

Flexible Software Defined Network

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*A thesis submitted for the degree of
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Yet to be decided

Abstract

What is my main moto? ¿¿evolving control on the edges, can optimize the current bottlenect in the network, nd thus improve overall performance, but also it can scale sufficiently. ¿¿

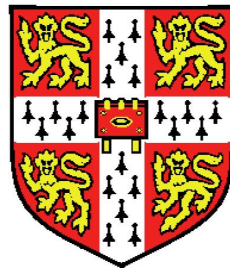
The evolution of human communication needs has been radical in the recent years. Internet connectivity has become nowadays vital from many aspects of society, and Internet accesibility is slowly recognised as a fundamental human right. Network innovation hasn't been proportional. Network perfromance requirements are enhanced, but modern networks have become highly complex, as well as network performance requirements. Although, link rates have inceased significantly, the complexity of modern networks hardenis the optimization task. A number of measurement analysis papers have recently moved the netowkr bottleneck close to the edges of the network. This is a direct concequence of the low-cost requirement of computer networks. In order to enhance the edges, ISPs need to invest a large amount of money in order to replace the connection medium and upgrade equipment in the last mile.

Keeping in accordance with the end-to-end principle of computer networks, a approach would be to develop more efficient protocols. Unfortunately, the requirement for fast connectivity at low cost, has assimilate to the network a number of strong assumtpions, that make it impossible to develop and propose new network protocol that address aforthmentioned problem. An alternative approach to the problem is to provide evolution through the control plane. Such approaches have been explored in the past without a lot of adaption. A recent development in the field is called *SDN* and gains a lot of interest from the community.

In my thesis, I will firstly present a set of evaluation platform and results that try to understand the impact of the SDN paradigm, and especially its popular implementation *OpenFlow*. The result show that the protocol implementation are not yet sufficiently mature to be deployed across the network. Although, software implementations of the protocol are exceptionally efficiently.

This observation drives my exploration on the possibilities of deploying OpenFlow in the edge of the network, close to end-users.

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