A Performance-Based Comparative Encryption and Decryption Technique for Image and Video for Mobile Computing

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ABSTRACT

When data exchange advances through the electronic system, the need for information security becomes a must. Protection of images and videos is important in today's visual communication system. Confidential image/video data must be shielded from unauthorized uses. Detecting and identifying unauthorized users is a challenging task. Various researchers have suggested different techniques for securing the transfer of images. In this research, the comparative study of these current technologies also addressed the types of images/videos and the different techniques of image/video processing with the steps used to process the image or video. This research classifies the two types of encryption algorithm, symmetric and encryption algorithm, and provides a comparative analysis of its types, such as AES, MAES, RSA, DES, 3DES, and BLOWFISH.

KEYWORDS

Decryption, Image/Video Encryption, Image/Video Processing, Mobile Computing, Symmetric and Encryption Algorithm

INTRODUCTION

Multimedia data security is becoming increasingly important, along with an increase in digital forms of communication on the Internet. The use of a wide range of images and videos in various types of applications already puts a great deal of attention on security and privacy issues. Multimedia data encryption helps prevent improper and unintended release of confidential information in transit or storage.

Sensitive information is stored on the Internet due to the massive spread of wireless devices. Therefore, safety has become an important issue. Many of the studies also emphasize the significance of cloud computing. Here, individuals can send and store information on the Internet. researches in this domain indicate an increased rate of access attempts and attacks to destroy information. In the cloud computing paradigm, security especially in terms of privacy is a major concern. For data exchange purpose, the entirely secure system remains an unfulfilled target that requires many studies and evaluations.

Cloud computing has expanded over the last couple of years into our lives as a new model for a vast number of business applications. Cloud computing comprises a range of systems that Using powerful data centers and servers that house user-required applications accessible through the Internet

(Sanjay Ram and Vijayaraj, 2011). Such cloud-based computing systems have been used as platforms for media services and IT infrastructure for consumers and businesses (Nazir and other, 2015).

Along with developments in cloud computing, the main concern is posed by the intruder. Unauthorized exposure to cloud-based confidential data is given to attackers. Use a variety of techniques, as shown in Figure 1, to access cloud severe without legal permission. According to DataLossDB, in the first 8 months of 2014 there were 1,279 data breaches, compared with 1,472 cases in 2015(Chou,2013).

Figure 1. Data breach incidents according DataLossDB
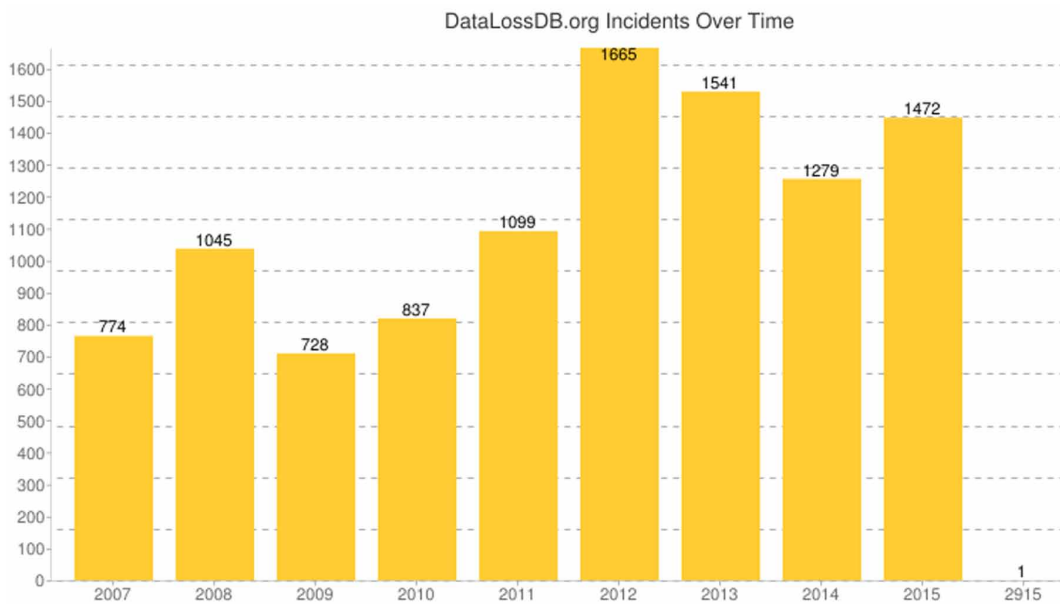
A number of researchers work on these issues to establish consumer trust in cloud computing (Bisong and Rahmat, 2011). It is possible, by virtualization-led techniques, to the complexities of cloud computing (Koganti and other, 2013). Another way to achieve security and confidentiality in CC is to include a particular encryption mechanism (Prasanthi and other, 2014). The use of the Internet is growing fast, and a number of services are required to secure data on the Internet. They all protect internet data by using a particular encryption algorithm. This study includes several well-known encryption algorithms: AES, MAES, RSA, DES, 3DES, and BLOWFISH.

Challenges of Implementing Cryptography Algorithms By Mobile Devices

Mobile Computing Portable devices, such as smartphones, palmtops, etc., offer convenient access to people with diverse sources of global information immediately anywhere at any moment. It is a device that is constantly evolving towards the needs of consumer desires by using the principle of Bring Your Own Device–Bring Your Own Device (BYOD–BYOT). A mobile device may be a Personal Digital Assistant (PDA), a handy Cell Phone or Web Phone, a laptop, or any of the numerous devices mentioned above that allow the user to complete the tasks without being linked or connected to a network. The cellular and smartphone world poses different challenges for consumers and service providers. Physical constraints such as the weight of the unit, the batteries, the size of the screen, the portability, the efficiency of the radio transmission and the error rate are becoming more significant.

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