

Welcome!

**DXDD**

DATAPLANE ACCELERATION  
DEVELOPER DAY

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# Who is Attending Today – Welcome!

ARM  
AT&T  
Barefoot Networks  
Broadcom  
Carnegie Mellon University  
Cisco  
Cloud Physics  
Dell  
Ericsson  
Earth Computing  
Fujitsu Labs  
FutureWei Tech

GENI Project Office at BBN  
Technologies  
Huawei  
Intel  
IXIA  
Nokia Nuage Networks  
Nokia  
NTT Communications  
Netskope  
Juniper  
Lenovo  
Open Networking Lab  
Oracle  
PlumGrid

Renesas Electronics  
Sergeant Laboratories Inc  
San Jose State University  
SS8  
University of California, Davis  
University of Edinburgh  
University of Luxembourg/SnT  
University of Massachusetts  
Lowell  
University of Texas at Austin  
Viavi Solutions  
VMware  
Xilinx

**58 Individuals from 7 Academia Institutions, 27 Companies & 3 Labs**

## High Growth Applications/Markets

- Telco Cloud NFV
- Public Cloud IaaS
- OpenStack Private Clouds

## Huge Benefits

- Free CPU cores for apps/revenues
- Higher performance to VM apps
- Delivery of new services rapidly
- Multi-tenancy and security
- In 4G/5G, Big Data, IoT

## Leading Edge Technologies

- OVS, vRouter acceleration
- Stateful Firewall acceleration
- VNF acceleration
- VPP/FDIO

## Innovation Velocity

- vSwitch/Router data paths evolving
- C, P4, eBPF programming models
- New & optimized VNFs

**Open-NFP is serving a critical R&D need for companies & academia**

8:30-9:00 am	Welcome/Open-NFP Update <i>Bapi Vinnakota, Sujal Das</i>
9:00-9:45 am	<b>Lecture 1:</b> SmartNIC Programming Models - Overview <i>Johann Tonsing</i>
9:45-10:30 am	<b>Lecture 2:</b> P4 and C Development Tool Chain <i>Behdad Besharat</i>
10:30-10:45 am	Break
10:45-11:30 am	<b>Lab 1:</b> The Basic P4 NFP NIC <i>Dirk van der Merwe</i>
11:30 am-12:15 pm	<b>Lab 2:</b> Telemetry and VNFs <i>Edwin Peer</i>
12:15-1:00 pm	Lunch
1:00-1:45 pm	<b>Lab 3:</b> P4/C Stateful Firewall
1:45-2:15 pm	<b>Sponsor Lecture:</b> Data Plane Acceleration at Terabit Speeds <i>Vladimir Gurevich</i>
2:15-3:00 pm	<b>Demo:</b> Transparent HW Acceleration Using eBPF <i>Nic Viljoen</i>
3:00-3:15 pm	Break
3:15-4:00 pm	<b>Lab 4:</b> OVS <i>John Hurley</i>
4:00-4:45 pm	Presentations: Academia Research Initiatives
4:45-5:00 pm	Conclusion/Raffle

We have a very tight schedule

- We welcome live discussion
- Please keep longer discussions for the breaks

All sessions will be available online after conference

Don't forget about the raffle at the end of the day 😊

Support and grow reusable research in accelerating dataplane network functions processing

Reduce/eliminate the cost and technology barriers to research in this space

- Technologies:
  - P4, SDN, OpenFlow, Open vSwitch (OVS) offload, eBPF
- Tools:
  - Discounted hardware, development tools, software, cloud access
- Community:
  - Website ([www.open-nfp.org](http://www.open-nfp.org)): learning & training materials, active Google group <https://groups.google.com/d/forum/open-nfp>, open project descriptions, code repository
- Learning/Education/Research support:
  - Regular seminar series/webinars, conferences, tutorials, research proposal support for proposals to the NSF and state agencies
  - Present applied reusable research

# Growth in the Last Year (Thank You)

When we started in Nov 2015

- Projects
  - 3 US universities
- Research tools
  - One hardware platform (Agilio 1x40)
- Content
  - P4 workshop content

One year later

- Projects
  - 16 Universities, 5 research institutes, 5 companies
  - US, Canada, Germany, The Netherlands, Israel, China
- Research tools
  - Four hardware platforms, simple purchase process, deep discount
  - SDK6
  - Remote access, Cloud access
  - Google group – 100+ researchers
- Content
  - Six webinars
  - Code on GitHub
  - P4 workshop content
- Other engagement
  - Supported (successful!) NSF proposal and Pennsylvania state proposal
  - Four P4 tutorial workshops

# Contact Us

Web: [www.open-nfp.org](http://www.open-nfp.org)

Google Group: <https://groups.google.com/d/forum/open-nfp>

Email: [info@open-nfp.org](mailto:info@open-nfp.org)

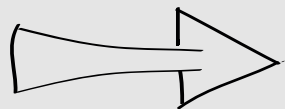
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Thank You!

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