UNIVERSITI TEKNOLOGI MARA
SHAH ALAM

NETWORK MONITORING AND CONTROL FOR RADIO TELEVISYEN MALAYSIA(RTM) USING SOFTWARE DEFINED NETWORK (SDN)

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ABSTRACT

The demand of network monitoring and management become more challenging to network engineer especially for governments and privates sector including financial institutions. Current practice that has been used to manage network is by manually configure the IP using traditional ways. It can become more complex and hard to manage if there no proper documentation, poor network designs structures and large scale network infrastructure. It is hard to manage according to predefine policies or to make changes to an existing network. The worst scenario can be happen to network engineer if the current network are been integrated and the bundle of data planes in the network. Software-Defined Networking (SDN) is the solution that can help network engineer to manage their network. By using SDN, it helps us to centralize the network control, simplify network management and even can able to program our network.

In current RTM environment, streaming video and audio via internet become more important. Handling multi connection and many clients accessing to the centralized online server may cause of latency and delay because of limited of bandwidth. To provide a greater bandwidth, uninterrupted service and best user experiment, we need one mechanism to handle huge traffic request from users. The servers can be optimize and improve the connectivity between server and network switches by leverage multi Network Interface Card (NICs) that has been installed on multiple servers. In this research, it will apply with Software Defined Networking (SDN). The OpenFlow-based SDN is able to provide a greater bandwidth and do traffic prioritization and dynamic path-selection in multi path environment. A program will be developed to instruct the OpenFlow-based SDN Controller for route modification. The evaluation of the SDN approach will be conducted by comparative study between current network in RTM environment and proposed SDN infrastructure.

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CHAPTER 1
INTRODUCTION

Chapter 1 this research project is an introduction of the project. This chapter covers background of study of SDN Infrastructure, SDN Controllers, and Virtual Machine for SDN. Other sub topics that also covered in this chapter are Problem Statement, Research Questions, Research Objectives, scopes, Significance of Research and Dissertation Organization.

1.0 Introduction

As per Benson et al (2009), the disseminated control and transport system conventions running inside the switches and switches are the key advances that permit data, as computerized parcels, to go far and wide. In spite of their far reaching appropriation, customary IP systems are intricate and difficult to oversee. To express the fancied abnormal state system arrangements, system administrators need to design every individual system gadget independently utilizing low-level and regularly seller particular charges. Notwithstanding the arrangement multifaceted nature, system situations need to bear the progress of shortcomings and adjust to load changes. Programmed reconfiguration and reaction components are essentially non-existent in current IP systems. Authorizing the required arrangements in such a dynamic domain is in this manner exceptionally difficult. To make it considerably more convoluted, current systems are likewise vertically incorporated.

The control arrangement which is system activity and the information plane are packaged inside the systems administration gadgets, diminishing adaptability and frustrating advancement and development of the systems administration base Software-Defined Networking (SDN) is a rising systems administration worldview that offers would like to change the restrictions of current system frameworks. In the first place, it breaks the vertical coordination by isolating the system's control rationale from the basic switches and switches that forward the movement . Second, with the partition of the control and information planes, system switches get to be basic sending gadgets and the control rationale is executed in a consistently brought together controller or system working framework, improving strategy implementation and system reconfiguration and advancement. Emphasize that a coherently unified automatic model does not hypothesize a physically concentrated framework. Truth be