# DPDK Summit India 2017

| TIME | TITLE | SPEAKER | ABSTRACT |
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| 8:00 – 8:45 | Registration | | |
| 8:45 – 9:00 | Introductions, Welcome and Agenda for the Day | Sujata Tibrewala | This is the first time DPDK summit is happening in India. This talk will provide a context and backdrop to the DPDK community and the DPDK summits and what the audience can get out of their experience during the day |
| 9:00 – 9:45 | DPDK Architecture and Roadmap | Kannan Babu Ramia, Deepak K Jain | This talk will explore the motivation behind the existence of DPDK, why and how it evolved into what it is today and how the future roadmap addresses the needs of the Industry |
| 9:45-10:05 | Supporting SoC devices in DPDK - Status Update | Hemant Agarwal, Shreyansh Jain | This talk is an extension of talk presented in Userspace Dublin 2016, where NXP presented a case for expanding DPDK towards non-standard (SoC) devices. That required a large number of fundamental changes in the DPDK framework to untangle from PCI specific code/functionality. In this talk we delve into current upstream design of 1) the bus 'driver', 2) the mempool 'driver', 3) the device driver, and how these layers tie up together to provide the device model in DPDK framework. |
| 10:05– 10:30 | DPDK on an Intelligent NIC | Vamsi Attunuru | This presentation is about using DPDK as firmware on an Intelligent NIC (OCTEON TX). It will cover the firmware architecture and how DPDK fits in that architecture. It will discuss the hurdles faced and solutions used as part of this exercise. |
| 10:30 - 10:55 | Migrating from 10G to 25G | Jingjing Wu, Helin Zhang | The Ethernet speed upgrade path was clearly defined as 10G-→40G-→100G. However, new developments in data center indicate the latest path for server connections will be 10G-→25G-→100G with potential for 10G-→25G-→50G-→100G. This is because 25G provides a more efficient use of hardware and a more logical upgrade path to 100G. |
| 10:55-11:00 | DPDK CookBook | Muthurajan JayaKumar | The short talk is a quick tour of the book and show and tell of what each chapter contains. It is not going over the contents but giving info to developers as what each chapter contains. |
| 11:00 -11:15 | Break | | |
| 11:15 - 11:45 | Implementation of Flow-Based QoS Mechanism with OVS and DPDK | Karuppusamy M | The project objective is to implement 'Flow based QoS' for SDN-NFV platform using OVS and DPDK on Intel architecture. We will apply this QoS mechanism on Wipro vCPE platform and demonstrate performance improvement of real time traffic. |
| 11:45 - 12:00 | Fast Path Programming | Rajaraman Subramoniam, Debjyoti Mukherjee | This session is a primer on the prominence of P4 as a high-level, domain-specific language for data path applications. While there are a few ASIC vendors like Barefoot Networks who are coming up with compilers for their platforms, we are looking at expanding the reach of P4 for virtual infrastructure / software based data path by showcasing how P4 can become a choice for writing DPDK applications and thus enhanced portability. |
| 12:00 - 12:30 | Dataplane for Subscriber Gateways | Natarajan Venkataraman | Subscriber gateways, such as BNG nodes, have unique requirements and challenges as compared to traditional routers. They need to be feature rich while also supporting high scale and throughput. This talk will provide an overview of a typical dataplane for subscriber gateways and highlight some of the design challenges in realizing the goals and the trade-offs to be considered. |
| 12.30 – 2.00 | Lunch + Demos | Red Hat, Intel, TCS, Wipro, Avaya | |
| 2:00 – 2:30 | Sample VNF in OPNFV | Ramia Kannan Babu | The topic begins with an introduction for developing data plane feature rich Virtual Network Function (VNF) using optimized |

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| | | | DPDK libraries including ip-pipeline packet framework and taking advantage of basic x86 architecture. It covers concept of developing data plane applications for running with RTC (Run To completion) mode or Pipeline mode with just configuration change. It also covers the generic Best Known Methods for developing optimized data plane application on x86 architecture with specific code examples from samplevnf project from OPNFV. Finally concludes with the call for action to community to contribute in the samplevnf project in OPNFV for application development. |
| 2:30 - 3:00 | Fast Data IO / Vector Packet Processor: Architecture overview | Shwetha Bhandari | FD.io (Fast Data) is architected as a collection of sub-projects and provides a modular, extensible user space IO services framework that supports rapid development of high-throughput, low-latency and resource-efficient IO services. At the heart of fd.io is Vector Packet Processing (VPP) technology. This session will give an overview of VPP, its architecture and how it pushes packet processing to extreme limits of performance and scale.<br><br>https://wiki.fd.io/view/VPP |
| 3:00 - 3:30 | Transport Layer Development Kit (TLDK) | Mohammad Abdul Awal | TLDK (Transport Layer Protocol Kit) provides a set of libraries to enable transport layer protocols processing in user space. The major protocols we are looking in right now: UDP and TCP due their wide adoption. TLDK is designed to provides a very high-performance transport layer protocols processing to allow applications bypass the slower transport layer stack in operating system kernel. TLDK is based on DPDK libraries and maintains several DPDK design principles like bulk packet processing, non-blocking IO, etc. This presentation is an extension of talk presented in DPDK Userspace 2016. We will provide a TLDK overview, architecture, APIs, and some performance numbers.<br><br>https://wiki.fd.io/view/TLDK |
| 3:30 - 3:45 | Break | | |
| 3:45 - 4:15 | SFC with OVS-DPDK and FD.io-DPDK | Prasad Gorja | DPDK has become the ubiquitous user space framework on which prominent open source switching software, Open vSwitch and FD.io run, and is widely integrated in OPNFV. This session discusses Open DayLIght (ODL) based SFC on both OVS-DPDK and FD.io with DPDK, and provides a comparative study on architecture, performance and latency of SFC use case on ARM SoCs. |
| 4:15 - 4:30 | DPDK Automation in Red Hat OpenStack Platform | Saravanan KR | In this talk, we would like to take you through the Red Hat's effort to provision the OpenStack cluster with OVS-DPDK/SR-IOV datapath with the needed EPA parameters. We will describe the deployment steps, and the need for composable roles to handle today's VNF deployment scenarios. |
| 4:30 - 5:00 | Packet Steering for Multicore Virtual Network Applications over DPDK | Priyanka Naik, Mitali Yadav | This presentation addresses the question of how packets must be steered from the kernel bypass mechanism to the user space applications. We investigate the following two questions: (i) Should packets be distributed to cores in hardware or in software? (ii) What information in the packet should be used to partition packets to cores? |
| 5:00 - 5:30 | Cryptodev API | Deepak K Jain | This presentation describes the cryptodev API, a framework for processing crypto workloads in DPDK. The cryptodev framework provides crypto poll mode drivers as well as a standard API that supports all these PMDs and can be used to perform various cipher, authentication, and AEAD symmetric crypto operations in DPDK. The library also provides the ability for effortless migration between hardware and software crypto accelerators. |
| 5:30 - 7:30 | Evening Reception | | |