

**Universiti Teknologi MARA**

**Enhancement Networking of Cloud  
Computing Using Open Source  
vOneCloud OpenNebula at Universiti  
Malaysia Kelantan**

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## ABSTRACT

ICT department of Universiti Malaysia Kelantan is depending on physical servers to run their systems and applications such as DHCP, DNS, Email, Website, Integrated Management Service (IMS), KASEYA and so on. All the physical servers located in data centers built in the university. On 24th December 2014 the flood disaster hit the most of the Kelantan states that drowned the data center. This causes most of the physical server to be evacuated to avoid flooded with mud. Cloud computing is a promising infrastructure which provides computation and storage resources as services. Hence, the concept of cloud computing infrastructure which is infrastructure as a service model was introduced. In this paper cloud computing Infrastructure as a service (IaaS) is presented to support the storage, VM and internet connectivity. vOneCloud is used to build the cloud computing system. vOneCloud will integrate with existing VMware vCenter. VM will be created through the system. Cloud performance is tested to demonstrate cloud computing and proved it is reliable and efficient to operate as a data center. The cloud computing system enable to operate the latest information without interference and also easy to manage, reliable, scalable, easily through the internet and stable performance.

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# CHAPTER 1

## INTRODUCTION

In the 21st century technological development is so fast. It has created a system that is so sophisticated computing such as tablets, ipad, ipod and smart phone. Most people make computing technology gadgets essential part of everyday life. The sequence of development of this technology had emerged a concept called as bring your own device (BYOD). This concept exists because employees bring personal devices into the office to secure network access (Chang.V, Bacigalupo.D, Will G and De Roure, 2010). Most of BYOD devices have WiFi technology where it can access the internet anywhere with a WiFi network such as trains, cars, shopping complex and a lot more. Due to technological developments are also some large companies have been researching and investing in better technology like cloud computing (Marios D. Dikaiakos and George Pall is, 2009). Cloud computing can simply be described as computing based on the internet such as Apple, Google, Hewlett Packet(HP) and others have invested and built cloud computing system for their own company and users of their product . There is also the company which is a provider of cloud computing such as Amazon , Citrix and Vmware (Mei.L, Chan.W.K and Tse.T.H,2008).

Cloud computing has emerged as a prominent computing model. Cloud computing framework contains the platform, operating system, virtualization, cloud application services, and cloud hardware. However, the introduction of cloud computing allow the people as well as business enterprises to access their programs through the internet. This kinds of computing is growing rapidly (Chang.V et al., 2010). There are three categories of cloud computing, which is infrastructure as a service (IaaS), Software as a Service (SaaS) and Platform as a Service (PaaS). Among these, IaaS provides an infrastucture as a services. The infrastructure includes some utilities, virtual machine and appliances. SaaS provide access to software and its function remotely as a web service for the users. PaaS allows