

Impact of Cloud Database in Medical Healthcare Records Based On Secure Access



K.Geetha

Abstract: In the future generation would development of new technologies, such as cloud computing, Internet of things (IOT), used in the medical field from concept to practice. Health care medical field is the major import role in cloud computing. The E-medical record contains the Healthcare providers HIS, but its deployment process slow due to high cost and high maintenance cost. In this paper study, electronic medic records with cloud-based security and access rights. In the cloud data ware house contained for all hospital patients details. Cloud middleware gives a platform for electronic healthcare system. It is provides to secure access the medical health record only authorized users and avoid unauthorized user. In this paper, proposed cloud computing design, which enables the secure and collaborative E-medical records among the all the hospitals with case of access rights.

KEYWORDS: Cloud Computing, E-medicals, EMR, Healthcare records.

I. INTRODUCTION:

Today's world, medical field focused on Electronic Health record contains collection of different medical data records that generated by 24X7. In this health record IT field capture identification details and demographic details, such as UIDI Aadhar number or any government issued numbers. Electronic protected Health information (E-PHI) refer to PHI created, access, edit by electronically. This type of electronic health field provide "Health service" to all the patients detail in the following ways:[1],[2]

- Health records all the information about the patient's medical records which is critical.
- Access the patient's identification and demo gram information.
- Valuable treatment given to the patient based on the patient's health record report.

Health information system hosted all the patients' information at private cloud (or) public cloud. In the cloud medical Architecture contains medical imaging and patient health record with cloud service client.

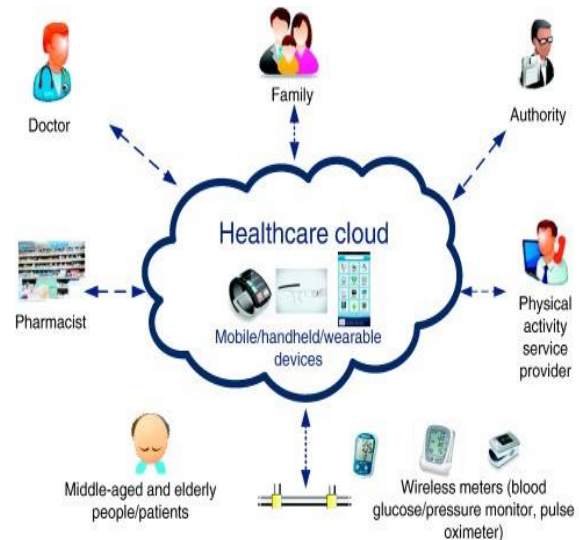


Figure I: Healthcare Cloud Architecture

II. OVERVIEW OF HEALTHCARE IN CLOUD:

Now-a-days Healthcare is the important role of data in cloud computing. Healthcare information system classified into three basic things like,

- Personal Health Record,
- E-Health Record,
- E-Medical Record.

In that HER frame structure gives security and protection of the patient's information data in the cloud computing system [4]. These three terms are used in the field of Hospital patient's information using with cloud Architecture. In the Electronic medical records gives full details about patients that is collected by for the hospital or clinical. This information used by providers for patient causes treatment by diagnosis the diseases. EMR information used to improve the patients health quality as well as 24X7 screenings and monitoring. In the Electronic Health Records include all clinical information of the patients. The important feature in the HER is also share information to other healthcare provider, such as specialists. HER maintain the details of the patients specialist, hospital, nursing [5]. In the PHR similar to EHR, the difference is PHR set up, accessed, and maintained by patients.

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* Correspondence Author

Dr. K.GEETHA*, Assistant Professor of Computer Science at Tamil Nadu State in India.

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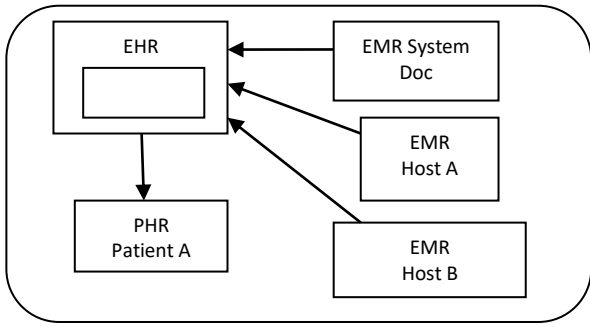


Figure II: Frame work of PHR, HER, EMR

A. Healthcare Information Technology:

Cloud computing used in many ways especially healthcare information data of medical field. Using with cloud more advantages and benefits for Healthcare. The Cloud Computing takes care of the health IT technologies for medical and patients details. Now-a-days, cloud technologies moving to clinical research and clinical management for secure the sensitive data in the Cloud [6].

II. PATIENT-CENTRIC ACCESS CONTROL MODEL:

Patient’s health record information efficiently shares the data in to patient’s family members and friends. In the PHR is maintaining Health care data in third-party cloud health data. The PHR owner’s control of patients secures data access policy by protection mechanism such as, encryption way, so the authorized users to decrypt the needed patient’s data file [7]. In this proposed work paper use ABE (Attribute based Encryption) to protect the Health records in the PHR Cloud. In this way each and every patient utilizes health record details with attribute based encryption framework. Here, every patient knows the third party of the PHR to verified patient centric [8],[9].

III. PROPOSED WORK

Using with a Cloud, Health records in the PHR implemented in the way of proposed method. In the proposed method used every patient health record details encrypted based on Key Attributes method. It generated the Key generation using with 50 attributes. In the below table1 shows the Key Generation time of existing and proposed, it given for 50 attributes and the values compared with each other. It illustrates the difference between these works between existing and proposed to shows the performance of this work. It gives the proper improvement from the existing algorithm. Table1: Key Generation time using Attributes for existing work

| Key generation time | Attributes | Existing values |
|---------------------|------------|-----------------|
| 0.2 | 10 | (10,0.2) |
| 0.4 | 20 | (20,0.4) |
| 0.6 | 30 | (30,0.6) |
| 0.8 | 40 | (40,0.8) |
| 1.0 | 50 | (50,1.0) |

Table2: Key Generation time using Attributes for proposed work

| Key generation time | Attributes | Existing values |
|---------------------|------------|-----------------|
| 0.1 | 10 | (10,0.1) |
| 0.25 | 20 | (20,0.25) |
| 0.4 | 30 | (30,0.4) |
| 0.56 | 40 | (40,0.56) |
| 0.65 | 50 | (50,0.65) |

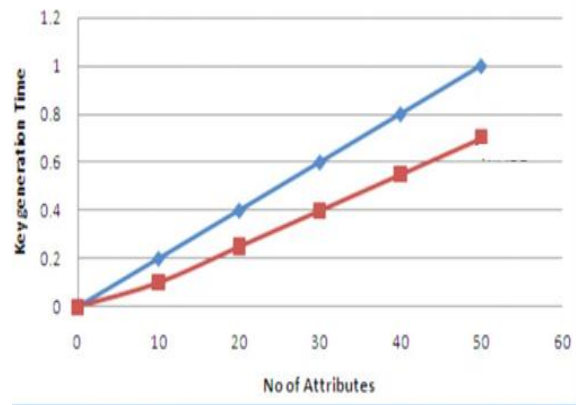


Figure III. Graph using number of Attributes with key generation time

In the above diagram, Red line indicates the proposed work and blue line indicate the existing work. In the diagram compare the two works and shows the difference between them. It shows the proposed algorithm takes the less key generation time compared with the existing work. Setup time is the time required for generating a Public key (PK) while key generation time for generating the Secret key (SK) it Increases based on the number of attributes increased to frame the SK.

IV. CONCLUSION

In this paper focused Medical Healthcare detail of patients among the providers for improving patient’s health. When the patients sharing the healthcare data details with secured and access rights. The main access control to the patients detail with grants rights. In this paper prove towards, using Attributes based secure way of access healthcare information in the Cloud Computing. In this paper proved secure way of healthcare information from the cloud Computing.

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AUTHOR PROFILE



Geetha K is an assistant Professor of Computer Science at Tamil Nadu State in India. She received her Ph.D. degree in computer Science from University of Madras in 2017. Her research interests include: security in Medical Health records, cloud computing and data mining with cloud. Her work on securing cloud computing based papers published in reputed

journals.