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# Handling Load Balancing using Genetic Algorithm in Cloud Based Multimedia System

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**ABSTRACT:** In this paper we tend to study concerning centralized hierarchal cloud-based multimedia (CMS).That consisting of a resource manager, cluster heads, and server clusters, within which the resource manager assigns purchasers that requests for transmission service tasks to server clusters in keeping with the task characteristics, then every cluster head distributes the assigned task to the servers among its server cluster. For such a sophisticated CMS, however, it's area unit search challenge to style an efficient load leveling algorithmic program that spreads the transmission service task load on servers with the token price for transmittal transmission information between server clusters and purchasers, whereas the outside load limit of every server cluster isn't profaned. in contrast to previous work, this paper takes into consideration a additional sensible dynamic multiservice state of affairs within which every server cluster solely handles a particular sort of transmission task, and every shopper requests a distinct sort of transmission service at a distinct time. Such a state of affairs are often modelled as associate whole number applied mathematics downside, that is computationally stubborn generally. As a consequence, this paper any solves the matter by associate economical genetic algorithmic program with associate migrant theme, that has been shown to be appropriate for dynamic issues. Simulation results demonstrate that the projected genetic algorithmic program will expeditiously manage with dynamic multiservice load leveling in CMS.

**KEYWORDS**: CMS,Load Balancing,Cloud-based multimedia

## I. INTRODUCTION

With advance of technology, cloud-based multimedia system (CMS) emerges because of a huge number of users demands for various multimedia computing and storage services through the Internet at the same time. It generally incorporates infrastructure, platforms, and software to support a huge number of clients simultaneously to store and process their multimedia application data in a distributed manner and meet different multimedia QoS requirements through the Internet. Most multimedia applications (e.g., audio/video streaming services, etc.) require considerable computation, and are often performed on mobile devices with constrained power so that the assistance of cloud computing is strongly required. In general, cloud service providers offer the utilities based on cloud facilities to clients so that clients do not need to take much cost to request multimedia services and process multimedia data as well as their computation results. By doing so, multimedia applications are processed on powerful cloud servers, and the clients only need to pay for the utilized resources by the time. This paper considers a centralized hierarchical CMS composed of a resource manager and a number of server clusters, each of which is coordinated by a cluster head, and we assume the servers in different server clusters to provide different services. Such a CMS is operated as follows. Each time the CMS receives clients' requests for multimedia service tasks, the resource manager of the CMS assigns those task requests to different server clusters according to the characteristics of the requested tasks. Subsequently, the cluster head of each server cluster distributes the assigned task to some server within the server cluster. It is not hard to observe that the load of each server cluster significantly affects the performance of the whole CMS. In general, the resource manager of the CMS is in pursuit of fairly distributing the task load across server clusters, and hence, it is of importance and interest to be able to cope with load balancing in the CMS.

## II. RELATED WORK

In the previous dynamic multiservice scenario in which each server cluster only handles a specific type of multimedia task, and each client requests a different type of multimedia service at a different time. Such a scenario can be

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modelled as an integer linear programming problem, which is computationally intractable in general. The load balancing problem for the CMS is based on all the multimedia service tasks are of the same type, and did not consider the dynamic scenario where load balancing should adapt to the time change. It is not hard to observe that the load of each server cluster significantly affects the performance of the whole CMS. In general, the resource manager of the CMS is in pursuit of fairly distributing the task load across server clusters, and hence, it is of importance and interest to be able to cope with load balancing in the CMS. The decentralized technique is only suitable for smaller systems, it is still easier to implement.

## III. PROPOSED ALGORITHM

### A. *Proposed System:*

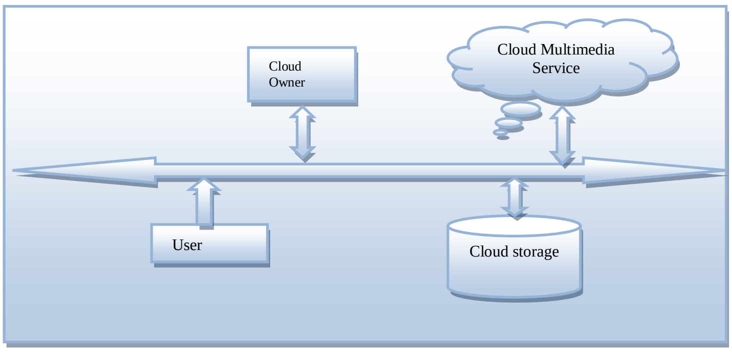
In the proposed system we implement a centralized CMS and we proposed a genetic algorithm (GA) for the concerned dynamic load balancing problem in CMS. The resource manager of the centralized CMS stores the global service task load information collected from server clusters, and decides the amount of client's requests assigned to each server cluster so that the load of each server cluster is distributed as balanced as possible in terms of the cost of transmitting multimedia data between server clusters and clients. Each time the CMS receives clients requests for multimedia service tasks, the resource manager of the CMS assigns those task requests to different server clusters according to the characteristics of the requested tasks. Subsequently, the cluster head of each server cluster distributes the assigned task to some server within the server cluster.

### B. *Methodologies*

The Scope of this paper is avoiding the load balancing in CMS, the resource manager fetch the client's multimedia task type and to assign that task to the particular server cluster head in the cloud. So that client can get a data without any interruptions. A simplified concern in their setting is to assume that all the multimedia service tasks are of the same type. In practice, however, the CMS offers services of generating, editing, processing, and searching a variety of multimedia data, Different multimedia services have various requirements for the functions provided by the CMS

## IV. SYSTEM ARCHITECTURE

The users or nodes involved in our projects are Sender, Intermediate and Receiver. In order to send file, the sender has to find out the list of nodes which are connected with the sender. From that available list he can choose receiver. Then the sender has to analyze the performance of each and every node which is connected with the sender. The performance analysis list will return the priority based result so that sender can choose the intermediate to send the file. The Intermediate will receive the file from sender then it will analyze the performance so that it can send data to another intermediate or receiver. In the receiver side, the receiver has to select the file path to receive the file from sender or intermediate. Then the receiver can view the file received file.



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## VI. RESULTS

The initial screen is the log in screen. The user has to input the username and password which was created already. If username has not been created, the user can sign up for a new one.

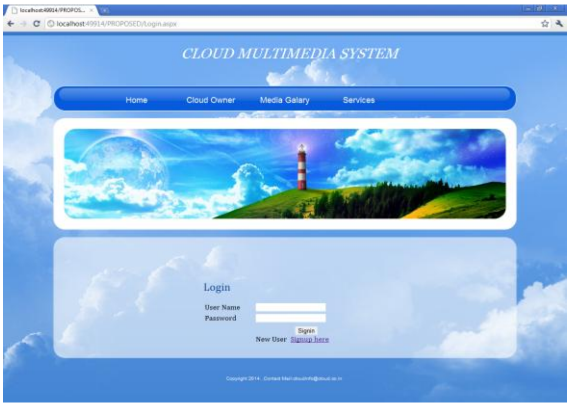


Fig. 1. Log in Screen

This is the screen of a new user registration. The user has to give the details of first name, last name, password, mail id, date of birth, gender and mobile number.

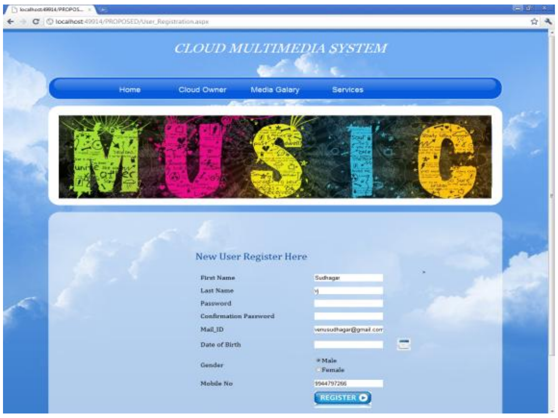


Fig. 2. New User Registration

This is the screen of multimedia service zone, where the user after logging in can view the image details. The details are like file name, file type, file location, creation date and time.

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Fig. 3. Image Details

This is the screen to know about the user downloaded file details.It will show the username, key,file name,file type and the downloaded date and time.

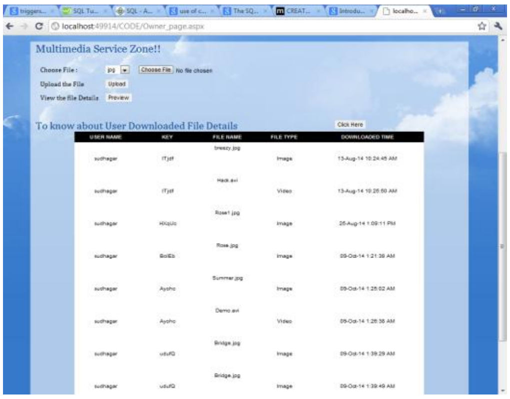


Fig.4. Downloaded File Details

## VII. CONCLUSION AND FUTURE WORK

A genetic algorithm approach for optimizing the CMSdynMLB was proposed and implemented. As a future work we extend the behavioral characterization of proximity malware to account for strategic malware detection evasion with game theory is a challenging task.

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