

# 2015中国DPDK开发者大会

## China DPDK Summit 2015

日期: 2015年4月21日

时间: 09:00 - 17:30

地点: 北京珠三角JW万豪酒店(北京市西城区宣武门外大街18号)

| Time          | Speaker  | Biography  | Session Title & Abstract  |
|---------------|--|--|---|
| 08:30 - 09:00 |  |  | <b>Registration &amp; Networking</b>  |
| 09:00 - 09:30 |  |  | <b>DPDK Summit Kick-off</b>   |
| 09:30 - 10:00 | <br><b>Dr Deng Hui</b><br>Dr Deng Hui  | <b>Dr Deng Hui</b><br>Dr Deng Hui obtained the PHD degree from Dept. Computer Science and Technology at Tsinghua University in 2002. He joined China Mobile in 2007 and now is working on the evolvement of the operator's architecture during the Mobile Internet Era. Hui Deng has been acting as the co-chair of IETF MIF working group since 2008. Besides, he used to be a board member of Wireless Broadband Alliance (WBA) and the chair of Program Advisory Group within the board between 2012 and 2014. He has been a member of the board of director of OPNFV since 2014.   | <b>Accelerate NFV with DPDK</b><br>Network Function Virtualization (NFV) aims to enable network operators to architect networks by evolving standard IT virtualization technology to consolidate network equipments onto industry standard high volume servers. The performance requires that the data plane devices within network infrastructure have been growing at significantly higher rates. With the evolution to a virtualized paradigm with NFV, the focus will be even higher. Representing data plane acceleration techniques, taking advantage of various hardware and software capabilities, DPDK is essential to this transition from traditional telecom infrastructure to NFV as demonstrated by the CMCC's Nanocell GW NFV PoC. Further, CMCC is also leading the "Data Plane Acceleration (dpacc)" project at OPNFV to specify a general framework, including a common suite of abstract APIs so as to enable VNF portability and resource management across various underlying acceleration techniques. |
| 10:00 - 10:50 | <br><b>Johnson Liu</b><br>Principle Forwarding Architect Huawei Technologies CO., LTD | <b>Johnson Liu</b><br>Johnson has sixteen years experience in IP R&D and was mainly engaged in network software system design and development. As a chief designer, he has guided several large scale network software platforms. Johnson is skilled at the following fields: IP protocols and application, router system and software, high performance forwarding system and NFV.  | <b>Transforming the Data Plane in the Telco Environment</b><br>In Johnson's speech, he will introduce the key requirements and philosophies of data plane software system, give an analysis of the DPDK architect, and then introduce DPDK application and issues in its development. He will also give some viewpoints in PMD decoupling with DPDK framework, PMD API and community operations of DPDK.  |
| 10:50 - 11:00 |  |  | <b>Tea Break</b>  |
| 11:00 - 12:00 | <br><b>Liang Cunming</b><br>DPDK Tech Lead Intel China Ltd.                           | <b>Liang Cunming</b><br>Cunming has 10+ years packet processing experience. He has been a DPDK developer since 2011 and now is the DPDK tech lead in Intel, China. His recent contributions to DPDK.org include the multi-thread per core, bifurcated driver and Vector PMD. He is expert in DPDK PMD, IO virtualization and SIMD optimization. He is passionate about making DPDK for customers of the PRC and the rest of the world.   | <b>Best Practices for Building Core/Efficient Applications</b><br>This provides a new perspective to the DPDK core efficiency problems. For a specific packet processing workload, the core efficiency means two sides: the more effective cycles and the less idle cycles. This talk will introduce the practices of using SIMD instruction to reduce the effective CPU cycle cost of packet IO. The two different methods of handling the idle cycles by using the power management or by preemptive scheduling will also be discussed. However, both of them can't fully avoid cycles waste, as a result of which the talk will then introduce the interrupt assisted poll mode driver. After describing all these practices of efficiency improvement, it will finally raise the envision on virtual switch scenario.   |
| 12:00 - 13:00 |  |  | <b>Lunch</b>  |
| 13:00 - 13:50 | <br><b>Dr Ou Liang</b><br>China Telecom Guangzhou Research Institute                  | <b>Dr Ou Liang</b><br>Dr Ou is a program manager of Data Network Communication Division, China Telecom Guangzhou Research Institute (GSTA). Currently, he is working on enabling SDN technologies in fixed broadband IP network. Prior to this, he was responsible for R&D work on intelligent carrier grade metro network, planning system for IP backbone network and innovative networking services based on Internet technologies. He obtained a Ph.D. degree in electronics and information engineering from Huazhong University of Science and Technology, Wuhan, China in 2005. | <b>SDN/NFV Based IP Edge Solution on Intel ONP</b> <ol style="list-style-type: none"><li>1. States the transformation requirements of IP network for legacy telecom carriers On the background of SDN.</li><li>2. Gives a brief explanation on CT's Programmable Forwarding Architecture (PFA) and NFV solution based on DPDK.</li><li>3. Introduce recent cooperation R&amp;D work between CT and Intel on the basis of Intel ONP.</li><li>4. DPDK use cases and testing results.</li></ol>  |
| 13:50 - 14:50 | <br><b>Zhu Chao</b><br>Research staff member from IBM-research China                  | <b>Zhu Chao</b><br>Dr. Zhu Chao graduated from Institute of Computing Technology, Chinese Academy of Sciences. He has years of experience on wireless network cloud. His team built the world's first multi-mode NFV for telecom prototype which was shown on MWC2014. He is interested in many areas, such as I/O virtualization, network packet processing, cloud computing and so on.<br>Session title: DPDK on Power: A new enhanced packet processing architecture  | <b>DPDK on Power: A New Enhanced Packet Processing Architecture</b><br>In this talk, a new computer architecture which can support DPDK - IBM Power will be introduced. The speaker will share his experience on the DPDK multi-architecture migration. Also, he'll show some DPDK use cases on Power.  |
| 14:50 - 15:10 |  |  | <b>Tea Break</b>  |
| 15:10 - 16:10 | <br><b>Sun Chenghao</b><br>Senior Software Engineer, Technical expert                 | <b>Sun Chenghao</b><br>Chenghao currently is a technical expert for Alibaba data center networking infrastructure team. He has rich R&D experience in Firewall, Switch and Software Gateway. At present, He is concentrating on the high performance networking node and virtualization application.   | <b>Optimize Cloud infrastructure with DPDK</b><br>Network applications based on the linux kernel networking has been observed to have many tech issues. Alibaba implemented a user space TCP/IP stack on top of DPDK which can implement all kinds of high throughput and scalability networking nodes including routing, switching, NAT, ACL, QoS, L4/7 proxy, vxlan gateway and traffic cleaning. By introducing Alibaba's attempts on DPDK, we hope to see more innovation around DPDK.  |
| 16:10 - 17:10 | <br><b>Chen Donghua</b><br>Senior system engineer ZTE                                 | <b>Chen Donghua</b><br>Donghua got the bachelor's degree of wireless from Southeast University in 2000. He joined ZTE in 2003 and was mainly engaged in Core Network PS development. After that, he has been a system engineer focusing on PS optimization and fast forwarding.  | <b>DPDK Fast Forwarding for Virtual EPC</b><br>In this talk, the speaker will share his experience on how to use DPDK features (mbuf, ring, huge page, pmd) to get huge performance improvement on vPEC, and will also talk about expectations on DPDK for further enhancement of security and reliability.   |
| 17:10 - 17:30 |  |  | <b>Closing Thoughts</b>   |