Universiti Teknologi MARA

ANALYSIS OF RASPBERRY PI AS A PRESENCE SERVER

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Thesis submitted in fulfilment of the requirement for
Master of Science in Computer Networking (CS778)
Faculty of Computer and Mathematical Sciences

July 2015

ACKNOWLEDGEMENT

In the name of Allah, The Most Gracious, The Most Merciful, and Him alone are worthy of all praise.

All praises to Allah SWT, for all His bless that I had during the completion of this project. I would like to express my warm gratitude for those who were involved in contributing their help and support either directly or indirectly in the making of this project. It has been my good time to have the advice and guidance from many talented people, who's knowledgeable and skilful to enhance my project.

First of all, I would like to address my deepest appreciation and sincere thanks to my supervisor, Dr Zolidah bt Kasiran for her guidance, encouragement, comment and ideas given in completing this project. My gratitude also goes to my course advisor, Dr Nor Shahniza bt Kamal Bashah, and dedicated Computer Technology and Networking (CTN) lecturers who always give ideas and commitments.

I would like to thank to my beloved parents and wife, my best friend, my classmates for their deepest concern and investment during the course of this project. Thank you for the full support. I really appreciate the commitment that you all give to me. Thank you, may Allah SWT bless all of you.

ABSTRACT

Presence Server is a part of services in IP Multimedia Subsystem (IMS) service layer. Presence Server collects, manages, and distributes real-time presence information of users. The server supports SIP protocols to provide the awareness of presence to users. Presence Server includes two major components: Presence Server and Group List Server. This research focuses on Presence Server. Presence Server also provides much richer presence information of each registered entity by integrating the information retrieved from external service providers, such as calendar systems and location servers.

The presence server develop to solve several problem such as the efficiency of communication, presence and messaging running on Presence Server and call back notification. So, the general objective in this research are to set up and ensure Presence Server can be running using Raspberry Pi, to evaluate quality of services and to ensure continuity of communication. There are six phases in this research methodology which are information gathering phase, analyzing information phase, design phase, testing phase, data collection phase and documentation phase.

In the end of this research, end user will get the benefit of presence services which can get the present and latest user's information. The presentity will show the information such as communication address, accessibility of terminal and communication status. Observer will get the information in real time and will know how and when they can communicate each other based on the presentity information display.

Based on the analysis result by using Raspberry Pi as Presence Server also can cut the cost of implementation. So, Presence Server can used with low cost of implementation with good quality of services.

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CHAPTER 1
INTRODUCTION

1.1 BACKGROUND OF STUDY

The Raspberry Pi is a tiny computer like Malaysia identity card size with some basic functions with it. It is designed to help people to learn computing with low cost. It was plugs into monitor or TV using HDMI plugin as a video output. . It comes in two model, where it Model A and Model B. The USB ports allow user to use keyboard and mouse and the Ethernet plug-in possible connect to the network. To support power, it uses a micro-USB cable that used in a variety of mobile devices today.

Talking about HDMI, Raspberry Pi does not support old monitor plugin. However, converter from HDMI to VGA is needed to plug the old monitor. There is no problem if use new version of monitor because it already using the HDMI cable.

Raspberry Pi is can do anything like a personal computer, from making spreadsheets, word-processing, browsing the internet, internet radio, video advertising (Valeriu Manuel Ionescu et al., 2013), playing games, and controlling robots. Raspberry Pi can also be used for home automation (Sarthak Jain et al., 2014). By using small computer, remotes control things like air conditioning and lighting are being created. In other side, Raspberry Pi is possible runs as a web server application. It's has the ability to connect to the world. Many projects has been done by using Raspberry Pi like used as a wireless sensor node (Vladimir Vujovic & Mirjana Maksimovic, 2014), measurement system control unit (Sławomir Michalak, 2014), home automation system (Shaiju Paul et al., 2014), home monitoring, projector remote (Dhaval Chheda, et al., 2013), and face recognition (Tony DiCola, 2014).

Presence Server

IP Multimedia Subsystem (IMS) is a set of designations that describes the Next Generation Networking (NGN) architecture for implementing IP based telephony and multimedia services. IMS defines a complete architecture and framework that enables the convergence of voice, video, data and mobile network technology over an IP-based infrastructure (Fung Po Tso et al., 2013). It fills the gap between the two most successful communication between cellular and Internet technology. End users