

CS 6480: Class discussion summary

HA 1.b

Damodar Sahasrabudhe

School of Computing, University of Utah

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Discussion summary

- *Summary:*
 - A single controller could be used to operate multiple switches.
 - Paper aims only enterprise level network, not for the internet.
 - Performance will be a concern while operating at larger scale.
 - OpenFlow is implemented at switch router level. However, endpoints still use traditional network protocols. This still forces researcher to use standard protocols (e.g. TCP, UDP, IP etc) unless researcher modifies protocol stack at both the ends as well.
- *Strengths:*
 - Paper satisfies all the parties - researchers, administrators and manufacturing companies.
 - shows innovation to provide programmable switch.
 - Concept achieves hardware - software split.
- *Weakness:*
 - Does not provide implementation details.
 - Does not provide evidence, makes assumption that other implementations of similar kind worked well, so will OpenFlow.
- Performance could be a problem when implemented at large scale.
- *Connection with other work:* A brief mention of Ethan[1].
- *Future work:*
 - GPUs can be used for rapid rule evaluation / packet switching. But depends upon complexity of rule.[2]
 - When implemented at large scale such as internet, Controller can not view each and every undelivered packet. System should be intelligent enough to handle such scenarios

References

- [1] Martin Casado, Michael J. Freedman, Justin Pettit, Jianying Luo, Nick McKeown, Scott Shenker. "Ethane: Taking Control of the Enterprise"
- [2] Weibin Sun "Harnessing GPU Computing in System-Level Software"