Junwei Meng

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Education

Xi'an Jiaotong University *M.S, Computer Science and Technology* 2016.9 – Present

My research focuses on the design of SDN data plane and FPGA development.

Xi'an Jiaotong University *B.E, Computer Science and Technology* 2012.9 – 2016.6

My research focuses on the improvement of the image scrambling encryption algorithm

Internship

Xilinx Research Labs Asia Pacific 2018.4 – 2018.7

Project: Programmable Packet Scheduling Strategy In Datacenter

- Designed queue scheduling IR and specified scheduling structure for dynamicly changing scheduling methods on different Network targets.
- Designed a multi physical queue module and deployed it to the FPGA board (SmartNic or OnetSwitch) which can provide on-demand differentiated services for applications.
- The system on the Kintex-UltraScale board can reach up to 25Gbps throughput in the experimental environment.

Project Experience

Research for the deployment algorithm of CDN Network Server Nodes 2017.3 – 2017.4

- Goals: Under the premise of satisfying all the consumer node, design a system which can automatically obtain the global optimal solution to setup the CDN server and the minimum total costs.
- Solution: Use heuristic algorithm and shortest path algorithm(spfa) by iteration to nearly achieve the optimal solution.

PPPoE Enterprise Switch development 2017.3 – 2017.8

- Developed the baseline procject of ONetSwitch 10G with SDNet.
- Designed a new dataplane for the service chain supporting PPPoE with P4 and implement the whole architecture on the ONetSwitch 10G.

Flow Counter based on FPGA for Network Measurement 2017.9 – 2017.11

- Use tcp/ip fivetuple as the flow identifier to allocate separate counter resources for each flow.
- Use three-level hash table structure to reduce the time solving hash conflict and Disco compression algorithm to save hardware resources.
- The whole system can reach up to 14Mpps throughput in the experimental environment.

Skills

- Skilled in: C/C++; Verilog, Vivado, HLS, SDX; Linux.
- Familiar with: Python; P4, Mininet; DPDK, Docker, Wireshark.
- Language: English(CET-6)

Honors and Awards

- CCF Software Capability Authentication, top20% 2016
- Huawei Code Craft Competition'17 Silver Medal, top2% 2017.3 - 2017.4