Retrieval of Emergency Information of Accident Victim by Using 2D Dynamic QR Code via Cloud Database

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Abstract: As cloud computing based technology is growing, so is the number of services offered over the cloud. Due to this rapid growth in cloud based technology, service providers must be able to deploy cloud service environments very quickly and very easily. Ezilla toolkit will be used for private cloud creation. Quick Response (QR) codes seem to appear everywhere these days. Using the QR codes is one of the most intriguing ways of digitally connecting consumers to the internet via mobile phones since the mobile phones have become a basic necessity thing of everyone. For creating QR codes, the admin will enter text into a web browser and will get the QR code generated. While QR codes have many advantages that make them very popular, there are several security issues and risks that are associated with them. Running malicious code, stealing users' sensitive information and violating their privacy and identity theft are some typical security risks that a user might be subject to in the background while he/she is just reading the QR code in the foreground. A security system for QR codes that guarantees both users and generators security concerns will be implemented.

Keywords: 2D dynamic QR code, Quick Response Code, TTP, GPU, Cloud database, GPR, URL, EzillaToolkit, QRStuff, Norton Snap QR Reader.

I. INTRODUCTION

Nowadays, due to increased number of road accidents there is a need to access a person's medical/contact information in case of emergencies. In order to shorten the admitting procedures when a patient seen in the emergency department is subsequently admitted to the hospital, we will be retrieving their information which is scanned with the help of a QR Code containing a link of the victim's emergency information stored in cloud database. Initially, the user needs to feed his information into the database. Then, we will generate a 2D dynamic QR Code with the help of a unique URL. This 2D dynamic QR Code will be provided to the users in the form of a smart card. This information can be accessed by the user to either view or modify it via organizations website. For accidental emergency purposes this information will be accessed by the authorized users (police and/or the medical authorities) via an organization specific login. If login is successful, the QR Code of the victim which contains his/her emergency information can be scanned. After scanning of QR Code, a link is retrieved. On clicking this link, the victim's details will be retrieved from the main database. This process will be implemented keeping in mind the adverse situations in which a person is denied to be admitted to the hospital until and unless all the information is given to the hospital authority.

II. DIFFERENT TECHNOLOGIES USED

A. Creating Private Cloud: Ezilla Toolkit
The main mission of Ezilla is to provide a friendly interface to access the virtual machine and quickly deploy the high performance computing environment. Ezilla has been developed by Pervasive Computing Team at National Center for High-performance Computing (NCHC). Ezilla integrates the Cloud middleware, virtualization technology, and Web-based Operating System (WebOS) to form a virtual computer in distributed computing environment.

There are four key Widgets that consist of Image Creator Widget, VM Creator Widget, VM Monitor Widget, and VM Control Widget in Ezilla. Due to users have a graphical user interface, users can simply and intuitively manage all of these widgets in Ezilla. According to user's requirements, user can adopt the particular Widgets to arrange their complicated computing tasks via Ezilla Toolkit.

Fig1. Private cloud creation process on Ezilla

B. QR-Code Generator
The QR Code will be generated with the help of "QRStuff"We will be generating dynamic 2D QR Code by

using the user's information link.

Fig2. Generating QR Code using "QRStuff"

Fig. 3 Generated 2D Dynamic QR Code
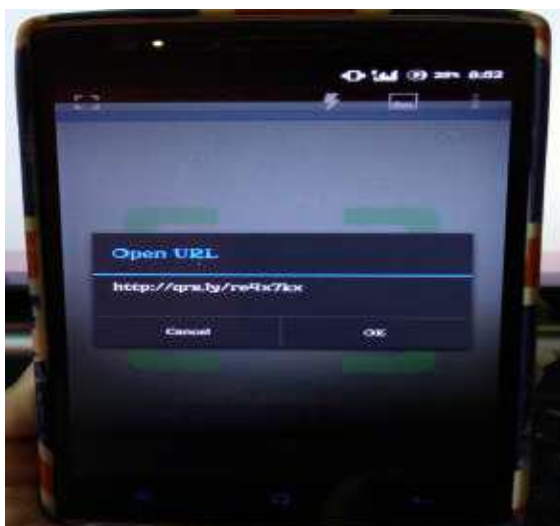

Fig.4 Scanning of QR Code

Fig5. URL obtained after scanning the QR Code

C. Secure QR Code System
The 2D QR Code will be secured with the help of authenticated User Id and password recognition process.

III. LITERATURE SURVEY

Creating Your Own Private Cloud: Ezilla Toolkit-2012(2008-2012)
Authors: Yi-LunPan, Chang-Hsing Wu, His-En Yu, Hui-Shan Chen, Weicheng Huang.

As cloud computing based technology has grown, so have the number of services offered over the cloud. Due to this rapid growth in cloud based technology, service providers must be able to deploy cloud service environments very quickly and easily. To help resolving this issue, an Ezilla deployed private cloud toolkit has been developed by the Pervasive Computing Team (PCT) at the National Center for High-performance Computing (NCHC).

Ezilla uses unattended installation technique, Cloud Middlewares, WebOS and DRBL-SSI mode. Therefore, users can build the whole private cloud easily.

There are three components in Ezilla toolkit, including Ezilla Server, Ezilla Client and intuitive EzillaWebOSInterface.

The ability to distribute and balance the workload across multiple physical as well as virtual computing resources will be tackled in the future development of this research.

2D Dynamic QR-Code Generator- 2010(2006-2010)
Authors: PhaisarnSutheebanjard, Wichian Premchaiswadi.
Quick Response (QR) codes seem to appear everywhere these days. We can see them on posters, magazine ads, websites, product packaging and so on. Using the QR codes is one of the most intriguing ways of digitally connecting consumers to the internet via mobile phones since the mobile phones have become a basic necessity thing of everyone. In this paper, we present a methodology for creating QR codes by which the users enter text into a web browser and get the QR code generated.

DES algortithm is used for encryption/ decryption of QR codes. JQuerry plugin, QRStuff are used to generate the QR code.

Various security threats to QR codes are faced through different sources like running malicious code, stealing users' sensitive information and violating their privacy and identity theft are some typical security risks that a user might be subject to in the background while he/she is just reading the QR code in the foreground.

Secure QR Code System- 2014(2010-2014)

Authors: Raed M. Bani-Hani, YarubA.Wahsheh, Mohammad B. Al-Sarhan.

Quick Response (QR) codes are two dimensional barcodes that can be used to efficiently store small amount of data. They are increasingly used in all life fields, especially with the wide spread of smart phones which are used as QR code scanners. While QR codes have many advantages that make them very popular, there are several security issues and risks that are associated with them. In this paper, a security system for QR codes that guarantees both

users and generators security concerns is implemented. The system is backward compatible with current standard used for encoding QR codes. The system is implemented and tested using a Smartphone application. It was found that the system introduces a little overhead in terms of the delay required for integrity verification and content validation.

Authentication and data integrity, online contents verification, malicious contents isolation algorithms. Secure QR code with the help of authenticated User Id and password recognition process to protect users from online threats. There is further scope of improving QR code security by enhancing authentication and data integrity algorithm.

IV. PROBLEM DEFINITION

Retrieval of Car Owner's Emergency Information by using Dynamic 2D QR Code via Cloud Database.

V. ADVANTAGES

- Less documentation will be needed at the time of hospitalization process as all the information will be stored in the QR Code.
- QR Code is not easy to decrypt if authenticated hence safety of information is maintained.
- Cloud data retrieval is more convenient as compared to traditional methods.
- It will be easy to retrieve the medical information's through the QR Code.

VI. DRAWBACKS AND FUTURE WORK

This system will contain various security threats to QR codes faced through different sources which needs to be reduced. The ability to balance the user's, authenticated authorities and administrative interaction workflow with increased security will be tackled in the future development of this research. Also, cloud storage issues will be looked upon in future.

VII. CONCLUSION

We will implement the storage and retrieval of emergency information of accident victim by using 2D QR Code and will save this information in a cloud database.

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