Study on the Telemedicine Healthcare Consultation System

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Abstract. It is important that prevent disease and daily health management, as the aging of the population and improvement of the living conditions also increased medical. As these cases the personalized healthcare needs are expanding for the well-being. Therefore, diagnosis, surveillance, prevention healthcare services will be increasing and the treatment will be reduced in the future. In this paper, proposed cloud based a telemedicine consultation system between the hospitals and not only fast but also reliable healthcare application was implemented.

Keywords: U-health, CPI, PHR, IaaS, PaaS, Cloud Platform

1 Introduction

It is from the healthcare and ICT convergence to provide health information to the patient and then developed into a U-health (u-health) to monitoring patient’s health status using the wireless communication technology, so that it is provides ubiquitous healthcare services [1].

The Digital Health is a broad concept that encompasses the smart health and mobile health what recently emerged. It is collecting information of the health status and manage it effectively so that possible to provide personalized healthcare and medical services.

In this paper, we proposed expandable system that manages a variety of integrated platforms, and proposed reliable cloud implementation methodology and application development methodology.
2 Related Researches

2.1 Cloud Infrastructure Design Methodology

The goal of cloud infrastructure is to complete virtual server life cycle management and provide create, delete, modify, backup, recovery functions. It is realized automatic code for the automatic control management. The cloud infrastructure configuration, as shown in Figure 1 [2].

Fig. 1. Cloud Infrastructure

On this cloud infrastructure provides a variety of reliable services and expandable infrastructure also provides virtual server control program, storage and network control program and scheduling, open source based cloud infrastructure configuring process and virtual server life cycle control, storage and network construction and so on.

2.2 Cloud Platform Development Methodology

Cloud platform provide cloud services needed for the development to provide public services, and provide development language and framework also provide open service for the other services [3]. The platform configure CPI (Cloud Provider Interface) for the connection of a variety of public and private cloud infrastructure, especially through the cloud foundry BOSH control and connect major cloud infrastructure. It is including automatic technology toolkit based automatically installation of main setting programs and cloud infrastructure linkage program and user authentication methodology also cloud infrastructure monitoring and log information management program and so on.
3 Implement of Telemedicine Consultation System

Cloud based PHR platform configuration, as shown in Figure 2.

![Fig. 2. Cloud based PHR Platform](image)

Using the cloud platform (PaaS) collect and analyze a variety of medical information of domestic and foreign institutions to provide services so that provide the service for a variety of medical items [4]. Using the cloud platform service realized 1 to N structure so that provide the more accuracy and the more services. The differentiator of the existing PHR system as shown in Figure 3.

![Fig. 3. Upgraded PHR Services](image)

The proposed smart telemedicine consultation system configurations, as shown in Figure 4. The main functions are cloud service configuration, PHR based telemedicine interface configuration, multi-platform client environment supporting, patient
healthcare information connecting interface and telemedicine information synchronization and viewer.

Fig. 4. Telemedicine HealthCare Consulting System

4 Conclusions

Cloud platform was certified to be a community cloud which provide professional security and public services in the healthcare field. It is easy to install new service and the use of virtual resources flexible also provide prompt services that using the proposed cloud platform.

References