**A Secure G-Cloud-Based Framework for Government Healthcare Services**

**ABSTRACT:**

Within the literature, we have witnessed in the healthcare sector, the growing demand for and adoption of software development in the cloud environment to cope with and fulfill current and future demands in healthcare services. In this paper, we propose a flexible, secure, cost effective, and privacy-preserved cloud-based framework for the healthcare environment. We propose a secure and efficient framework for the government EHR system, in which fine-grained access control can be afforded based on multi-authority ciphertext attribute-based encryption (CP-ABE), together with a hierarchical structure, to enforce access control policies. The proposed framework will allow decision makers in the Kingdom of Saudi Arabia to develop the healthcare sector and to benefit from the existing e-government cloud computing platform ―Yasser,‖ which is responsible for delivering shared services through a highly efficient, reliable, and safe environment. This framework aims to provide health services and facilities from the government to citizens (G2C). Furthermore, multifactor applicant authentication has been identified and proofed in cooperation with two trusted authorities. Security analysis and comparisons with the related frameworks have been conducted.

**EXISTING SYSTEM:**

The health problems could be prevented before they occur or their complications prevented by early detection. This is due to a combination of factors, planning, operational, and technical. If we were able to overcome them, this would lead to significant progress in the level of health care. In addition, there is a weakness and lack of available hospital information systems, which is some of the most advanced software that directly serves all technical and administrative healthcare activities, ensuring that the medical institution has full control over all its activities and resources. The successes of these advanced systems do not depend on the exact selection of equipment and software for storage.

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**DISADVANTAGES OF EXISTING SYSTEM:**

* The problem with the ABE-based encryption scheme is that data encryption needs to use the public key for each licensed user and needs to use attributes to control the user's access to the system. So, ABE cryptographic credentials are issued by trusted attribute authority, which is in possession of a global master key for key generation.
* Hierarchal attribute-based encryption (HABE) scheme by combining the hierarchical identity-based encryption system and the ciphertext-policy attribute-based encryption (CP-ABE) system. , and then making a performance-expressivity tradeoff, finally applying proxy re-encryption and lazy re-encryption to their scheme.
* Ciphertext-policy attribute-based encryption (CP-ABE), as one of the most promising encryption systems in this field, allows the encryption of data by specifying an access control policy over attributes, so that only users with a set of attributes satisfying this policy can decrypt the corresponding data.

**PROPOSED SYSTEM:**

The traditional health system has been replaced by an electronic health information system because the traditional system has been found to be ineffective due to a number of issues, including low storage capacity, high operating and maintenance costs, and system integration. The computerized health system was then replaced by cloud computing because it relies on a more efficient infrastructure, as well as the many benefits of cloud computing in IT, such as cost, scalability, flexibility, and other features. The use of cloud computing in electronic health records reduces costs in the provision of health services.

**ADVANTAGES OF PROPOSED SYSTEM:**

* The rapid shift to the cloud and its use in healthcare systems has raised concerns about crucial issues of privacy and information security.
* The adoption of the cloud in IT increases the focus and concern of healthcare providers on clinical and patient-related services and reduces attention on infrastructure management.
* Different domains of attributes are managed by different attribute authorities, which operate independently from each other and controlled by the central trusted authority.

**SYSTEM ARCHITECTURE:**

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**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

* System : Pentium Dual Core.
* Hard Disk : 500 GB.
* Monitor : 15’’ LED
* Input Devices : Keyboard, Mouse
* Ram : 1GB.

**SOFTWARE REQUIREMENTS:**

* Operating system : Windows 7.
* Coding Language : JAVA/J2EE
* Tool : Netbeans 8.2
* Database : MYSQL

**REFERENCE:**

Sanaa Sharaf King Abdulaziz University, Jeddah, and Nidal F. ShilbayehThe University of Tabuk, Umluj, Saudi Arabia, “**A Secure G-Cloud-Based Framework for Government Healthcare Services**”, Healthcare Information Technology for the Extreme and Remote Environments , IEEE Xplore: 19 March 2019, DOI 10.1109/ACCESS.2019.2906131