

A REVIEW ON CLOUD COMPUTING

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ABSTRACT

Load balancing is one of the vital role in distributed computing environment . The Cloud computing environment is one of the best platforms that give storage of data and service at very minimum cost and is accessible all the time over the internet. cloud computing has turned into a very interesting and important study. Cloud load balancing load balancing aims at high user satisfaction and usage of resource ratio by guarantying a proficient and reasonable allocation of each computing resource. There are numerous difficulties in load balancing techniques such as security fault tolerance at which prevalent in modern cloud computing environment. Many researches enhance load balancing and this paper too portrays on overview on load balancing schemes in cloud environments and analysis of different types of Load balancing algorithm techniques.

Keywords: Cloud computing, load balancing

Introduction

Cloud is the cluster of computers that provides on demand service on resources over a network. Cloud computing is most advanced technology in recent era. It is conceptually distributed system where computing resources distributed system where computing resources distributed through the network (Cloud) and services pooled together to provide the users as pay as u need basis.

Cloud computing provides everything as a service and their deployment as Public private and Hybrid communit clouds There are three basic service layers of cloud computing are Software as Service(SaaS) where the user does not need to manage the installatiojn and configuration of hardware and software eg.Google Docs,Platform as a service (PaaS) where a service is delivery of computing platform user can create and install their own applications as their need Infrastructure as a service Wher severs and software and network equipment is provided as a non demand service by the cloud provider.

Load balances allocates the workload and balances it between two or more cloud servers we can so outline our infrastructure to prmit it to.A load balancing technique makes certain that every system within the network has same quantity of load at any order or view

Allocation of cloud resources to users on demand leads to the problem of load balancing,if suppose the workload is not allocated properly, some nodes in the cloud are heavily loaded and some will be underloaded. In this way the cloud are not allocated inefficiently it leads to delay in proving service to users . it leads to imbalance may cause bottleneck. Nodes are logically grouped into clusters and task of load balancing will be distributed among

clusters. For cloud environment various load balancing approach have been implemented to provide satisfiable distribution of load among clusters of machines.

Why we need Load balancing in cloud computing

A generally running university site can completely go down during too many requests can arrive at the same time if they are using cloud load balancers they do not need worry about such traffic services no matter how layer the request is it can be cleverly distributed among diverse server for generating maximum results in less responsiveness

The types of load balancing Algorithm

The Static algorithm: The static algorithm is one of the Load balancing algorithm each is selected and every one is requested for the work to allocated for existing resources irrespective of current workload among the servers.

Round robin Load balancing algorithm The specific algorithms are the fixed time is given to the job It allocates the job to every node in the group in circular fashion. In this type no starvation because processor connected in circular order.so this algorithm gives faster response time among equally distributed workload but sometimes nodes are idle underutilised or overloaded.

Min Min This algorithm uses the minimum loaded nodes . It maintains the list of nodes and calculate the minimum completion time for every node. This is useful for small task are more on the group

MinMax Load balancing Algorithm

This algorithm maintained the list of task and the minimum completion time is calculated for all the nodes available and task with the maximum completion time is assigned to the machine so this algorithm named as Min Max algorithm.

Dynamic Algorithm:

Dynamic Algorithms are meant for load balancing usefully avoid traffic because it analyze very current workload among computing systems in the cluster of computers

Dynamic algorithms for better performance of service in heterogenous environment than the static algorithm. Dynamic algorithms can consider the dynamic changes to attributes Main advantage of this is that selection of task is based on current state of and it will help to improve performance of the system. In distributed all nodes are interact with each other and load balancing is executed by all the nodes in the system. The load balancing is distributed among all the nodes. Interaction among nodes can be cooperative and noncooperative if any node fails in the system it will not stop the functionality.

1)In cooperative distributed system all nodes works together.

2) In non-cooperative distributed system each node works independently

The important difference is more loads are conjured up on servers and it results in imbalanced traffic whereas in dynamic load balancing is predicted on a query that can be made frequently on the servers but existing traffic will prevent queries to be answered and correspondingly overhead

Honeybee foraging behavior load balancing algorithm

It deals with the real behavior of honey bees in finding their food sources. After finding the food source, honey bees come back to the bee hive to inform the food source. They inform with the group movement i.e. waggle dance. They perform waggle dance to inform other bees of the exact location of the food source. The waggle dance shows the quality and quantity of food and distance of the food source from the bee hive.

Advantage: self-organizing nature-inspired algorithm. Performance will be achieved by increasing the size and suitable for heterogeneous environment.

Throttled Load balancing Algorithm

It is the best for virtual machines. This load balancer maintains list of entire VM in the system. When the load balancer receives request, it scans the indexing table. If the virtual machine is available then the job is assigned to that machine. Load balancer updates the indexing table after each allocation and deallocation of resource [8].

Advantages are List of VMs is maintained along with the status of each VM, Good performance and Better resource utilization, Disadvantage is Scans the entire list of VMs from the beginning and does not consider the current load on VM.

ESCE (Equally spread Current execution load balancing algorithm)

It maintains the list of entire VM and its jobs. When the load balancer receives a request it scans the list of VMs. If a VM is found which can handle the client request then the request is allocated to that particular VM. This algorithm distributes the equal load among all VM's.

Advantages are maintain equal load at all VMs and also maximize the throughput. Disadvantage is Central point of failure and also not fault tolerant.

Sender initiated

If the sender initiates the server to be allocated to the particular receiver if the less workload is allocated.

Receiver initiated: Receiver initiated is the accepting of sender workload which is transferred from sender.

Symmetric: Both sender and receiver communications of transmitting and receiving of workload for current status.

Centralized approach : In centralized approach the centralized server allocate all the servers to load as perfect not to be overlaoaded or underloaded

Decentralized approach In decentralized approach the server send to all user requests and managed by cooperative scheduling

Advantages of Load balancing

It leads to allocate proper server to client request without delay waiting time and overloaded

Fast processing of servers for the allocation of job

Better performance with in the time

Review on load balancing algorithm

Comparision of load blancing algorithm

Load balancing algorithms deal with the control of traffic over the web or the server.

Types	Advantages	Disadvantages
Round robin algorithm	Client request across the server	Server are similar to handle equalent loads and sometimes nodes may be underloaded or overloaded
Minmin algorithm	The minimum loaded nodes are resources are allocated first	The minimum load only calculated maximum load utilizing machine made wait for other process
Minmax algorithm	The job with maximum completions time allocated machine are checked to allocate job for minimum completioj time	Maximum completion and minmum response time is calculated continuous checking leads to higher throughput
Ant colony algorithm	It uses the continous check whether the node is underloaded or overloaded	
Honey beeaalgorithm	It uses the dance for finding food	
Throttled algorithm	List of current load is maintained to allocate	
Modified throttled algorithm	List of current allocation	

Cloud computing load balancing in cloud environment balancing refers to distributing client request across multiple application servers that are running in cloud environment in this paper we have identified the exisiting static algorithm used for simple load balancing and a have suggested for hybrid algorithm

Review ON LOAD BALANCING

Jasmine et al 2012 proposed a method with the name of “iterative Turns” this algorithm assigns a request in virtual machines iteratively[9]. Mr. Mondal et al in 2012 presented a method by random hill climbing algorithm for keeping load balance. D. Saranya load balancing algorithms in cloud computing review, 2015 different kinds of load balancing algorithms are analysed for cloud computing make network equally distributed in order to get faster connectivity. Dinesh et al 2012 proposed method for task scheduling load balancing.

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