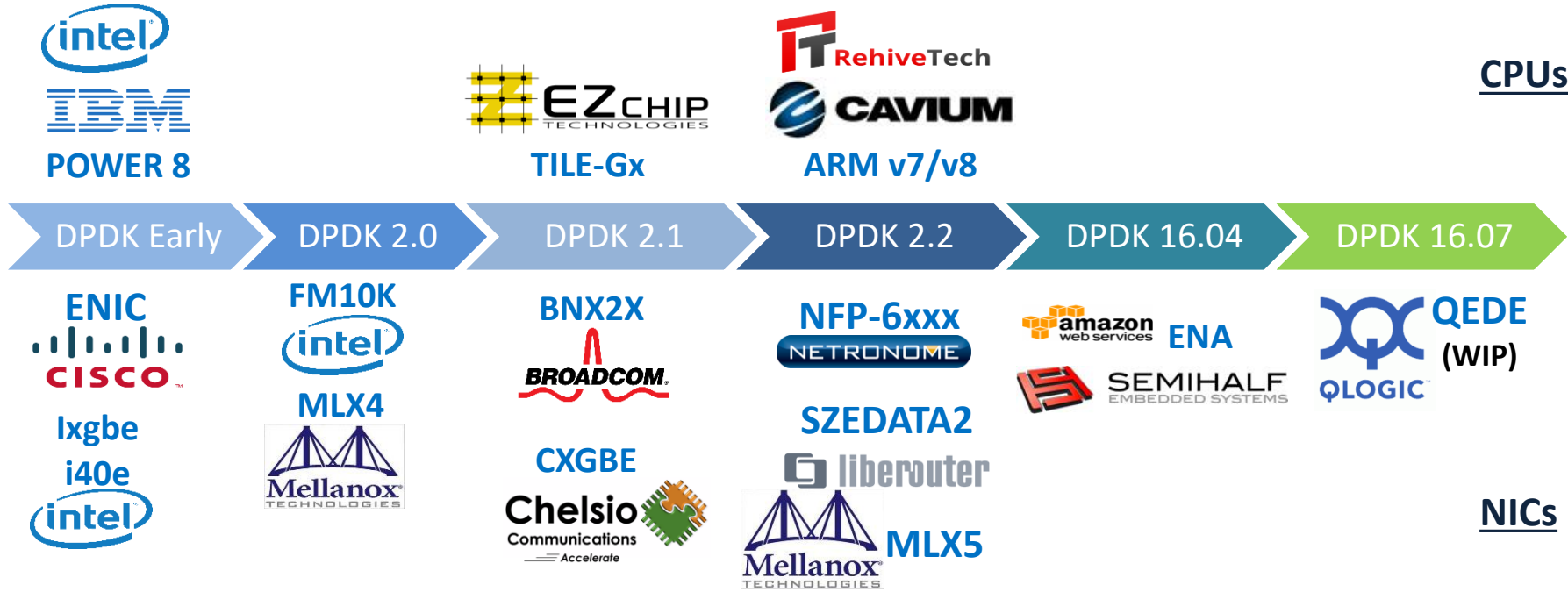


# DPDK Open Source Project

Packet I/O acceleration on Intel Arch, ARM & Power8

|                         |         |
|-------------------------|---------|
| Number of Commits:      | >4,400  |
| Number of Contributors: | ~250    |
| Lines of Code:          | 1.6M    |
| Combined Person Years:  | 465     |
| Community Investment:   | \$25.6M |

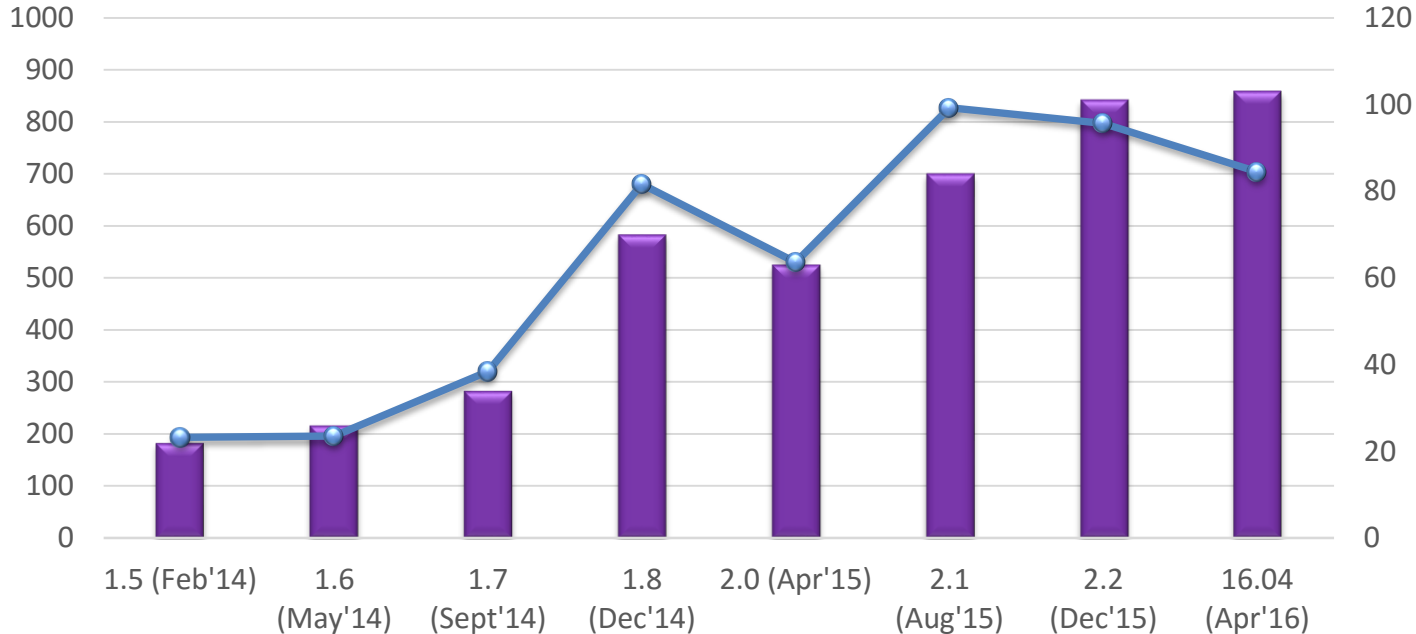
# A Truly Open Community



# Community Growth

Commits

Contributors



**~30%  
from PRC**

<http://dpdk.org/browse/dpdk/refs/>

Total Contributors
  Total Commits

# Active Community Contributors\*













CANONICAL



\* Based on patches submitted for 16.04 release

# Your Path to Community Leadership

| Name              | Company   | 12 Month Commits | All Time Commits | First Commit   | Last Commit    |
|-------------------|---|------------------|------------------|----------------|----------------|
| Wenzhuo Lu        |  | 163              | 163              | 11 months      | 20 days        |
| Thomas Monjalon   |  | 156              | 340              | almost 4 years | 8 days         |
| Helin Zhang       |  | 117              | 202              | almost 2 years | about 2 months |
| Stephen Hemminger |  | 112              | 209              | almost 3 years | 28 days        |
| Jingjing Wu       |  | 108              | 177              | almost 2 years | 23 days        |
| Pablo de Lara     |  | 101              | 150              | almost 2 years | 17 days        |
| John McNamara     |  | 59               | 74               | about 1 year   | 16 days        |
| Bernard Iremonger |  | 57               | 68               | over 1 year    | about 1 month  |
| Adrien Mazarguil  |  | 52               | 67               | over 3 years   | 21 days        |
| Yuanhan Liu       |  | 51               | 51               | 8 months       | 22 days        |



- ▶ Top Committer
- ▶ 11 Months

**Wenzhuo Lu**  
陆文卓

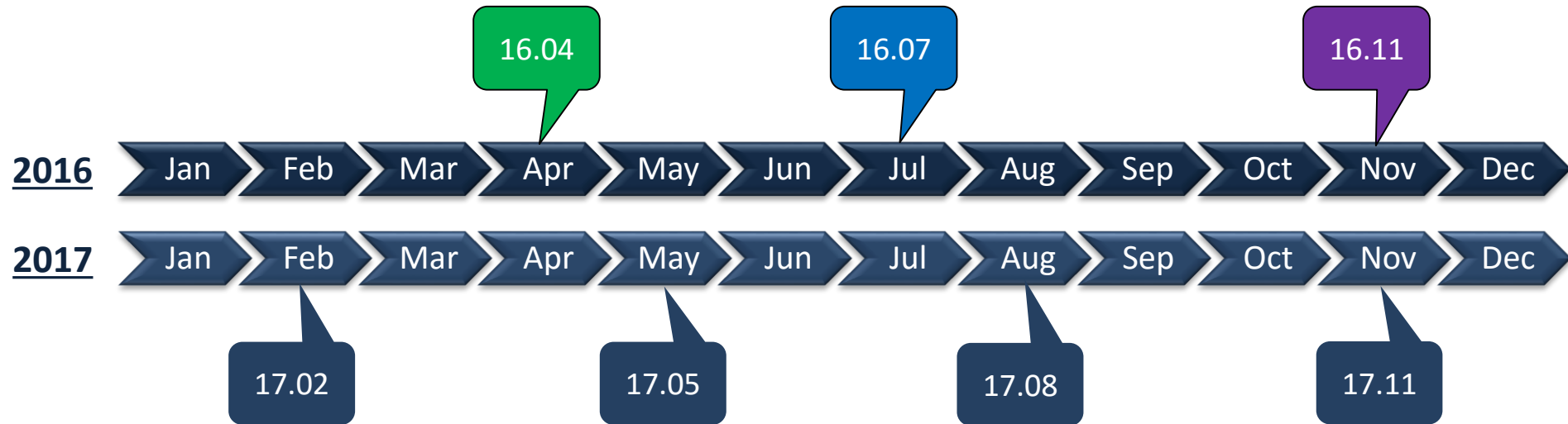


- ▶ Maintainer
- ▶ 8 Months

**Yuanhan Liu**  
刘远汉

# Your Future Opportunity

DPDK releases use the Ubuntu numbering scheme of YY.MM.  
Frequency and dates of releases will be fixed from 2017 onwards.



# How to contribute

- Producer vs Consumer (Lead or follow)
- Start out small; establish creditability
- Clean code, get maintainer attention
  - Ping if lack of comments
  - Be Patient, Follow up, Revisions
- Complex change requires design discussion
- Many revisions are expected
- Join community calls, IRC, Summits



*Please Get Involved in DPDK.org*





# DPDK

DATA PLANE DEVELOPMENT KIT

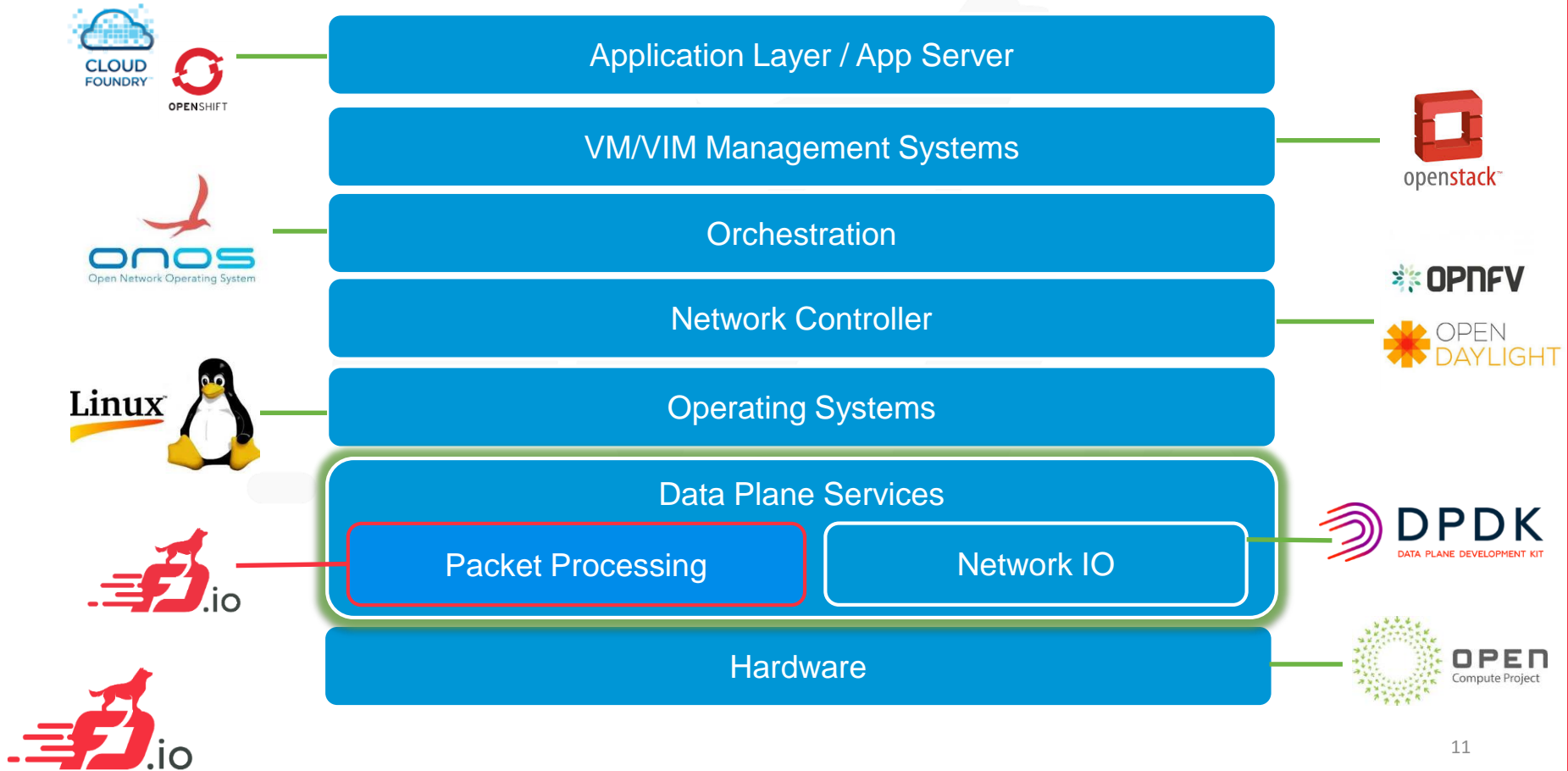


# FAST DATA

## Open Source Data Plane Packet Processing Project

**Jim St. Leger**  
Software Marketing Manager  
**Intel**  
@JimStLeger

# Open Networking Ecosystem Overview



# Fast Data Project Objectives

Create a platform that enables Data Plane Services that are:

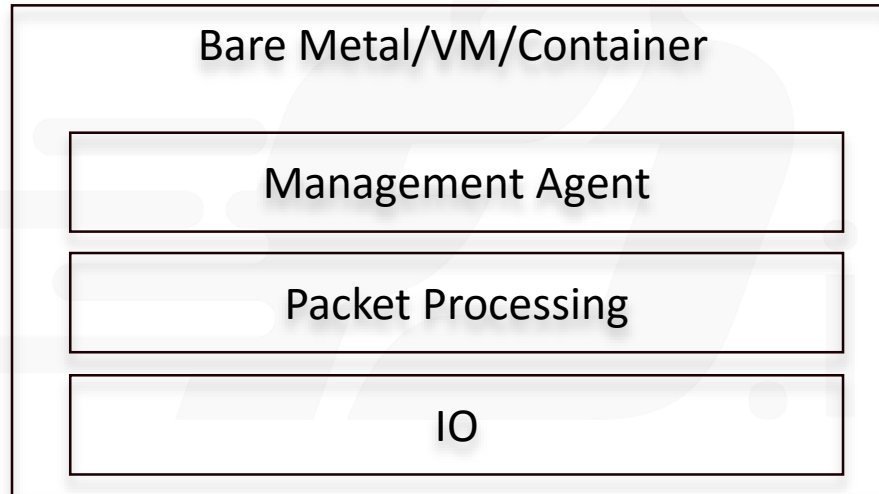
1. High performant
2. Modular and extensible
3. Open source
4. Interoperable
5. Multivendor

## The Fast Data Project (FD.io)

Relentlessly focused on data IO speed and efficiency for more flexible and scalable networks and storage.



# Fast Data Basics



Cisco's Vector Packet Processing (VPP)



# VPP Feature Summary

## IPv4/IPv6

14+ MPPS, single core  
Multimillion entry FIBs  
Source RPF  
Thousands of VRFs  
    Controlled cross-VRF  
lookups  
Multipath – ECMP and Unequal  
Cost  
Multiple million Classifiers –  
    Arbitrary N-tuple  
VLAN Support – Single/Double  
tag  
**Counters for everything**  
Mandatory Input Checks:  
    TTL expiration  
    header checksum  
    L2 length < IP length  
    ARP resolution/snooping  
    ARP proxy

## IPv4

GRE, MPLS-GRE, NSH-GRE,  
VXLAN  
IPSEC  
DHCP client/proxy  
CG NAT

## IPv6

Neighbor discovery  
Router Advertisement  
DHCPv6 Proxy  
L2TPv3  
Segment Routing  
MAP/LW46 – IPv4aaS  
iOAM

## MPLS

MPLS-o-Ethernet –  
    Deep label stacks  
supported

## L2

VLAN Support  
    Single/ Double tag  
    L2 forwarding with  
EFP/BridgeDomain concepts  
VTR – push/pop/Translate  
(1:1,1:2, 2:1,2:2)  
Mac Learning – default limit of  
50k addresses  
Bridging – Split-horizon group  
support/EFP Filtering  
Proxy Arp  
Arp termination  
IRB – BVI Support with  
RouterMac assignment  
Flooding  
Input ACLs  
Interface cross-connect



# FD.io Project Membership



Platinum



Gold



Silver



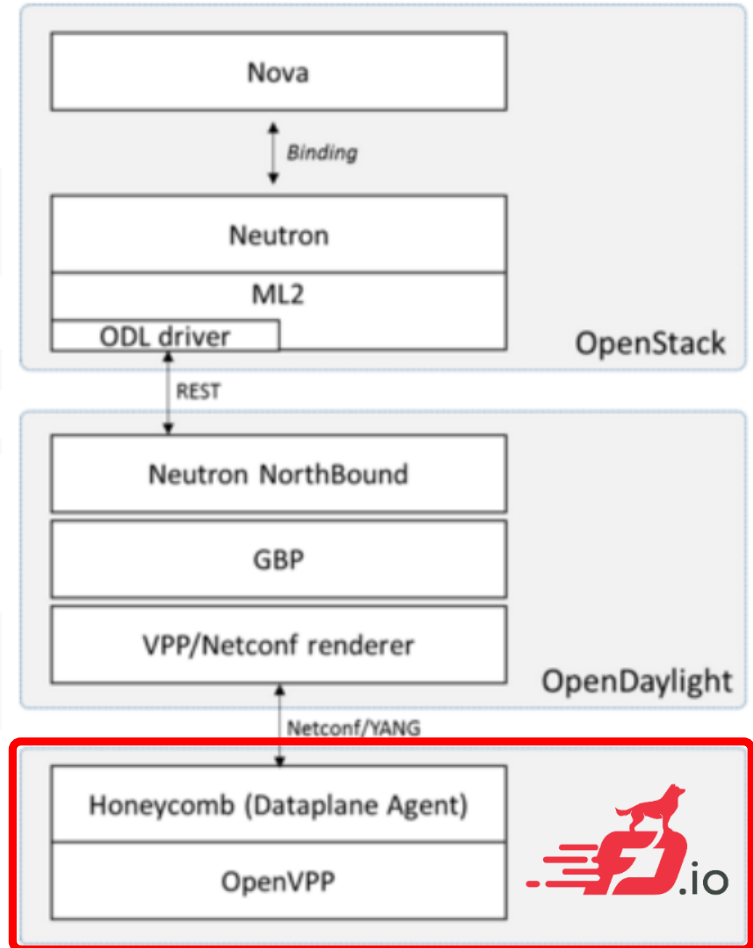
MESOSPHERE



FD.io membership status as of 11 Feb 2016

# FD.io Projects

- Vector Packet Processing (VPP)
- Continuous System Integration and Testing (CSIT)
- Honeycomb
- NSH-based Service Function Chaining (NSH SFC)
- Overlay Network Engine (ONE)



\*Not yet TSC-approved

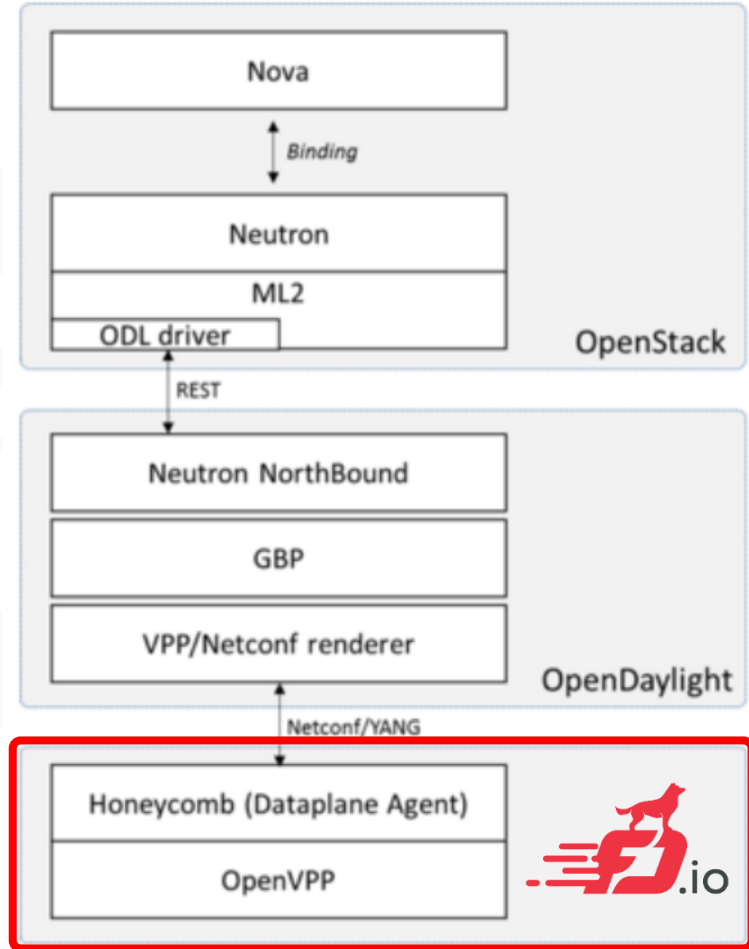
\*\*OPENFW project

- Transport Layer Development



# FD.io Projects

- ➔ • Vector Packet Processing (VPP)
- ➔ • Continuous System Integration and Testing (CSIT)
- ➔ • Honeycomb
- ➔ • NSH-based Service Function Chaining (NSH SFC)
- ➔ • Overlay Network Engine (ONE)



\*Not yet TSC-approved  
\*\*OPENFLOW project



• Transport Layer Development

# Call For Action

- Download the code: <https://fd.io/community>
- Test the code yourself
- Subscribe to the developer lists
- Participate in the discussions
- Contribute to the project





Thank You