



Stages of Fairness

Fairness Flow

1

Physical Layer

- . Physical Equipment and structure
- . Fiber, Wireless, Hubs, Repeaters, Switches, Ethernet



2

Network

- . Packets and Frames
- . IP, ICMP, IPSec, IGMP, PPP



3

Transport

- . End-to-end connections
- . TCP, UDP



4

Session

- . Synch and Send to port
- . Syntax
- . API's, Sockets, WinSock



5

Application

- . User Interface
- . HTTP, FTP, IRC, SSH, DNS



6

Human

- . Human-to-Human
- . Human-to-Robot
- . Robot-to-Robot



A Consistency Based Research: P4 Versus OpenFlow and the Future of Software Defined Networks

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Abstract

Software-Defined Networks (SDN) technology has the ability to edit a network's ability to function, making its uses valuable for on-demand applications for today's consumers and businesses. SDN can enhance a network in multiple ways, since it unlocks critical intelligence, help deliver newly designed services and analytic specifically for the needed party. The functionality of giving the network administrators a full overview of the entire network architecture is essential for future network debugging and/or develop a valuable and secure modal for the best quality of experience (QoE) requested. We aim to discuss the ability of P4-language its uses on SDN and why it should be adapted and used in programming network modals and architectures. Re-configurability, protocol independence, and target independence are the main aims of this language making it a highly desired competitor to OpenFlow. P4 shows a different value proposition, nonetheless OpenFlow agents may be written on top of P4, thus great P4 implementations may force OpenFlow into being obsolete. Broadcom SDK along with OpenNSL will also be affected by the new rise of P4, since P4 may write a much better API on top of Broadcom SDK. P4 use cases that will be researched include; (i) P4Runtime which is being highly used in the world of SDN controllers and white box solutions. (ii) In-band Network Telemetry which is a framework designed to allow collection and reporting of network state by the data plane. (iii) Behavioral Model, where a P4 software switch allows compiling and running switch simulations to develop new features (virtually). All the following will be researched, tested and constructed in-order to develop a useful P4 plug and play test-bed. [1, 2, 3, 4, 5, 6].

Keywords— SDN, QoS, QoE, fairness, Openflow, P4, Broadcom SDK, OpenNSL

References

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