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BLOOD BANK MANAGEMENT SYSTEM

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ABSTRACT

The Blood Bank Management System is a web-based application that is related to administrative and inventory management in a blood bank which maintains, organizes, retrieves, and analyses data. We developed an application to make the procedure of requesting blood and increase the availability. When a specific blood group is required urgent, you can utilize the app to contact only those who have that blood group. This system is made up of various modules that keep track of blood and blood requests, hospitals. Our web application will attract a huge number of blood donors. Cloud-based systems can be useful in emergency blood supply since they allow for central and fast access to donor data and location from nearly any place and device. Because practically everyone has a cell phone, it allows for real time location tracking and communication. As a result, the 'Online Blood Bank' could be a lifesaver for blood donors.

Keywords: blood bank, aws cloud, web application, cloud based.

INTRODUCTION

Cloud computing has become one of the most discussed IT paradigms of recent years. It builds on many of the advances in the IT industry over the past decade and presents significant opportunities for businesses to shorten time to market and reduce costs by consuming shared computing and storage resources rather than building, operating, and improving infrastructure on their own. The speed of

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change in markets creates significant pressure on the enterprise IT infrastructure to adapt and deliver. As defined by Gartner 1, "Cloud computing is a style of computing where scalable and elastic IT-enabled capabilities are delivered as a service to external customers using Internet technologies." Traditionally, HPC applications have been run on distributed parallel computers such as supercomputers and large cluster computers. Especially data intensive HPC applications, such as BLAST, require very large computational and storage resources. For example, the ATLAS experiment, which searches for new discoveries in the head-on collisions of protons of extraordinarily high energy, will typically generate more than one petabyte of raw data per year. In addition, replicas of these data and derived simulation results will increase the data footprint even more. It is difficult for one domain or organization to manage and finance the resources to store and analyze such amounts of data. While clouds are currently mainly used for personal and commercial use (e.g. for web applications), their large number of storage and computational resources, high accessibility, reliability and simple cost model make them very attractive for HPC applications as well.

MAIN OBJECTIVE:

This research study covers the three basic operations of blood banks, namely: donor registration, monitoring of blood bags or products' inventories, and monitoring of blood bags or products' issuance. Also, due to time-constraint, respondents will be from different hospitals, though the research study talks about blood banks in the India. In addition, the study considers three (3) possible users of the system, namely: hospital administrator, donors, and blood receptionists. Each algorithm first divides the data to download from the cloud storage service over all nodes, and then exchanges the data via a mesh overlay network. Furthermore, the second algorithm uses work stealing to automatically adapt the amount of data downloaded from the cloud storage service to the individual throughput of the nodes. We have implemented the two algorithms and evaluated their performance on a real cloud environment (Amazon EC2/S3). As a

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result, we have confirmed that proposed algorithms achieve high and stable performance.

LITERATURE SURVEY

In literature survey some of the projects are explained. All these projects are on blood bank management systems means how to manage blood banks how can a recipient can access to blood more easily then previous old traditional methods.

Many peoples try to improve blood bank working in their own ways and these are some them.

a. In "Short message service (SMS) based blood bank" by G. Muddu Krishna & S. Nagaraju(2016)[1]. They proposed a system in which services of blood bank will be accessed via SMS. If someone needed blood then

they have to request for blood via SMS and then packet count module of their system will check for

availability of blood and response will be given by data processing module.

b. In "Automated online blood bank database" by Muhammad Arif; S. Sreevas; K. Nafseer; R. Rahul(2012)[2] . They come up with direct call routing technique by using asterisk. In this every blood bank consist of a database and that will be managed by central server. When someone in need of blood call on their tollfree no. they will directly get connected to a donor and after receiving blood from that donor name of that donor will be kept on hold for 8 weeks.

c. In "Benefits of management information system in blood bank" by Dr. Sharad Maheshwari and Vikas Kulshreshtha [3]. They discusses about the beneficiaries of the blood bank management information system. They show advantages and benefits of these systems.

d. In "MBB: A life saving application" by Ramakant Gawande; Narendra Gupta; Nikhil Thengadi [4]. They come up with a system to link all donors and help in controlling blood transfusion process. Their system will also maintain database which hold data of donors and blood according to their city and further by their locality.

MODULES EXPLANATION

User registration:

User registration is a feature in the Blood Bank Management System that allows users to create an account on the system. To register, the user needs to provide some personal details such as

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their name, email address, and contact number. This information is stored in the User table of the database.

The registration form also includes fields for the user to create a username and password. The password is stored securely in the database using encryption techniques such as hashing. Once the user has completed the registration form and submitted it, the system verifies the information provided and checks if the username is unique. If the information is valid, the user's account is created, and the user is redirected to the login page.

Registered users have access to additional features in the system, such as the ability to request blood donations and view their donation history. The user's account information can also be updated, such as changing the contact number or password.

Overall, user registration is an important feature in the Blood Bank Management System that allows users to create an account and access the system's functionality.

Donor registration:

Donor registration is a feature in the Blood Bank Management System that allows donors to create an account on the system. Donors are individuals who have donated blood or are willing to donate blood in the future

To register as a donor, the user needs to provide some personal details such as their name, age, blood group, and contact number. This information is stored in the Donor table of the database. The registration form also includes fields for the donor to provide additional information such as their location and any medical conditions or medications that may affect their eligibility to donate blood. The system checks the donor's eligibility to donate blood based on their medical history and the criteria established by the blood bank. Once the donor has completed the registration form and submitted it, the system verifies the information provided and checks if the donor has provided valid information. If the information is valid, the donor's account is created, and the donor is added to the Donor table of the database. Registered donors have access to additional features in the system, such as the ability to view their donation history and receive notifications about upcoming blood drives. Donors can also

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update their personal information and indicate their availability for blood donation.

Blood inventory management:

The system allows the blood bank to manage the inventory of blood units available in the blood bank. The system tracks the blood group and the quantity of blood units available.

Blood request management:

The system allows the blood bank to manage the blood request made by the users. The system tracks the blood group, quantity required, and the status of the request.

Donor history:

The system maintains the donor history, which includes the donor's details, blood group, and the date of the last donation.

Blood group compatibility:

The system checks the compatibility of the blood group before accepting a blood donation request.

Admin dashboard:

The system provides an admin dashboard that allows the admin to manage the users, donors, blood inventory, and blood requests

Blood request history:

The system provides an blood request dashboard that allows the admin to show the requests made by users For donating the blood group.

certificate dashboard:

The system will be providing the certificate to donors who had actively donated the blood by name and some information.

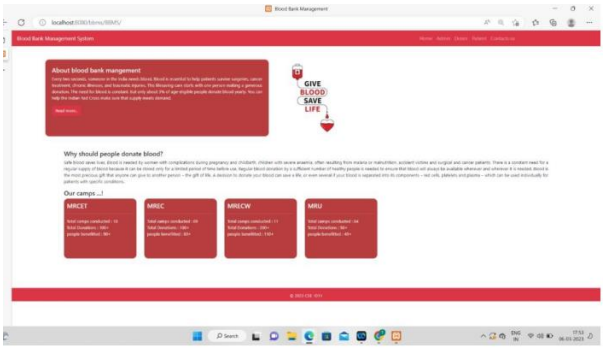

Fig.1. Home page

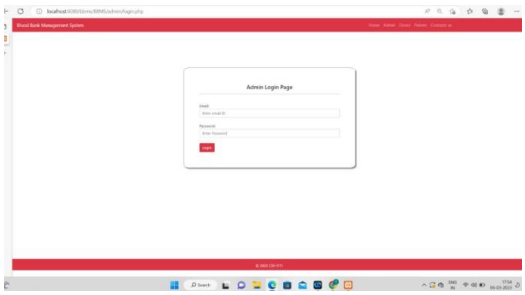

Fig.2. Log in page for hospital admins

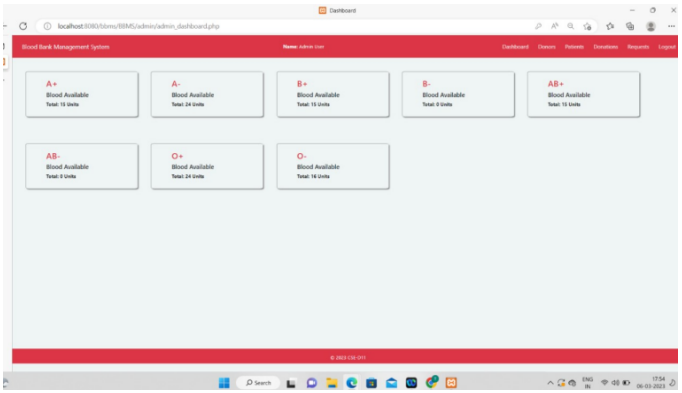

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Fig.3. blood groups

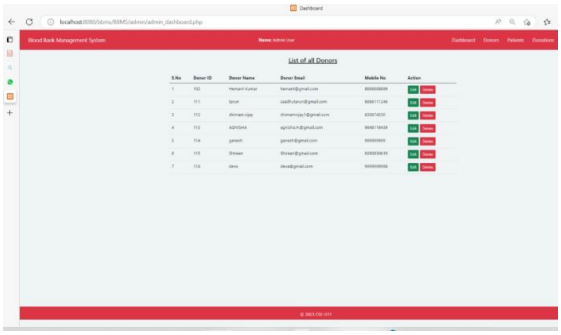

Fig.4. Donors list available for hospital admin

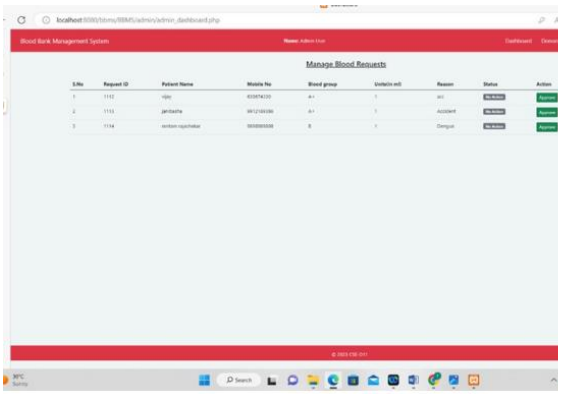

Fig.5. Donors ready for blood donations

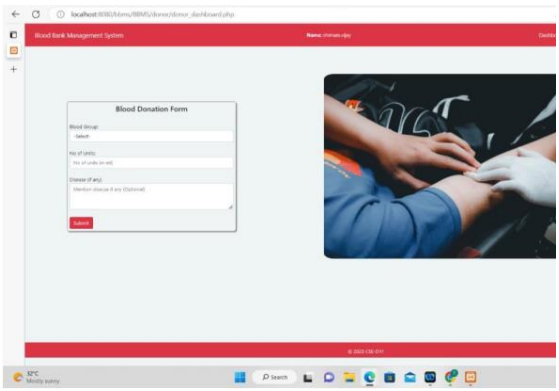

Fig.6. Blood donation form

CONCLUSIONS

We have addressed cloud characteristics and summarized different multicast algorithms for distributed parallel and P2P systems. We have focused on Amazon EC2/S3 which is the most commonly used cloud platform, and revealed some multicast performance problems on there when using the most simple algorithm by which all EC2 compute nodes download files from S3 directly.

There are two main types of problems with optimizing multicast performance on clouds. The network performance within clouds is dynamic. It means the network performance changes not only between compute nodes but also especially between the cloud storage and each compute node.

Keeping network monitoring data and topology information up-to-date is almost impossible. It means it is difficult to know the underlying cloud's physical infrastructures and construct one or more available bandwidth maximized spanning trees, which is well known optimization technique for cluster systems. Based on these findings, we have presented two high performance multicast algorithms. These algorithms make it possible to transfer large

Amounts of data stored in S3 to multiple EC2 nodes efficiently. The proposed algorithms combine optimization ideas from multicast algorithms used in parallel distributed systems and P2P systems, and they have three salient features. They can construct an overlay network on clouds without network topology information,

They can optimize the total throughput between compute nodes dynamically, and They can increase the download throughput from cloud storage by letting nodes cooperate with each other, resembling work stealing techniques.

We have implemented the two proposed algorithms and evaluated their performance on Amazon EC2/S3, The steal algorithm achieved higher throughput than the non-steal algorithm since the steal algorithm could adapt to the dynamic changes of the download throughput from S3.

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