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SECURITY MANAGEMENT USING CLOUD COMPUTING AGAINST CRIMINALS AND ANTI – SOCIAL ELEMENTS FROM ESCAPING

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***Abstract*— Nowadays the crimes committed by the criminals (Domestic and International) Anti – Social elements, international terrorists etc are more in number and are giving threat to the national security and integrity of the nations. In spite of tight security arrangement at the national boundaries of the respective countries by the various security forces (viz) Police, Air force etc, those dangerous elements are flying easily by duplicate passports, and also changing their physical appearance by changing their getups, plastic surgery on their faces, etc with the help of international links among them.**

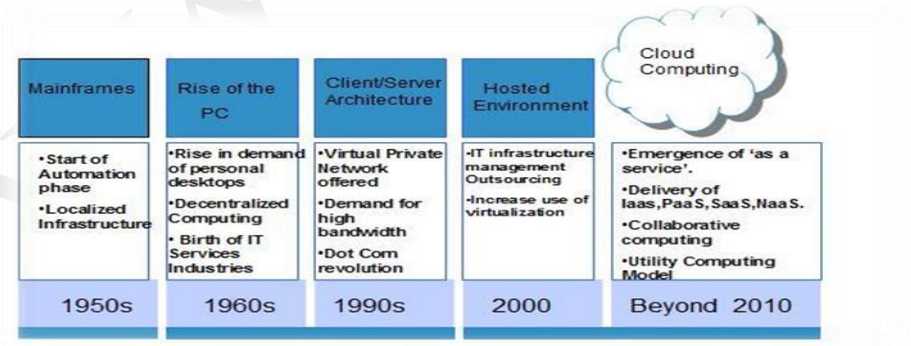
Though MOUs (Memo of Understanding) between the nations in sharing the movements and activities of criminals through interpoles, they are simply escaping with various economical and political supports. Therefore it is a global responsibility to identify and prevent the movement of criminals in island and in abroad, each and every country is in continuous searching of new methods and technology on this issue. Here under, in this thesis, it is discussed to identify the criminals by retinal scanning of the eyes using cloud computing. Retinal scan is unique for every individual and by introducing Retinal scanning, every individual can be easily identified.

Keywords*— *Cloud Computing, Cloud Storage

I. INTRODUCTION

The world with more technologies is equal to the world with more anti – social elements. Even though it is not fair to be stay without inventing new technologies. Our goal is to compete the anti – social elements and to overcome them using our brain. This presentation is a part of innovations which could control some of the actions of the anti – social elements. Using this method we could block the person from escaping from the eyes of the law. Moreover it is our duty to be in the side of the laws and help them with new technologies which could help them to lessen their job. Let us now see in detail about the presentation.

A. History of Cloud Computing



The term "cloud" is used as a representation of the Internet and other communication systems as well as an abstraction of the underlying infrastructures involved.

The current state of cloud computing rests on a strong internet backbone, but that isn't how it started or where it ends. The private cloud is now an important part of many business IT infrastructures, making elements like virtualisation and service – oriented architecture even more important. If we look at the development of the cloud over the years, it is easier to see why the cloud is such an integral component of modern IT solutions.

- **Principle of Cloud Computing:** The images of serious computing in the 50's and 60's – those pictures of row upon row of magnetic tape machines – are actually a foreshadowing of a cloud computing structure. Those giant mainframes were installed in schools, government organizations, and large corporations because they were the only places that could possibly house all those machines.

- **Early history – Virtual Machines:** The real implementation of Virtual Machines came in the 70s when IBM released an OS called VM. This allowed multiple distinct computers to reside in the same processing environment, leading to the type of interactions we know call virtualization.

  It means that each individual user would have a machine with its own memory, processor, and other hardware components, but many of the resources would be shared by others.

- **Middle Ages –** The Internet potential: Telecommunications solutions were an integral part of cloud development, and this became possible with the commercialization of the internet. This would eventually become the forerunner of the modern internet.

  The notion of connecting people all over the world to access programs and data from different locations became a real possibility.

- **Modern History –** Service Oriented Architecture: The rise of commercial networking wasn't an easy one, and once the first bubble burst in 2000, companies had to start rethinking their business models.

  In the search for new ways to monetize the internet, many companies started to realise that they could provide a service model to deliver usable solutions and resources. Salesforce.com was the company that really started this trend by pioneering the concept of delivering enterprise – class applications over a simple website. Next, in 2002, Amazon got on board the trend with Amazon web services. This gave users the ability to access storage, computation solutions, and other apps through the internet. In 2006, they went further with the Elastic Compute Cloud (EC2), which basically let developers rent space on their computers to store and run their own apps. It was an entire infrastructure that they delivered as a service.

  By 2009, most of the industry influencers were on board, with companies like Microsoft and Google delivering apps to the average consumer as well as businesses in the form of simple, accessible services.

II. TYPES OF CLOUD

Cloud Computing is a model for enabling ubiquitous, convenient, on – demand network access to a shared pool of configurable computing resources (e.g. networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

- **Private Cloud:** The Cloud infrastructure is provisioned for exclusive use by a single organization comprising multiple consumers. It may be owned, managed and operated by the organization, a third party, or some combination of them, and it may exist on or off premises.

- **Community Cloud:** The Cloud infrastructure is provisioned for exclusive use by a specific community of consumers from organizations that have shared concerns. It may be owned, managed, and operated by one or more organizations in the community, a third party, or some combination of them, and it may exist on or off premises.

- **Public Cloud:** The Cloud infrastructure is provisioned for open use by the general public. It may be owned, managed, and operated by a business, academic, or government organization, or some combination of them. It exists on the premises of the cloud provider.

- **Hybrid Cloud:** The cloud infrastructure is a composition of two or more distinct cloud infrastructures that remain unique entities, but are bound together by standardised or proprietary technology that enables data and application portability.

III. CLOUD STORAGE

Cloud Storage is a way to save information to the web. Cloud Computing services are online services which store this information to a safe and secure location online; they offer a quicker, easier and safer backup than conventional methods of file storage. Using Cloud Computing, we can access our files and programs from any computer and from anywhere in the world; all we need is an internet connection.

Cloud Storage is a service model in which data is maintained, managed and backed up remotely and made available to users over a network. It is maintained, operated and managed by a cloud storage service provider on storage servers that are built on virtualization techniques. Cloud Storage can provide the benefits of greater accessibility and reliability; rapid deployment; strong protection for data backup, archival and disaster recovery purposes; and lower overall storage costs as a result of not having to purchase, manage and maintain expensive hardware.

- **Personal Cloud Storage:** Personal Cloud Storage is also known as Mobile Cloud Storage, is a subset of Public Cloud Storage that applies to store an individual's data in the cloud and providing the individual with access to the data from anywhere. It also provides data syncing and sharing capabilities across multiple devices. Apple's icloud is an example of Personal Cloud Storage.

- **Public Cloud Storage:** Public Cloud Storage is where the enterprise and storage service provider are separate and there aren't any cloud resources stored in enterprise's data centre. The Cloud Storage provider fully manages the enterprise's Public Cloud Storage.

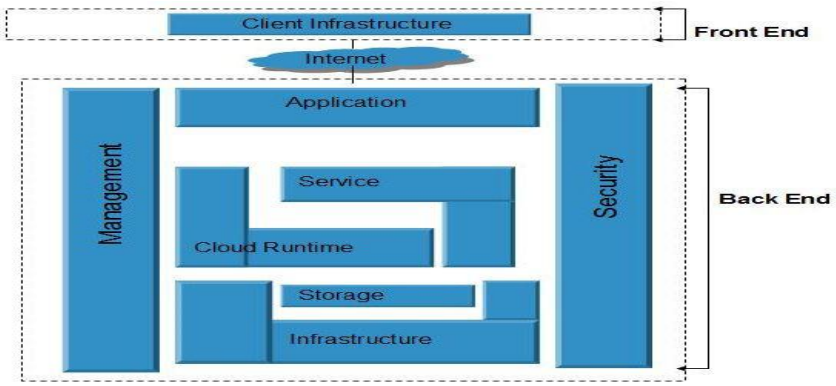
- **Private Cloud Storage:** A form of Cloud Storage where the enterprise and Cloud Storage provider are integrated in the enterprise's data centre. In Private Cloud Storage, the storage provider has infrastructure in the enterprise's data centre that is typically managed by the storage provider. Private Cloud Storage helps resolve the potential for security and performance concerns while still offering the advantages of Cloud Storage.

- **Hybrid Cloud Storage:** Hybrid Cloud Storage is a combination of Public and Private Cloud Storage where some Critical data resides in the enterprise's Private Cloud while other data is stored and accessible from a Public C.oud Storage Provider.

IV. CLOUD ARCHITECTURE

Cloud Computing Architecture refers to the components and subcomponents required for Cloud Computing. These components typically consist of a front end platform (fat client, thin client, mobile devices), back end platforms (servers, storage) a cloud based delivery, and a network (Internet, Intranet, Inter cloud). Combined, these components make up cloud.

The Cloud Computing Architecture of a cloud solution is the structure of the system, which comprise on – premise and cloud resources, services, middleware and software components, geo – location, the externally visible properties of those, and the relationships between them.



It's helpful to divide it into two sections: the front end and the back end. They connect to each other through a network, usually the Internet. The front end is the side the computer user or client sees. The back end is the "Cloud" section of the system.

The front end includes the client's computer or computer network and the application required to access the Cloud Computing system. Not all Cloud Computing systems have the same user interfaces. Services like web – based e – mail programs leverage existing web browsers like Internet Explorer or Firefox. Other systems have unique applications that provide network access to clients.

On the back end of the system are the various computers, servers and data storage systems that create the "cloud" of computing services. In theory, a cloud computing system could include practically any computer program we can imagine, from data processing to video games. Usually, each application will have its own dedicated server.

V. WORKING OF CLOUD COMPUTING

Unlike shared grids, which are based on open source technologies, Clouds are a proprietary technology. Only the resource provider knows exactly how their cloud manages data, job queues and security requirements.

To understand exactly how Cloud Computing works, let's consider that the cloud consists of layers – mainly the back end layers and the front end layers. The front layers are the parts we see and interact with. When we access our profile on our Face book account For E.g. we are using software running on the front end of the cloud. The back end consists of the hardware and the software architecture that delivers the data we see on the front end.

Clouds use a network layer to connect user's end point devices, like computers or smart phones, to resources that are centralized in a data centre. Users can access the data centre via a company network or the internet or both. Clouds can also be accessed from any location, allowing mobile workers to access their business systems on demand.

Applications running on the Cloud take advantage of the flexibility of the computing power available. The computers are set up to work together so that it appears as if the applications were running on one particular machine. This flexibility is a major advantage of Cloud Computing, allowing the user to use as much or as little of the cloud resources as they want at short notice, without any assigning any specific hardware for the job in advance.

VI. WORKING OF THE ARCHITECTURE

The Retinal Scanner which is connected to system input. The system input is proceeded to check with the criminal database of the 7 continents. Then the result is to be generated that the person is criminal or not. If the result is false, then the signal is directed to the retinal scanner. If else then the signal is directed towards the system of airport administration officer using alarm beep. If no one notices the alarm beeps for about a minute. While the officer looks at the system, the particular suspected person is noted with a mark using graph. Then the person is rounded up by the airport officers.

A. Merits of the Paper:

The merits of the paper are:

- No physical error tension for the administrator.
- No need of monitoring continuously day and night.
- Administrators have enthusiastic motivation to work.
- No one could change the retinal image of themselves.

B. Demerits of the paper:

Costly if installed with high quality instruments.

- If no alternate power source then it is a loss while power cut.

- Criminals who are under the criminal database can only be identified by this method. But persons who have committed crime but they are not declared as criminals and whose data are not find place in the database cannot be identified and captured.
- If the retinal scanner could not penetrate into the contact glasses then we will be failed at the 1st stage itself.

VII. CONCLUSION:

Therefore, it is being proven that using cloud computing we can monitor and control the activities in schools, colleges, business centres, etc. Also it can be used to have our control in all public places. This paper could be installed in each and every places like malls, theatres, bus stands, and in every public places to control the roaming of the anti – social elements. If it is done then the culprit's retinal scan is sent to the public places through mail or message to be scanned at all places so that the person could not move out of that place.

A. Future Areas of Research:

- To eradicate the demerits above.
- To find who are to commit crime and could find using their tensed state.
- To design with directly having report to the nearest police station.
    - To search a culprit who escaped from the prison using his retinal scan stored in the cloud.