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ABSTRACT

Cloud computing is used for data storing in distributed environment and these data can be accessed easily from anywhere anytime. E Voting can be thought of as Good Governance in India. Current E-Voting system has some issues of counting votes, fraud in making dummy votes and lake of privacy. However, to solve such issues cloud computing offers numbers of opportunities, but the developments of cloud computing technologies are still at babyhood stage. In this paper, we represent the survey of cloud computing, review of different methods used for cloud based E-Voting system over the aadhar-card, SMS and Traditional System. The main aim of this paper is to find out the challenges faced in current E-Voting system and privacy issues, which are important aspect of E-Voting.

Keywords: Cloud Computing, E-Voting

1. INTRODUCTION

1.1 Cloud Computing

Cloud computing is a new technology that provides the computing platform for sharing resources that includes infrastructures, software, data centers, applications, and business processes. It is a focus on sharing data. These nodes include end user, computers, data centers and cloud services. Cloud computing provides the computer technology via the Internet. This was the predecessor to today’s Internet, which currently has approximately 2.8 billion users worldwide [7]. With the rapid development of processing and storage technologies and the success of the Internet, computing resources have become cheaper, more powerful and more ubiquitously available than ever before. This technological trend has enabled the realization of a new computing model called cloud computing [3]. Clouds offer services that can be grouped into three categories: software as a service (SaaS), platform as a service (PaaS), and infrastructure as a service (IaaS).

1.1.1 Infrastructure as a Service: IaaS refers to on-demand provisioning of infrastructural resources, usually in terms of VMs. The cloud owner who offers IaaS is called an IaaS provider.

1.1.2 Platform as a Service: PaaS refers to providing platform layer resources, including operating system support, software development frameworks and software patches.

1.1.3. Software as a Service: SaaS refers to providing on-demand applications over the Internet.

1.2 Types of Clouds:

1.2.1 Public Cloud: These services are open for all public
use. These clouds are owned and maintained by third parties. It may be free of cost.

1.2.2. Private Cloud: These clouds are hosted and managed by single organization. These cloud services are accessible only to authorized members of the organization.

1.2.3. Hybrid Cloud: It is the combination of both public and private cloud. It not only provides the benefits of both public and private cloud models, but also overcomes their drawbacks. [9] [2]. When existing services of the private cloud does not satisfy the requirements then organization can use the services of public cloud and that leads to hybrid cloud.

1.3 Characteristics of Cloud Computing
Cloud computing provides many prominent features those are different from traditional system.
Multi-tenancy: In this cloud environment, services owned by different providers are located to one single data center. The mutual management and performance issues will be shared among service provider.
Shared resource pooling: Resource pooling allows cloud provider to provide one pool of large IT scale resources to serve multiple cloud consumers. Different resources will be assigned or reassigned according to the cloud consumer demand.[3]

1.4 Benefits of Cloud Computing:
Cloud helps you in analyzing large amount of data and in detecting any discrepancy. Provides mechanism to enhance the security and reliability of data.
It provide the location independent platform for the communication using fast reliable Internet with efficient fast computing power so that a user can work anytime form anywhere using the web cast the votes.
It allows you to do backup and also restoring the data.
It will provide the quality services at the tome of high load by using the number of resources.
E voting application can be speedup using the cloud architecture that provides more powerful server, more memory, CPU, and fast storage device.

1.5 E-Voting
[5] E voting is an election system that allow voter to cast their votes electronically. This voting technology includes punched cards, optical scan voting system. It can involve transmission of votes via computer network or Internet.
In General, Two main types of e voting can be identified:
E voting which is physically supervised by independent electoral authorities (e.g. voting machine located at polling stations)
Remote e voting, which is not physically, and it will also supervised by independent electoral authorities (e.g. voting from personal computer, mobile phone via Internet) called I voting.
E-voting using cloud technology provides the following solutions to overcomes the deficiency in the existing system:
It will reduce the expenses of voting by reducing the cost of printing and distribution of the paper, creating the polling booths etc.
It will provide speed, privacy, authentication, and user-friendly environment to the voter. Number of user can cast their votes at a one time depending on the computer and Internet connection.
E voting system is directly connected to the election commission server so the system is fair and accurate.
E Voting system provides the facility to record the individual’s vote and count accurately, so the result can be declared quickly.

2. LITERATURE REVIEW
2.1 Related Work:
Cloud computing is used in many different area, one of the area is e voting. There are many methods have been proposed in E voting with cloud computing, in [7] author has used traditional voting system with open cloud system. The voter identity is done manually by election officer by cross verifying the voter Id and their manual data present over the database.
The voter identity is not cross verified by the electronic voting machine, so there is no complete security over the voting machine system. This cloud voting system where the system verifies the voter uniquely from his database present on the server. In [7] there will provide security and authenticity of the voter the voting system. The cloud voting system will be controlled over the centralized server of the voting system. The voter will cast the vote once then automatically the system will close.
Author explains the existing system using DRE voting system. This system provides a smartcard for every voter to vote. Using smartcard voter can vote for the candidate of their choice. The advantages of using this card is that it reduces the chances of duplication in voting a single voter can cast only in vote with that smartcard number. It will provide confidentiality, and security in the system by storing the biometric details is the registered earlier. After the process of voting is completed the voter is given to chance to review and confirm their vote but it will give only 30sec for reviewing and for the conformation. This proposed system is a two-fold system of SMS voting system and website voting.

2.2 SMS Voting System:
Voter can cast his/her vote by sending SMS to the system using any kind of hand set through the mobile switching center. In this case voter dial a toll-free number in which he/she has to answer the recorded call. During the voting process the voter has to give his/her voice sample on the call in order to prove his/her identity and avoid frauds. This system works only on Android phone.

2.3 Website Voting System:
Voter can also use the Internet for the Voting proposed. Both android phone and the website are link with same database on backend so that the voter can vote from two-way. Only once voter can vote otherwise system will deny him/her to do so.
2.3.2 Voting Phase: Voter cast his/her votes for the election and voting authority encrypt the vote and sends it to counting authority.

2.3.4 Counting Phase:
Counting authority directly count the votes and declare the election results. In this case security is major issue for voting. Author explains the electronic election process or e-voting, involves three basic steps:

1) Election booth setup
2) Voting
3) Result

Election booth setup: It required polling officer for election setup, which will provide the infrastructure for voter to scan the fingerprint and iris.

Voting: They provide one voting website in which first system will authenticate the identity of voter if successful voter can cast there vote. Voter will clicking on election and election ballot is appear when he/she submit the ballot the vote is encrypted and the voter issue a token number and now voter is block so it can not vote again.

Result: Now result is calculated after voting has ended and election commission declares result.

About this proposed system they use three modules:

1) User Request and authentication (URA)
2) Vote counting server (VCS)
3) Service management (SM)

User Request and authentication: When voter request for doing vote from any of the polling center of the country then system ask for UID (user identification) No and scan the iris and fingerprint of both the hand. Then UAS (User Authentication Server) will verify the identity by using UID card i.e., AADHAR CARD. If authentication is done then voter is connected to polling server and e-ballot paper is loaded on register computer that is mention on aadhar permanent address.

Vote counting server: It is the server that receives the votes by the election commission server. The VCS collects the votes and provide the result.

Service management: The model will essentially monitor the services in terms of authenticity, privacy, security, service delivery time and quality, also responsible for secured service by fetching and delivering the service.
Reduces the expenses of voting by reducing the cost of paper ballots, creating polling booths & parties expenses. Voter can cast their votes for anyplace. It will provide speed, authentication and user-friendly environment to the voter.

3. CONCLUSION

In e-voting with cloud computing, we conclude that users can do their votes easily but the problem is that they can’t provide the privacy to the user. They can see the users’ details, and they can also do the changes. There are different types of methods like Message, web Sites, using Aadhar Card, Phone calls etc., to do voting in that only one problem will arrive that is a user privacy so using pay-liar algorithm we can secure the user privacy and maintain safe.

REFERENCE

[2] Haibo Yang, Mary Tate,”Where are we at with cloud computing?: A Descriptive Literature Review”, AIS Electronic Library(AISeL), Dec 2009.


