EFFICIENT STATIC LOAD BALANCING ALGORITHM IN CLOUD COMPUTING

ABSTRACT:

Cloud Computing is one of the emerging basic necessities in the IT world and has shown immense growth over the years. The applications can be run remotely using other people’s servers. This is done with a simple user interface or an application format. In general, Cloud is simply the Internet which in turn is a network of remote servers. ‘Pay only for what you use’ is the bottom line for computing in cloud environment. The Cloud is a pool of heterogeneous resources.

The storage dealt with cloud computing has opened the gates to Load Balancing. Load Balancing refers to the process of balancing the load efficiently among the servers such that no server is overloaded or under loaded. The prime motive of this project is to minimize the response time thereby increasing the performance.

This is implemented by using the Improved Weighted Round Robin dividing the workload efficiently and successfully, thereby multiplying the scalability and the performance of computing, subtracting the response time.
EXISTING SYSTEM:

- Load balancing is one of the most important factors that has been considered to heighten the working performance of the cloud service provider. The collective system that holds individual nodes are reassigned the total workload by the process of load balancing.
- The existing systems have worked on making complete utilization of resources and improving the response time of the job, looking into the load balancing process that holds the condition where some of the nodes involved are overloaded while others are not.
- In other words, the load balancing process in the cloud environment simply means equal and proper distribution of workload across all the nodes involved in the mechanism. Therefore, load balancing algorithms are chosen appropriately that allows selection of virtual machines or servers.
- The load balancing mechanism serves to achieve the goals that include maintaining stability of the system considered, creating backups in order to build a system that is fault tolerant, adaptation to certain modifications that must result in the increasing flexibility of the system, thereby providing substantial improvement in performance.
- The supreme feature of balancing the load also lies in reducing the response time greatly, that leads to maximum throughput, thus satisfying every user operating on the cloud. The tasks that point to a certain system must be treated equally, regardless of the geographical locations from wherever they have arrived.
- All of the above mentioned factors collaboratively make up an efficient load balanced cloud environment with suitable algorithms that support the features.
DISADVANTAGES OF EXISTING SYSTEM:

- Requires a constant internet connection.
- Doesn’t work well in low speed connections.
- May be slow.
- Limited features.
PROPOSED SYSTEM:

The proposed algorithm is the Improved Weighted Round Robin algorithm. The algorithm takes its origin from the Weighted Round Robin algorithm. The Weighted Round Robin algorithm works by assigning the maximum weight to the server with the best specifications. For e.g. if there are two servers one with the quad core processors and increased processing speed and the other server with dual core processors and comparatively minimum processing speed then the server with the best specification is assigned the maximum weight. In short the Weighted Round Robin algorithm is a special case of the Round Robin algorithm that works well with servers of different specifications.

The Improved Weighted Round Robin algorithm works such that in addition to considering the specification of the servers it also considers the execution time of the tasks such that it assigns the task with the maximum execution time to the server with the maximum weight. This ensures that the load is distributed evenly among the servers thereby minimizing the response time.

ADVANTAGES OF PROPOSED SYSTEM:

- Lower software cost.
- Improve performance.
- Fewer maintenance issue.
- Instant software updates.
- Increased data safety.
SYSTEM ARCHITECTURE:

Fig 4.1 Architecture diagram of the proposed system
SYSTEM REQUIREMENTS:

HARDWARE REQUIREMENTS:

- System - Pentium-IV
- Speed - 2.4GHZ
- Hard disk - 40GB
- RAM - 512MB

SOFTWARE REQUIREMENTS:

- Operating System - Windows XP
- Coding language - Java
- IDE - Netbeans
- Database - MYSQL
REFERENCE:


