CS 6480: Class discussion summary
HA 6.b

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Discussion summary

- *Summary:* We touched on the fact that this is a magazine article, and therefore means that it will be shorter in length and targeted to a specific field/topic. I also wasn't aware that SIGCOMM is one of the most competitive places to submit your papers to. We then discussed the goals and the details behind P4. Pretty much P4 is trying to improve on OpenFlow by allowing the creation of match+actions. And the way they propose to do this is through the use of programmable switches. However, P4 will most likely not be adopted because of the dramatic radical change that requires programmable switches. We spent a lot of time discussing the figures and the process that P4 takes to work. Going over the figures made me realize that I didn't really understand a lot of the things being done in P4.

- *Strengths and weaknesses:* It was bit difficult to gauge the consensus in the class, but a few things were brought up. The example that dealt with top of the rack servers that was used in section 4 was really unclear. There was a bit of confusion in the class and in the paper not much was explained in-detail. Another weakness was the really weird small related works section, why not just make into its own larger section. However, we did go over a lot of the figures, and I do think they enhanced/improved the paper's content. Overall it was not a great paper but it had cool topics.

- *Connection with other work:* P4 is unique in its own right with regards to improving OpenFlow. But the underlying idea of being able to program hardware is not. This paper relates to one of our previous papers OpenNetVM [1] without getting into specifics this paper deals with being able to program the underlying hardware as well.

- *Future work:* This time around we had a little class discussion for potential future work that could be done so I have lots to discuss. This paper revolves around the idea of programmable switches. So it was brought up that we might be able to play around with open source programmable switches and might even be able to do an analysis paper on the quantitive analysis of programmable switches. Improving on P4 we could work on a GUI or IDE that makes the use of P4 more available and easy to learn/teach. On the more abstract side we could create a platform/hardware independent complier although this might not be feasible given the limits of hardware.

References

[1] Zhang, W., Liu, G., Zhang, W., Shah, N., Lopreiato, P., Todeshi, G., Ramakrishnan, K.,

AND WOOD, T. Opennetvm: A platform for high performance network service chains. *HotMiddlebox '16: Proceedings of the 2016 workshop on Hot topics in Middleboxes and Network Function Virtualization* (Aug. 2016), 26–31.