

CS 6480: Class discussion summary

HA 3.b

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Discussion summary

- *Summary:* Class discussed the main concept of the paper, its implementations and about strengths and weakness. Here few points for which I got more clarity:
 - Programmers can more easily define own network protocols.
 - key challenge in implementation is to achieve balance between expressiveness and ease of implementation.
 - Paper suggested 3 generalizations over openflow - reconfigurability, protocol independence and platform independence.
 - Performance will be a concern while operating at larger scale.
 - Example of table dependency - a scenario where next rule is set on MAC address. This rule is dependent upon finding out of MAC using ARP and can not be run unless MAC is found.
 - Example of L2 network deployment was more clarified after discussion - Top of the rack switch has pre-populated destination ips/macs populated by control protocol header. Same are populated in P4 header (say up1, up2 etc.) , P4/ openflow does not bother about how those get populated in Top of the rack switch.
- *Strengths:*
 - A good generalization of Openflow- configuring and maintaining switches will be easier.
 - Tremendous flexibility offered to programmers in terms of defining protocols.
 - Functions such as setfield are similar to C, making it easier to understand.
- *Weakness:*
 - Some references in paper are left unexplained - Bridge Id in Dependency Graph, Ethertype in header.
- *Connection with other work:* A brief mention of Portland[1], Click[2].
- *Future work:* was not discussed due to time constrain.

References

- [1] R. Niranjana Mysore, A. Pamboris, N. Farrington, N. Huang, P. Miri, S. Radhakrishnan, V. Subramanya, and A. Vahdat, PortLand: A scalable fault-tolerant layer 2 data center network fabric, in ACM SIGCOMM, pp. 3950, Aug. 2009.
- [2] E. Kohler, R. Morris, B. Chen, J. Jannotti, and M. F. Kaashoek, The Click modular router, ACM

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263297, Aug. 2000.