A Secure Multimedia Data Storage in Cloud

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Abstract: -- We propose a new design for large-scale multimedia content protection systems. Our design leverages cloud infrastructures to provide cost efficiency, rapid deployment, scalability, and elasticity to accommodate varying workloads. The proposed system can be used to protect different multimedia content types, including 2-D videos, 3-D videos, images, audio clips, songs, and music clips. The system can be deployed on private and/or public clouds. Our system has two novel components: (i) method to create signatures of 3-D videos, and (ii) distributed matching engine for multimedia objects. The signature method creates 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 small storage. The distributed matching engine achieves high scalability and it is designed to support 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 accuracy and scalability of the proposed system. In addition, we compared our system to the protection system used by YouTube and our results show that the YouTube protection system fails to detect most copies of 3-D videos, while our system detects more than 98% of them. This comparison shows the need for the proposed 3-D signature method, since the state-of-the-art commercial system was not able to handle 3-D videos.

Keywords:- Data Storage ,3D Videos, Cloud Security.

1. INTRODUCTION

Cloud computing is the use of computing resources (hardware and software) that are delivered as a service over a network (typically the Internet). The name comes from the common use of a cloud-shaped symbol as an abstraction for the complex infrastructure it contains in system diagrams.

Cloud computing entrusts remote services with a user's data, software and computation. Cloud computing consists of hardware and software resources made available on the Internet as managed third-party services. These services typically provide access to advanced software

applications and high-end networks of server computers.

2. RELATED WORK

Existing System

The problem of protecting various types of multimedia content has attracted significant attention from academia and industry. One approach to this problem is using watermarking, in which some distinctive information is embedded in the content itself and a method is used to search for this information in order to verify the authenticity of the content. Many previous works proposed different methods for creating and matching signatures. These methods can be classified into four categories: spatial, temporal, color, and transform-domain. Spatial signatures (particularly the block-based) are the most widely used. You tube Content ID, Mobile VDNA, and Mark Monitor are some of the industrial examples which use fingerprinting for media protection, while methods such as can be referred to as the academic state-of-the-art.

Disadvantages of Existing System

Watermarking approach may not be suitable for already-released content without watermarks in them. Watermarking may not be effective for the rapidly increasing online videos, especially those uploaded to sites such as YouTube and played back by any

video player. Spatial signatures weakness is the lack of resilience against large geometric transformations. Temporal and color signatures are less robust and can be used to enhance spatial signatures. Transform-domain signatures are computationally intensive and not widely used in practice.

Proposed System

We present a novel system for multimedia content protection on cloud infrastructures. The system can be used to protect various multimedia content types. In our proposed system we present complete multi-cloud system for multimedia content protection. The system supports different types of multimedia content and can effectively utilize varying computing resources. Novel method for creating signatures for videos. This method creates signatures that capture the depth in stereo content without computing the depth signal itself, which is a computationally expensive process. New design for a distributed matching engine for high-dimensional multimedia objects. This design provides the primitive function of finding -nearest neighbors for large-scale datasets. The design also offers an auxiliary function for further processing of the neighbors. This two-level design enables the proposed system to easily support different types of multimedia content.

3. IMPLEMENTATION

Data Owner Module

Protect different multimedia content types, including 2-D videos, 3-D videos, images, audio clips, songs, and music clips. The system can be deployed on private and/or public clouds. Our system has two novel components: (i) method to create signatures of 3-D videos, and (ii) distributed matching engine for multimedia objects. The signature method creates 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 small storage.

Data User Module

Matching engine achieves high scalability and it is designed to support 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 accuracy and scalability of the proposed system. In addition, we compared our system to the protection system used by YouTube and our results show that the YouTube protection system fails to detect most copies of 3-D videos, while our system detects more than 98% of them

Encryption Module

Multimedia content protection systems using multi-cloud infrastructures .The proposed system supports 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 a new method for creating signatures of 3-D videos. Our method constructs coarse-grained disparity maps using 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 requirements for a dataset of size 32,000 points indicate 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 requirements may render Rank not applicable for large datasets with millions of points, while our engine can scale well to support massive datasets.

4. EXPERIMENTAL RESULTS

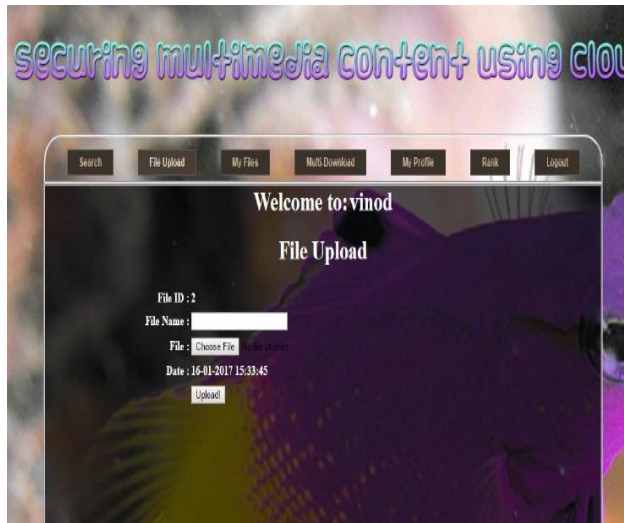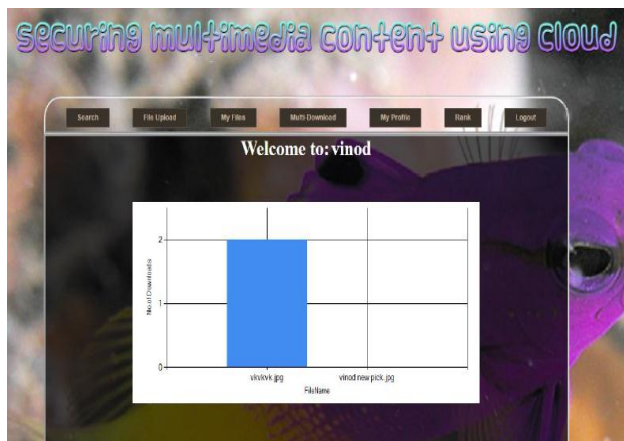Fig. 1 Authentication and Authorization

Fig. 2 Data Upload

Fig:-3 Results On Graph

5. CONCLUSION

In this paper we addressed the problem of packets dropped at an intermediate node or final node. Where the attacker is a part of the Network who is aware of Network secrets and also the implementation details.

In order to Overcome the problem of dropped Packets we develop Adaptive Rate Control Scheme that Reconfigure the dropped Packets. We Analyze the Security of our schemes and through simulation we can achieve the higher throughput by Re-sequencing the dropped Packets.

6. REFERENCES

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