

Abstract

Integration of cloud computing and mobile computing with the proliferation of big data is making remarkable strides in the health care industry. Aside the benefits accrued from adopting this technologies, there are myriad of challenges to overcome such as confidentiality of data outsourced to the cloud, integrity of stored data, wide area network (WAN) latency delays, and the resource constraints of the mobile devices. In this paper we propose a Cloudlet-Based eHealth Big Data System with Outsourced Decryption (CBe-BDS-OD) to address the above challenges. To accommodate mobile devices with limited resources, the computation power is borrowed from the cloudlet server securely. Security analysis demonstrates that our scheme is secure. In addition, our performance approach through theory analysis and experimental simulation indicates a substantial improvement in computation efficiency by 99% and therefore the scheme can be deployed in resource-constrained mobile devices.