

Chapter 4

An Adaptive Cloud Proto Type Model for Health Care System: An Adaptive Cloud Proto Type Model for Health Care System Using Software Defined Network (SDN)

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ABSTRACT

In the current Information Technology virtualization is one of the key components during the performance evaluation of network enabled environment including distributed computing, cloud computing, grid computing or pervasive computing. The network administrators and forensic teams are working on software defined networking (SDN) using which the network components can be controlled and managed using virtual infrastructure and global view of the physical network. On the physical implementation viewpoint, the single error or oversight can be damage the entire network integration. Now days, the advent of SDN products are being used in the research, development and corporate industry so that the effective control including routing, scheduling, security and related algorithms can be implemented

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on real networks. There are number of real life applications where the software defined networking and service oriented architecture (SOA) can be implemented for the social and global cause. Medical and Health Care Service is one of the key domain can make use SDN approach in which the number of medical decisions are to be taken based availability of the enterprise information. In this research work, the case analysis and a prototype for health care management service is accomplished. In this chapter, a unique and pragmatic implementation of the SDN based on virtualization is done and the prototype which we proposed in this chapter will be validated in future by using mininet-openflow integration to evaluate the performance of network and data packets transmission.

that a controller communicates with network devices in SDN architecture. It was proposed to enable researchers to test new ideas in a production environment [6,7,8].

Open Flow provides the migration layer for control logic from a switch into the controller. It presents a protocol for the effective communication between controller and network switches [9,10].

Software Defined Networks (SDN) is an emerging technology nowadays to improve the speed of the data transmission. The main idea of this work is to integrate the hospitals under the same organization which is to share the information through SDN protocol architecture. The proposed model could work as a special case in medical field to share the experiences of doctors. The relevant information would be helpful to doctors as well as for patients. In the recent Information Technology well known social networking is highly crucial in day to day life. The proposed model could give expected results.

The underline LAN architecture may not perform well in integration switches and routers. Once the information is available in the remote sites the sharing of it is a crucial task. The sharing of the information will be performed well with SDN architecture. Security is a predominant factor in software defined networks (SDN), once the medical data is kept on the web then one can provide high level security to the applications developed with the medical data.

Figure 1 shows SDN architecture which shows the three-layer architecture which consisting of Infrastructure Layer, Control Layer and Application Layer. The open Flow protocol suite is an interface between Data plane (Infrastructure Layer) and Control Layer. The Control Layer generates the rules to forward the rules for data packets. A novel protocol suite is highly essential to maintain the security between Control and Infrastructure layer.

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