

E-Governance and its Impact on Cloud Computing

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Abstract— E- Governance system is a broad term which is a combination of electronic systems and Government system. Huge amount of clusters could be needed for handling data. Security is the factor for handling of the GIS system as the data can be very sensitive. Improved quality of service and faster access for exchange of information are among various levels of government. Load balancing handle lots of amount of data coming from different servers. This data is first being aggregated and then segregation of data for different servers is to be done. System could be developed and all the information could be stored at a single location from where user could be able to use it. Upholding of the servers from center GIS images could also be used for the location based series. This system could be essential for upcoming era in ease of communication and for betterment of society.

Key words: Cluster Computing, Digital India, E-Governance, Evolution in Cloud Computing, GIS Implementation

I. INTRODUCTION

E- Governance provides a best solution to maintain data on the cloud platform basis so that any of the information could easily be obtained. By this system all the data could be obtained in a fraction of time. Managing all this portals is not an easy task on cloud platform as maintenance of the servers is needed. The load balancing plays an important role for maintenance of the site. Where different clusters are to be arranged and maintained. Here problem of managing lots of data and arranging them together need a great effort because many a times data comes in huge amount and crashing of servers may occurs [1]. Taking example of Data entry in Adhar Card filling de-tails where at a single time lots of data had been inserted and thus this problem may have arrived. So during such peak time there is instant need to maintain load balance and thus dynamic load balancing is needed [1]. E- Government plan is been executed by different sates according to the need and different outcomes are also been carried out [2]. It is because in physical machines load balancing becomes a difficult task for maintenance. In software as a service model all the software applications are available with the service provides. Thus developing all the services by its own becomes easy for the customer and maintenance becomes easier. GIS plays an important role in E-Governance system because most important information could be gathered using such systems. Tracking of data, geographical location information, route tracing and analysis of it could be done easily while entering the information in the database.

II. GIS SYSTEMS

The GIS systems analyses and visualizes the relations and patterns of geographic information systems. Better utilization of resources and improved services are the basic necessities which are observed in GIS systems. It somehow relates how geographic space is related to day to day life activities [5]. The GIS systems are fusion of supporting the information technology as well as communicating the geographic sphere. This GIS compatible data could be used for various other processes in terms of land resource management. The system calculates the geometric information and combining the result decision would be taken, by web analysis it would communicated to the users via system [6]. The unknown fact which strikes to mind of is of the how the systems could be handling all those data and manipulating it. GIS implementation is such a thing and scheduled planning is to be required for decision making. Use of different kinds of findings and mapping it together for qualitative analysis representation needs proper judgment and knowledge about the location. GIS handles all the related maps functionality and provides information with maps [7]. It collects, handles, stores and manages the server's data and complex operation would be performed through the query analysis functions [7]. All the aspects mentioned plays a vital role in the governmental management GIS applications [7].

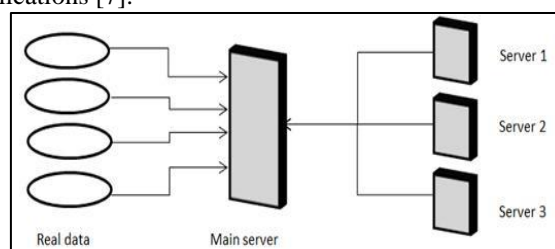


Fig. 1: Aggregation and Segregation of data

The data which comes from the user are mainly in segregated form as shown in figure 1.1 which refers to the real time data coming out of a fact. A server is maintained for these purposes. Now during the aggregation time all the data would be collected and then would be allocated to different servers. Here different kind of data based on the analysis is separated. Applications related to GIS are: [3]

- Regional planning for urban and rural development
- Land management
- Property and real estate's management
- Planning for the housing
- Property management
- Planning for the municipal facilities
- Management of day to day basic needs
- Vehicular traffic management [7]

III. ARCHITECTURAL MODEL FOR SERVER SECURITY

Application makes use of the different servers for the aggregation and segregation purpose. The soft-ware platform divides into such parts as: [10]

- Application Tools
- Application Servers
- Cloud Platforms
- Real Time Data Module

Tools can be used for the spatial analysis of input and output operation for editing, processing and analyzing the request. The real time data insertion model uses a user friendly design for the display. A uniform system in structure design, database design, modularized functional design and component development method can be implanted to GIS for the setup.

The database could be managed on the cloud [14]. The provider provides all the security for the servers to maintain securely.

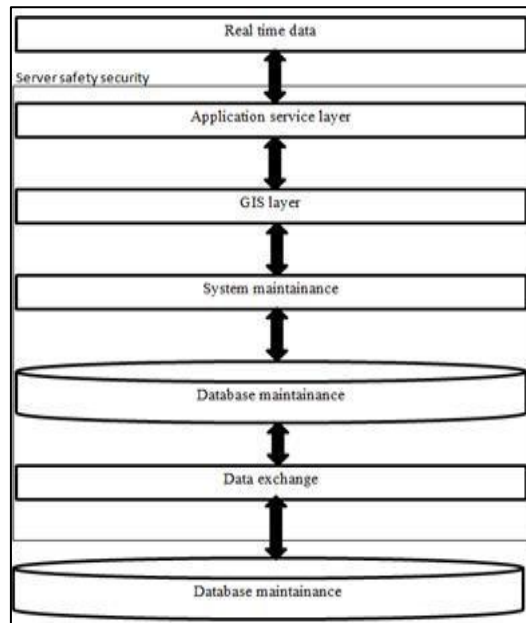


Fig. 2: Server Management Model

The database could be managed on the cloud [14]. The provider provides all the security for the servers to maintain securely.

IV. LOAD BALANCING IN THE CLOUD COMPUTING ENVIRONMENT

A spatial amount of data is to be stored in the SAAS platform [16]. Load balancing plays a vital role in performance of the system so as to maintain high performance and better response [8].

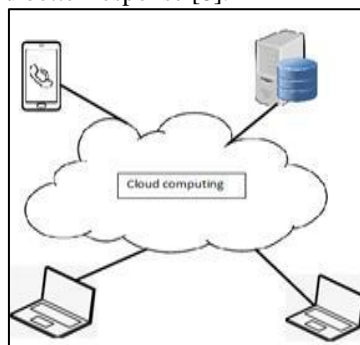


Fig. 3: Cloud computing scenario

Load balancing is a process where load is divided among various nodes and each node is compatible to handle required amount of load either dynamically or statically. [8]

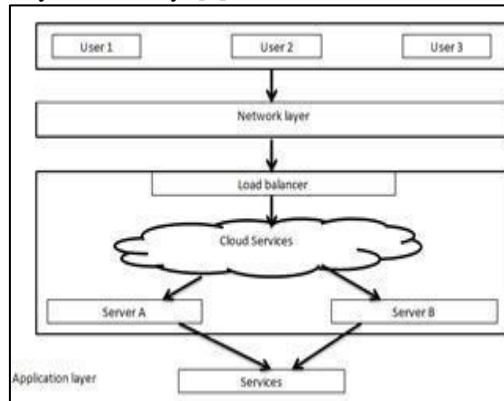


Fig. 4: Load balancing in Cloud computing

Typically, a specified amount of load is loaded and fixed amount of traffic is to be divided equally among the various layers in the servers. But during some time the load may get increased or decreased and unbalance may get created.

Scheduling Method	Parameters Considered	Advantages	Disadvantages
First Come First Serve	Arrival time	Simple in Implementation	Doesn't consider any other criteria for scheduling
Round Robin	Arrival time, Time quantum	Less complexity and load is balanced more fairly	Pre-emption is required
Opportunistic Load Balancing	Load balancing	Better resource Utilization	Poor makespan
Minimum Execution Time Algorithm	Expected execution time	Selects the fastest machine for scheduling	Load imbalanced
Minimum Completion Time Algorithm	Expected completion time, Load balancing	Load balancing is Considered	Optimization in selection of best resource is not there
Min-Min, Max-Min	Makespan, Expected completion time	Better makespan compared to other algorithms	Poor load balancing and QoS factors are not considered

Table 1: Load Balancing Algorithm

Static load balancing the load sometimes may get unevenly distributed and may raise some issues [13].

In dynamic load balancing technique the load balances on its own and thus the time gets decreased while processing requests.

Handling load, the current state of the system is used. Dynamic load balancing proves to be more effective for the cloud performance of the system.

V. CLUSTERING ON THE DEPLOYED NODES

E Governance system refers to large number of servers connected to a network system. Clustering helps in maintenance of these servers where all the nodes are assembled and are clustered [12]. The concept of scalability is to be carried upon. As the number of nodes vary then the features of clusters also depending upon the capacity of nodes used for clustering [9].

VI. AGGREGATION OF DATA

Data aggregation is one of the ways for gathering of data and then combining it. It is one of the efficient approaches for the restricted resource of the sensor nodes and energy is one of them [11]. The data is collected from the different node and by using the aggregation function the data is synchronized.

VII. BEST PRACTICES OBSERVED FOR THE E-GOVERNANCE SYSTEMS

It is efficiency of government to provide all basic services on a competitive platform. All the links with the citizens empowerment, strategically development and continuous learning via a cloud platform is been provided and thus different services have been implemented for the wellbeing of the society [3]. Computerized check posts for the interstate development and reforms made in the rural remote location for providing best mechanism in land farming development have also become a part and parcel of the E- governance system [4]. Impact of e-governance system can be on urban area as well as Rural areas as GIS can be implement for the Agricultural, local information systems, land record management and the audits per-formed for the rural area [3]. One of the most important sectors is also being covered up in the growth of the county and that is education sector where facilities for students are provided so that the needy students could be helped [6].

VIII. GAP ANALYSIS

For the E- governance system in India a lot many things are needed to be done and in case of considering the work of the Indian Government all the documents are to be under same platform. The segregation of all the servers to work together for gathering information from different location is the main aspect in the Gap analysis process. Not only the data coming from the users but the data gathered during the survey is need to segregated so that in one click the information could be gathered. Various forms of applications are involved for fathering of information and the problem. A group of database can be handled by the servers and thus concept of cloud approaches in the server manipulations. Here different servers are arranged which would gather all the information in aggregated form and then required amount of information is being segregated. Efforts are being made to link all the necessary documents so as to bridge a gap between technologies with the older tedious time consuming working systems.

IX. CONCLUSION

The cited paper concludes for the efficient usage of E-governance system with help of cloud computing environment. Dynamically or statically balancing load in clusters is the main purpose of the system. Effectively manage cloud platform. This is by using SAAS platform. Better utilization of information upon which the GIS could be satisfactorily analyzed. Then main aim is to bridge a gap for the location based services so that the captured image could be better utilized. Different servers are used for the proposed system for aggregation and segregation of data for user convenience.

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