

MASTER THESIS NAME

ITIS MASTER THESIS

presented by

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ABSTRACT

The work done is this master thesis implementation of a wide used networking protocol BGP in a SDN environment Write here your Abstract. //TEXT In this thesis, blablabla is presented.

Keywords: SDN, Networking, Controller, ODL, FL, OpenFlow.
//ENDTEXT

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ACRONYMS

SDN Software-defined Networks

INTRODUCTION

1.1 FIRST SECTION

1.2 MOTIVATION

(OF el protocolo del futuro) For this reason, universities and research groups are exploring new techniques to deal and to make easier to handle a LAN or WAN administration.

Many hardware vendors are paying their attention to Software-defined Networks (SDN); hence the interest to know about this technology. SDN defines a new relationship between the network devices and the software that controls them. There is the possibility of control the whole network from a single point.

Since the launch of SDN, there has been some interesting projects/applications: Network virtualization (Flowvisor), load balancing (PlugNServe), traffic engineering (Aggregation) among others.

Changes in the network just require the administrator to update of the links in the controller.

NOX is one of the first controllers used to make tests in SDN networks and it achieved a good performance.

Depending on the network size, it is possible to apply a distributed controller (various controllers) or centralized (one controller). (insertar figura control distribuido)

OpenFlow "Permite acceder directamente y manipular el plano de direccionamiento de dispositivos de red como switches y routers, ya sean físicos o virtuales (HP 2008)" Facilita el acceso a dispositivos de red mediante una interfaz standard. (Figura: arquitectura de comunicación OpenFlow, Heller 2011) OpenFlow utiliza TCP/SSL (capas 4 y 5 del modelo OSI) para la comunicación del plano de control y el controlador. OpenFlow es un protocolo para operar redes SDN. Al igual que TCP, su estructura está diseñada por mensajes que establecen una comunicación y generan las acciones correspondientes (McKeown et al, 2008). OpenFlow es el lenguaje de comunicación entre el controlador y los switches (southbound interface).

The last version of the protocol is...

By separating the data plane from the control plane, it is possible to have a better control of the network, thus heading to more effi-

ciency. In traditional networks: proprietary devices, hard to integrate, standards for interoperability were missing (figura redes clásicas vs. OpenFlow arch, Sherwood et al 2009) Al desacoplar el control de datos, esto significa que esto puede delegarse a un controlador externo, o sea, se puede programar desde fuera del dispositivo la manera en que serán procesados los flujos de paquetes. Así es posible conocer que orígenes y destinos conoce el dispositivo.

1.3 RESEARCH QUESTIONS

- Analyze the performance of the controllers in a simulated environment, finding the possible limitations of each controller.
- Research and develop a proof of concept for SDN controllers under different administration domains, where the APIs of each controller have to communicate with each other.
- Run tests of performance and throughput, in order to check the interoperability of different solutions interconnected.

1.4 OUTLINE

The organization of this work is structured as follows: [SDN](#)

Mininet 1 [\[7\]](#)

Mininet 2 [\[8\]](#)

[\[1\]](#)

[\[6\]](#)

[\[4\]](#)

ODL [\[5\]](#)

FL [\[3\]](#)

FL 2 [\[2\]](#)

RELATED WORK

In their work, et al.[6] perform a comparison of two of the most known controllers: OpenDayLight and Floodlight.

La teoría debe tratarse de forma ordenada y coherente, especificar cuáles autores o conceptos se van a utilizar y por qué. 1-.SDN/OpenFlow 2-.Controllers 4-. Multivendor environment. 3-. ODL and FL

In the next chapter we will review the protocols chosen for our implementation.

PROTOCOLS OVERVIEW

In this section, we describe ...

Floodlight is compatible with OpenvSwitch. OpenDayLight is compatible with OpenvSwitch.

[7]

System Details: 1-. SDN controllers: FL, ODL. 2-. Virtual Net: Topo: Mininet 3-. Evaluation & Analysis: Wireshark, iperf. 4-. OS: Ubuntu, Debian.

METHODOLOGY

4.1 METRICS

WRITE HERE THE CONTENT

¹

4.2 IMPLEMENTATION DETAILS

Write here the details of the implementation.

¹ Footnote content.

EXPERIMENT RESULTS

In this section, the results obtained will be presented.

CONCLUSIONS

In this project, a survey work was done on some of the existing protocols exploiting constructive interference for wireless sensor networks and their performances were tested,

We also provide a brief description of ...

The results gained are ...

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