Cloud Based Online Certificate Verification System

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Abstract— **A Cloud based system is proposed for the verification of documents in efficient, quick and reliable manner. This method does verification in limited time and the user get authentic results at any time, across the globe .**

This proposed model will help to eliminate fraudulent documents and would also accelerate the online document verification system because of the new architecture and secure Cloud computing technology. It would enable users and developers to utilize computing resources that are virtualized and serve the needs of the end user via the internet.

Keywords— Cloud Computing; University; Certificate Verification; Data as a service.

I. INTRODUCTION

Rapid growth of any country, depends upon the infra-structure, regulatory policies of government, natural recourses, skilled work force and many other elements available to it. The most important factors in these is skilled workforce. With the increased demand of the skilled work force, India has opened several universities to meet out the demand of industries, education and heath care sectors. As per the statistics India has total 620 universities (as on UGC report dated 11-02-2013)[1].

Type of University	Number
State University	298
Deemed to be University	130
Central University	44
Private University	148

With this increase in the number of universities tremendous challenges arrived in the education system as well as validation system of universities. One of the major issue which is being faced by all the universities and the government sectors, public sectors as well as private sector entities is the issue of fake degree .

The Universities have there own system of verification but is not being utilized effectively due to time consuming process. We propose Online Certificate Verification system based on cloud computing which will complete the process of verification in few seconds.

II. 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 paradigm that focuses on sharing data and computations over a scalable network of nodes. These nodes include end user, computers, data centers and cloud services. Cloud computing provides the computing technology via the internet. It enables users and developers to utilize computing resources that are virtualized.

According to National Institute of Standards and Technology, USA (NIST) "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"[2].

Cloud computing is well established concept at present. There is a considerable space to incorporate the certificate verification system with cloud computing . In An integrated approach can certainly be proved as a better, efficient and authentic verification of the document process.

Cloud computing is basically a process to use IT resources (Hardware , Software or Data) and provide shared services , on demand basis. The majority of work is carried out with the category of DaaS, i.e. Data as a service using the cloud computing . DaaS is delivery specific, valuable data on demand, Its a Web based data management service, which uses concept of cloud computing and allows organizations to digitize paper documents, enabling data to be searched, verified, stored, and shared[3][4].

A. The benefits of cloud computing :

Cloud helps in analyzing large amount of data by detecting any discrepancy and redundancy. It provides mechanism to enhance the security and reliability of data to validate the user from database.

Cloud provides the location independent platform for the communication using fast reliable internet with efficient fast computing power so that a user can work at anytime from anywhere using the web to verify the document.

Cloud virtualization technology allows backup and restoring [5].

Cloud helps to provide the quality services at the time of high load by using the number of resources. Cloud computing supports mechanism and policies for the distribution of load among the resources and provide unlimited throughput by adding server[6].

Document verification applications can be speedup using the cloud architecture that provides more powerful servers, more memory, CPU and fast storage device at the reduced cost. The goal of cloud computing is to apply super computing power to perform trillions of computations per second.

III. PROPOSED MODEL

The Proposed model offers a digital solution to the current manual document verification problem. It will save time and Money .The proposed solution for centralized data storage saves time on data verification and a lot of money spent on postal. In this model we include technology architecture of cloud computing and simplify its functioning [Fig 1.].It will provides the Document Verification services more efficient, reliable, quick and effective in terms of computational efficiency .

In Our proposed model[Fig-1] ,when the user want to avail any service like document verification , the cloud based model authenticate the user, and provide the list of services. The model will manage the services to the end user in terms of cost effectiveness , quality and fast service delivery from the available service provider.

The proposed model includes three functional modules namely:

A. *Authentication Request (AR)*

B. *Verification Server (VS)*

C. *Service Provider Management (SPM)*

A. *Authentication Request (AR)*

when a user request comes for the document verification application the proposed model would validates and verify the users authenticity by interfacing the user authentication server.

B. *Verification Server (VS):*

Once the user authentication is done, the request is forwarded to the service provider to get the desired service from the list of available service , Then the user enters the name and enrollment number of the candidate, and the server will verify the result from the university database and generate the result.

C. *Service Provider Management (SPM):*

The above certified and mapped service is then need to be managed to make it up to the mark of the user or end user satisfaction level. The model will essentially monitor the mapped service in terms of cost effectiveness, service delivery time and quality. The model would also be responsible for secured service by fetching and delivering the service through secured transmission channel ensuring the user satisfaction. The fig I. state that when the user request for the Document Verification , first the service provider authenticates the user by login and password and provide the list of services for that user , then the user submitted the name and enrollment number of the candidate to the Document verification Server. Then the server verify the document from the university database and generate the result to the user The above architecture of the document verification using cloud technology provides the solutions to overcome the deficiency in the existing document verification system.
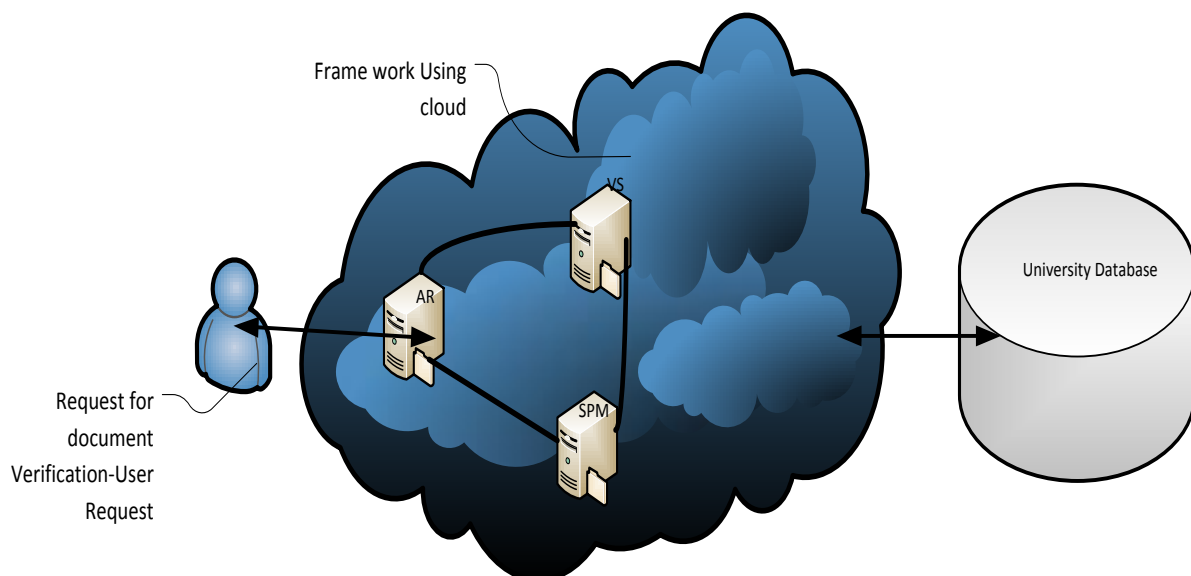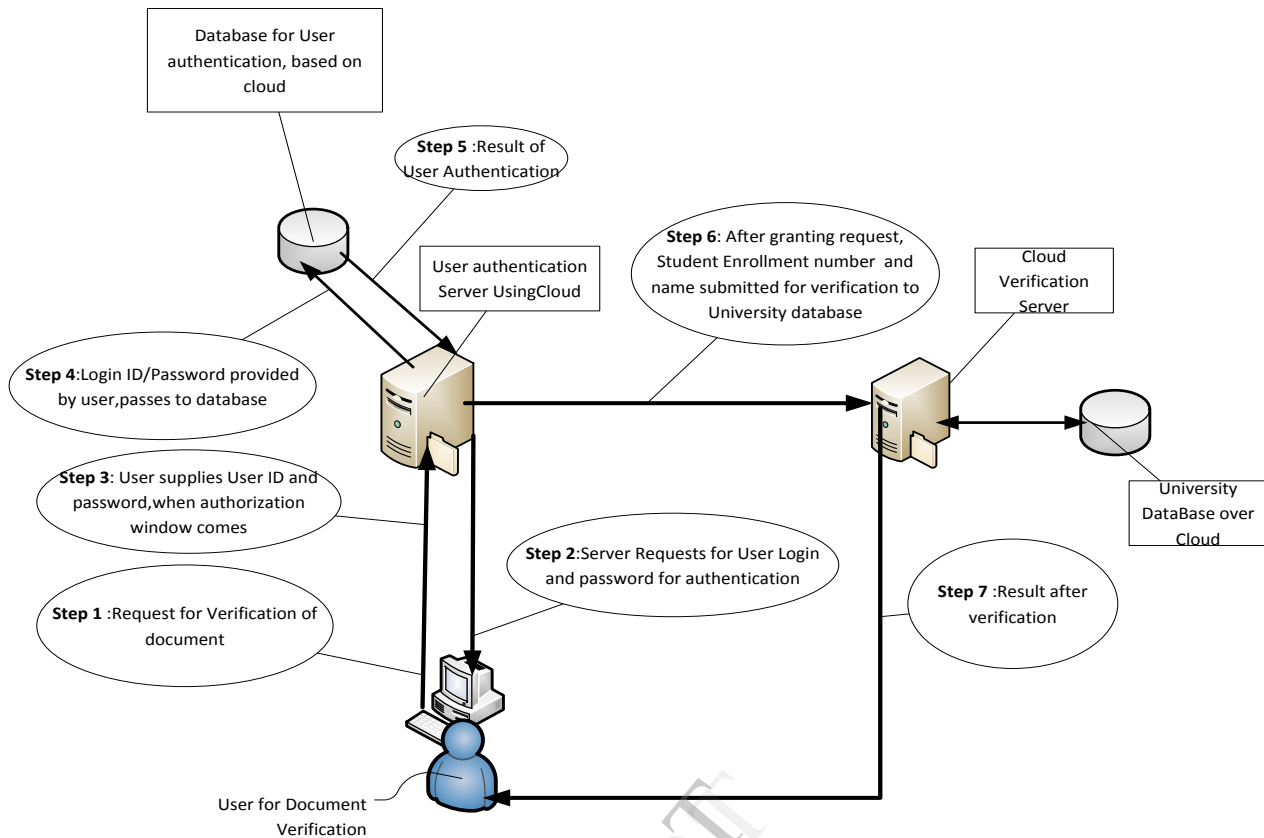

Fig-1 Proposed Model

Database for User authentication, based on cloud

Step 5 :Result of User Authentication

Step 6: After granting request, Student Enrollment number and name submitted for verification to University database

Cloud Verification Server

User authentication Server UsingCloud

Step 4:Login ID/Password provided by user,passes to database

Step 3: User supplies User ID and password,when authorization window comes

Step 2:Server Requests for User Login and password for authentication

University DataBase over Cloud

Step 7 :Result after verification

Step 1 :Request for Verification of document

User for Document Verification

Fig.2 –Online Certificate Verification Model

IV. ALGORITHM FOR PROPOSED MODEL

As per Fig-2 Algorithm of the process in proposed model is given in below steps :

Step 1: The users (any placement agency/recruiter or end user), who are authorized for using the facility of cloud computing for the verification of the desired document of
applicant from the university request on line for the verification using the appropriate web browser via internet.

Step 2:Authentication server , which is managed by cloud service provider ,asks the user to, provide correct login credentials to get user authentication.

Step 3:The applicant supplies the User ID and password, when authorization window comes.

Step4:User authentication server authenticates the user from the database with appropriate encryption method. If

authentication fails go to step 2, otherwise step 5.

Step 5: after authentication ,the cloud service provider ,provides the entitled services ,then the user opts for data verification services.

Step6:University database server require applicant enrollment number and name for the verification from the university database that is kept in encrypted forms and generates the appropriate verification results.

Step 7:Verification results is provided to user in appropriate format.

Above Step1 to Step7 shows the complete data verification process and flow of data. This will use secure cloud computing services ,to minimize data fraudulent.

V. CONCLUSION

We have presented an online certificate verification system using cloud computing to provide the verification of academic documents online. Online certificate verification system provides an easy to verify and manage, cost-effective solution for bringing cloud computing paradigm to online certificate verification system among various type of users in single click . Specifically we are authenticating user credentials and

providing data verification through a secure channel using cloud concept. moreover this may be extended to some other type of data verification system as per system need.

REFERENCES

[1] http://www.ugc.ac.in/oldpdf/alluniversity.pdf: Checked   on dt:27/04/2013

[2] http://csrc.nist.gov/publications/nistpubs/800-145/SP800-145.pdf

[3] Sherif Sakr, Anna Liu, Daniel M. Batista, and Mohammad Alomari, IEEE Communications Surveys & Tutorials, VOL. 13, NO. 3, Third quarter-2011.

[4] http://en.wikipedia.org/wiki/Data_as_a_service.

[5] Cloud Computing for E-Governance, A White paper IIIT Hyderabad, India, January 2010.

[6] http://en.wikipedia.org/wiki/Cloud_computing.