Manipulation theencrypted Multimedia Cloud data for Secure Storage

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Abstract

To provide opulent media accommodations, multimedia computing has emerged as an eminent technology to engender, edit, and search media contents, such as images, graphics, video, audio, and so on. For multimedia applications and accommodations over the Internet and mobile wireless networks, there are vigorous demands for cloud computing because of the consequential amount of computation required for accommodating millions of Internet or mobile users concurrently. This paper reviews brief literature on multimedia cloud computing aspects and describe some of the security issues in cloud computing, including data integrity, data confidentiality, access control, data manipulation in the encrypted data domain, with deference to the subsisting security algorithms.

Keywords: - Cloud Computing, Multimedia, Internet

1. INTRODUCTION

Advances in processing and recording equipment of multimedia content as well as the availability of free online hosting sites have made it relatively facile to duplicate copyrighted materials such as videos, images, and music clips. Illicitly redistributing multimedia content over the Internet can result in paramount loss of revenues for content engenderers. Finding illicitly-made copies over the Internet is an intricate and computationally sumptuous operation, because of the sheer volume of the available multimedia content over the Internet and the involution of comparing content to identify copies. We present a novel system for multimedia content aegis on cloud infrastructures. The system can be habituated to bulwark sundry multimedia content types, including customary 2- D videos, incipient 3-D videos, images, audio clips, musical compositions, and music clips. The system can run on private clouds, public clouds, or any coalescence of public-private clouds. Our design achieves rapid deployment of content aegis systems, because it is predicated on cloud infrastructures that can expeditiously provide computing hardware and software resources. The design is cost efficacious because it utilizes the computing resources on demand. The design can be scaled up and down to fortify varying amounts of multimedia content being bulwarked. The proposed system is fairly involute with multiple components, including: (i) crawler to download thousands of multimedia objects from online hosting sites, (ii) signature method to engender representative dactylograms from multimedia objects, and (iii) distributed matching engine to store signatures of pristine objects and match them against query objects. We propose novel methods for the second and third components, and we utilize off-the-shelf implements for the crawler. We have developed a consummate running system of all components and tested it with more than 11,000 3-D videos and 1 million images. We deployed components of the system on the Amazon cloud with varying number of machines (from eight to 128), and the other components of the system were deployed on our private cloud. This deployment model was habituated to show the flexibility of our system, which enables it to efficiently utilize varying computing resources and minimize the cost, since cloud providers offer different pricing models for computing and network resources. Through extensive experiments with authentic deployment, we show the high precision (in terms of precision and recall) as well as the scalability and elasticity of the proposed system. The contributions of this paper are as follows. • Consummate multi-cloud system for multimedia content bulwark. The system fortifies variants of multimedia content and can efficaciously utilize varying computing resources. • Novel method for engendering signatures for 3-D videos. This method engenders signatures that capture the depth in stereo content without computing the depth signal itself, which is a computationally extravagant process. • Incipient design for a distributed matching engine for high dimensional multimedia objects. This design provides the primitive function of finding -most proximate neighbors for astronomically immense-scale datasets. The design withal offers an auxiliary function for further processing of the neighbors. This two-level design enables the proposed system to facilely support variants of multimedia content. For example, in finding video copies, the temporal aspects need to be considered in integration to matching individual frames. This is unlike finding image copies. Our design of the matching engine employs the Map Reduce programming model.

2. RELATED WORK

Existing system

The quandary of forfending sundry types of multimedia content has magnetized paramount attention from academia and industry. One approach to this quandary is utilizing watermarking, in which some distinctive information is embedded in the content itself and a method is utilized to probe for this information in order to verify the authenticity of the content. Many precedent works proposed different methods for engendering and matching signatures. These methods can be relegated into four categories: spatial, temporal, color, and transform-domain. Spatial signatures (concretely the block-predicated) are the most widely utilized. Youtube Content ID, Vobile VDNA, and MarkMonitor are some of the industrial examples which use fingerprinting for media aegis, while methods such as can be referred to as the academic state-of-the-art.

Disadvantages of subsisting system

Watermarking approach may not be felicitous for already-relinquished content without watermarks in them. Watermarking may not be efficacious for the rapidly incrementing online videos, especially those uploaded to sites such as YouTube and played back by any video player. Spatial signatures impotency is the lack of resilience against astronomically immense geometric transformations. Temporal and color signatures are less robust and can be habituated to enhance spatial signatures. Transform-domain signatures are computationally intensive and not widely utilized in practice.

Proposed system

We present a novel system for multimedia content auspice on cloud infrastructures. The system can be acclimated to bulwark sundry multimedia content types. In our proposed system we present consummate multi-cloud system for multimedia content bulwark. The system fortifies variants of multimedia content and can efficaciously utilize varying computing resources. Novel method for engendering signatures for videos. This method engenders signatures that capture the depth in stereo content without computing the depth signal itself, which is a computationally sumptuous process. Incipient design for a distributed matching engine for high-dimensional multimedia objects. This design provides the primitive function of finding -most proximate neighbors for immensely colossal-scale datasets. The design additionally offers an auxiliary function for further processing of the neighbors. This two-level design enables the proposed system to facilely support variants of multimedia content. The focus of this paper is on the other approach for bulwarking multimedia content, which is content-predicated copy detection (CBCD). In this approach, signatures are extracted from pristine objects. Signatures are additionally engendered from query (suspected) objects downloaded from online sites. Then, the kindred attribute is computed between pristine and suspected objects to find potential copies.

Advantages of proposed system

- Accuracy.
- Computational Efficiency.
- Scalability and Reliability.
- Cost Efficiency.
- The system can run on private clouds, public clouds, or any coalescence of public-private clouds.
- Our design achieves rapid deployment of content auspice systems, because it is predicated on cloud infrastructures that can expeditiously provide computing hardware and software resources.
- The design is cost efficacious because it utilizes the computing resources on demand.
- The design can be scaled up and down to fortify varying amounts of multimedia content being bulwarked.

3. IMPLEMENTATION

Data owner Module

Bulwark different multimedia content types, including 2-D videos, 3-D videos, images, audio clips, musical compositions, and music clips. The system can be deployed on private and/or public clouds. Our system has two novel components: (i) method to engender signatures of 3-D videos, and (ii) distributed matching engine for multimedia objects. The signature method engenders robust and representative signatures of 3-D videos that capture the depth signals in these videos and it is computationally efficient to compute and compare as well as it requires minuscule storage.

Data Utilizer Module

Matching engine achieves high scalability and it is designed to fortify different multimedia objects. We implemented the proposed system and deployed it on two clouds: Amazon cloud and our private cloud. Our experiments with more than 11,000 3-D videos and 1 million images show the high precision and scalability of the proposed system. In integration, we compared our system to the auspice system utilized by YouTube and our results show that the YouTube bulwark system fails to detect most facsimiles of 3-D videos, while our system detects more than 98% of them

Encryption Module

Multimedia content auspice systems utilizing multi-cloud infrastructures .The proposed system fortifies different multimedia content types and it can be deployed on private and/or public clouds. Two key components of the proposed system are presented. The first one is an incipient method for engendering signatures of 3-D videos. Our method constructs coarse-grained disparity maps utilizing stereo correspondence for a sparse set of points in the image.

Rank Search Module

Rank needs to store the whole reference dataset multiple times in hash tables; up to 32 times. On the other hand, our engine stores the reference dataset only once in bins. Storage requisites for a dataset of size 32,000 points betoken that Rank needs up to 8 GB of storage, while our engine needs up to 5 MB, which is more than 3 orders of magnitude less. These storage requisites may render Rank not applicable for astronomically immense datasets with millions of points, while our engine can scale well to fortify massive datasets.

4. EXPERIMENTAL RESULTS

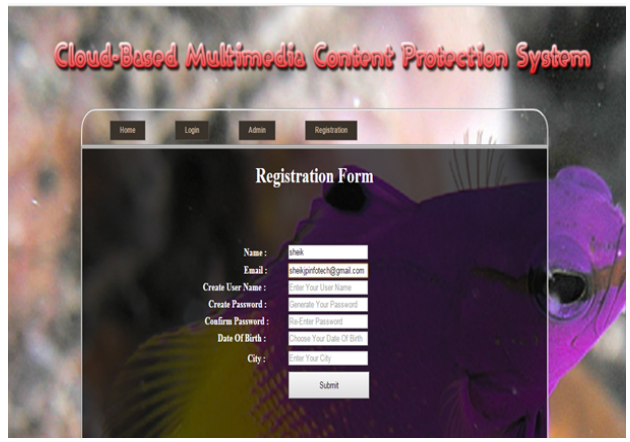

Fig:-1 User Registration Page

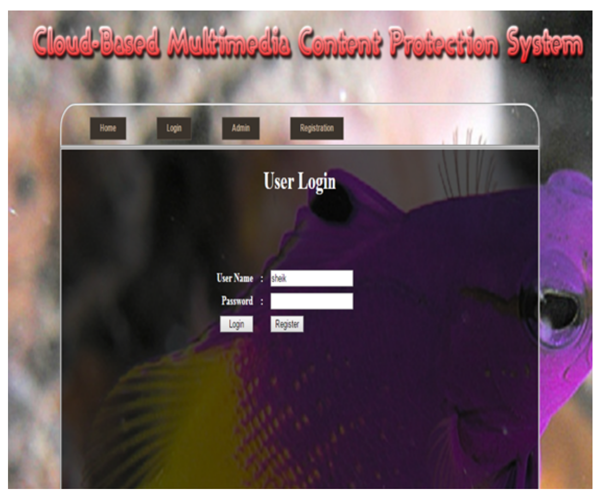

Fig:-2 User Login Page

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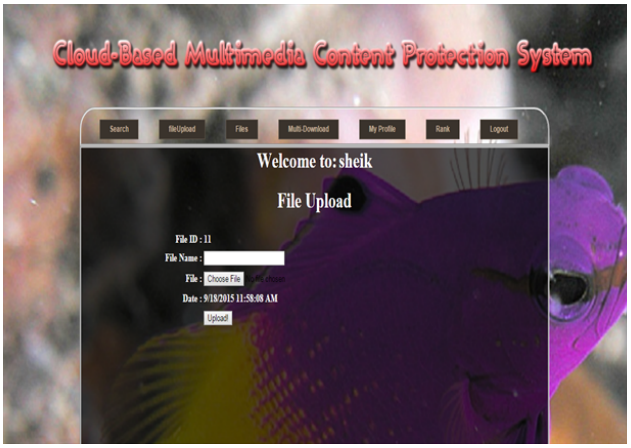

Fig:-3 Data Upload

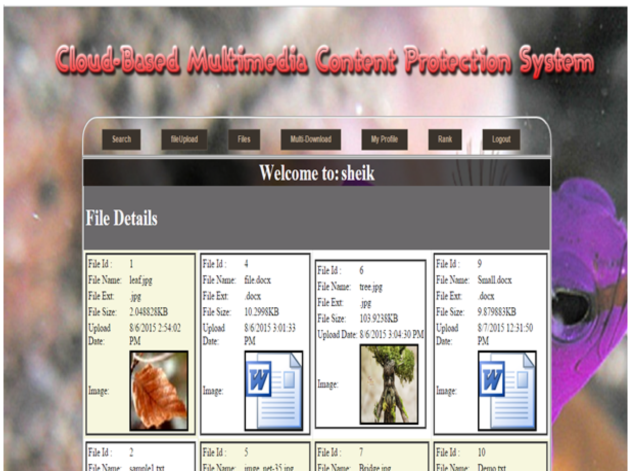

Fig:-3 Multimedia Operations Page

Fig:-3 Result on Graph

5. CONCLUSION

There are sundry solutions proposed to ascertain cloud storagesecurity, including certification, ascendancy, audit and encryption in last several years. It is essential for the cloud storage to be equipped with storage security solutions so that the whole cloud storage system is reliable and trustworthy. In this paper, we conducted a brief survey on multimedia cloud computing aspects and described some security issues in cloud computing, including data integrity, data confidentiality, access control, data manipulation in the encrypted data domain, etc along with security algorithms. An encryption predicated solution has additionally been proposed to procure data storage security.

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