A SURVEY: Task scheduling approach over the cloud component architecture for data processing

[1]Shrankhala jain, [2]Mr. Sajid khan
[1]Research Guide, [2]Assistant Professor
BTIRT COLLEGE sagar,MP, India
[1]shrankhalajain30@gmail.com

ABSTRACT: Cloud Computing and its architecture provide a scalable computing. Processing of multiple requests and handling it with proper response time can be drawn using the cloud components. Cloud helps in multiple request handling and managing user's data secure. There are components which find a suitable architecture and thus provide a bonding between the component communications. Virtual machine, data centre and user base are the main communication components available in cloud. Thus handling multiple request, allocation of proper virtual machine to the input request and then providing the finest response time is always required. Many approaches to balance the load on virtual machine is provided. In the base paper the data locality preservation is strict, it also makes the load balancing among nodes a challenging task also by applying the algorithm. Currently, most of the range-queriable cloud storage adopts the combination of neighbor item exchange and neighbor migration methods, which incurs large overhead, and suffers from slow convergence.The algorithm such as Round robin, throttle and other VM allocation help in allocation of machine for the users request but in limited Manner. While the improvement for the better allocation of virtual machine, further finding a best suitable allocation is always desired to improve the performance. In this paper an algorithm is presented which is Rule based threshold heuristic approach. This is the algorithm which combines the multiple features of virtual machine, its states and thus finds the best fit virtual machine for request allocation. The approach is simulated using the Cloud

Analyst simulation tool and the comparison is made usingexisting algorithm by applying it to various topologies. The comparison is made using computation time and throughput parameters thus exhibiting mesh topology having highest efficiency with lowet computational time and high throughput. The output result observed shows the effectiveness of approach over traditional techniques.

Keywords: Cloud Load Balancing, Data sharing, Virtualization, Heuristic Approach, Bully search, Localization, Dynamic Allocation.

INTRODUCTION

Cloud Environment is a platform which is combination of usable entitiess are given from different providers and provided as a service on WWW Internet platform, on an as-needed basis, relieving users by the given responsibility of managing, interchanging a dedicated complex computing infrastructure.[1]. The availability of abundantly provisioned provided data managing centers and the from the view development of elastic cloud infrastructures bring new Applications opportunities and business models, & it may interchange the working of cloud environment providers [2].Cloud environment data store & its Computation is virtual platform over internet for efficient services. These equipment's, available on-demand IT usable entitiess, are created and disposed of efficiently, are auto completing using the different variable available programmatic data UI and billing is according to its working and measurable component usage. In a traditional hosted environment, usable entitiess are allocated based on peak load requirements [3]. As Cloud environment data store & its Computation is emerging as a good means to leverage available remote usable entitiess in a flexible, cost effective manner with its scaling way thanks to a usage-based available here a cost model, one option from the available critical concerns that directly impact the adoption working rate of the scenario Cloud paradigm is security [4]. Technologies like system virtualization have become initially and over widely adopted to offer computing usable entitiess as a service, allowing the dynamic spawn from the given virtual machine and in the datacenter's connected nodes and its communicationing infrastructure [1]. One service model of cloud is designated as software as a service (SaaS) when offered by a provider into the group of set users, has caught the attention of attackers which try to exploit on their working vulnerabilities [5].

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The common objectives for using task scheduling are:

- To maintain system firmness.

- To improve system performance.

- To protect against system failures.

Therefore, task scheduling works for users' enjoyment through proper use of capacity. Therefore, a good load balancing approach underestimates resource consumption. In a cloud computing hypervisor, view a convenient computer screen that adapts to appropriate management features, such as (shared virtual machine) [7] in a cloud-based organization. As a result, various load balancing algorithms have been proposed for the cloud ecosystem and the set of rules determines the development of parameters such as:

1. Throughput: - This is the amount of work to be done in the allotted time.

2. Performance: - It is the general verification of algorithms that work when considering accuracy, cost and speed.

3. Fault Tolerance: - The ability of the load balancing algorithm to allow the system to operate under certain conditions of system failure.

4. Response Time: - This is the time used to start satisfying the user's request after the application has been registered.

5. Resource Utilization:- It is used to control the use of various resources.

6. Scalability:-It is the ability of the algorithm to evolve according to the required conditions.

LITERATURE REVIEW

In Cloud Approach and its computation scenario various on-demand usable components are provided to the user to execute their operations. But scheduling proper workload distribution mechanism is necessary to provide proper allocation of the usable components. There are various data workload sharing &balancing Approach are used to manage load in Cloud Approach and its computation scenario usable components. Approachs like ACO (Ant Colony Optimization), Genetic Algorithm, etc. are used to provide optimal solution for the resource allocation problems. A brief review over the Approaches which used to conduct the data workload sharing &balancing operation in Cloud Approach and its computation scenario.
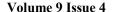
Tinghuai Ma, Ya Chu, Licheng Zhao [2]

Existing Approachs like ACO (Ant Colony Optimization), Genetic Algorithm etc. are not provide long term optimal solution for data workload sharing & balancing problems. In short term data workload sharing &balancing solution, there is no assurance for the efficient execution for the next task is provided. A long term data workload sharing &balancing solution for the resource allocation problems is presented by the authors. LB-BC (data workload sharing &balancing based on bayes and clustering) is regular usage from conduct the data workload sharing & balancing task. In that Approach first a monitor is regular usage from acquire the all the status of the VMs and cloud users. Then that information is regular usage from it outperform data load sharing task. For that purpose a deployment controllers is used which conduct the task of control and deployment from available all resourcesrequests.

Nidhi Jain Kansal [4]

Cloud Approach and its computation scenario or on-demand computing is a Para diagram where various on-demand services and usable components are offered for the users. In Cloud Approach and its computation scenario, simultaneous access of the usable components is conducted by the cloud users. That generates extra load for the system because of the load issues like fault tolerance, storage overhead, degrading performance are occurs. Thus effective data workload sharing &balancing Approach is required to provide better performance in cloud scenario. There are two type of data workload sharing &balancing Approachs either an open source data workload sharing & balancing where session switching or packet switching schemes are used or a pre-processor data workload sharing & balancing .

Dr. Amit Agarwal, Saloni Jain [9]

Optimal data handling and processing of the usable components is one option from the available biggest issue in Cloud Approach and its computation scenario. Proper balancing of the nodes is required to

provide flexible and scalable cloud service for the user. Load of the usable components is based on the factors like processing capacity, storage usage, access time etc. after calculating the status of the usable components and cloud users or nodes various data workload sharing & balancing schemes are used to provide a uninterrupted cloud service for the user. Genetic algorithm and its variants are used to provide an optimize data workload sharing &balancing solution for the cloud users. But these Approach not able deal with exploration problems in the Cloud Approach and its computation scenario. A firefly algorithm to overcome the issues of the genetic algorithm and provide an enhanced functionality to access usable components over the cloud is presented. Firstly status of the cloud usable components and requests generated by the cloud users is listed. Data workload sharing &balancing operation on the basis of firefly algorithm is conducted. That Approach provides an optimal solution for the data workload sharing &balancing problem but the time limit for the operation is high.

Sukhvir Kaur, Supriya Kinger [7]

Data workload sharing &balancing is one option from the available prime concern in Cloud Approach and its computation scenario. In traditional data workload sharing &balancing Approachs used to distribute load on first come first serve basis. But these Approachs does not provide any energy efficient mechanism to distribute load among the cloud nodes. A high reliability replication algorithm for the data workload sharing &balancing is presented. That Approach provides an enhanced mechanism to allocate usable components for the nodes and efficiently management for energy. Efficient Energy allocation improve energy consumption in the cloud scenario and improve the Quality of Service (QoS) of the system. QoS parameters are considered while performing resource allocation and energy allocation for the nodes.

X. Xu, W. Dou, X. Zhang [10]

In Cloud Approach and its computation scenario various on demand usable components are provided for the user to conduct their tasks. User can access these usable components as per their needs. Conc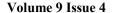urrent request for accessing usable components are sent by the various node. For proper allocation of the nodes efficient data workload sharing &balancing Approach is required. Approachs like genetic algorithm based scheduling, shortest job first scheduling etc. are used to provide better data workload sharing &balancing in cloud scenario. But these Approach not able to provide efficient and optimal solution to allocate usable components. A new soft computing Approach called stochastic hill climbing is given in this paper to allocate usable components in cloud environment. That Approach provides enhanced functionality to access respires in cloud server. That Approach provides quick access for the various usable components.

Feilong Tang Member [1]

In cloud various application servers are hosted at data centre these servers are hosted in various virtual machines. To provide flexible and scalable access of these server a memory management system is required to provide better usable components in cloud scenario. A dynamic memory allocation system which prevent memory overload in cloud data centres is presented. An adaptive feedback filter based Approach is regular usage from allocate memory for the various servers in cloud data centres. A self-configurable memory controller is presented which provides an automatic memory allocation mechanism which based on the analytical model is regular usage from conduct memory management task in cloud data centres. It provides an scalable mechanism to perform the memory management task because various independent controllers are there to conduct memory management operation.

Balaji N, Umamakeshwari [26]

Various type of virtualize and physical usable components are provided for the cloud user in Cloud Approach and its computation scenario. For proper allocation of the usable components scheduling of the usable components is required. There are various virtualize usable components are used to perform various tasks thus an automatic scheduling scheme is required to provide better allocation of the usable components. Because manual scheduling not able to provide better solution for scheduling usable components at that large scale.

Approaches like ACO, Gang Bang scheduling, dynamic scheduling are generally used for providing automatic scheduling for the data. Usable components are allocated on the basis of priority.

X.-l. Zheng and L. Wang [32]

Cloud Approach and its computation scenario provides on-demand usable components for the user. These usable components are present in virtual form, thus a scheduling scheme to schedule the load of the usable components is required. Cloud scheduler must provide scheduling in a manner where efficient allocation of the usable components can be achieved. Scheduling algorithms like round robin, dynamic resource allocation, less processing time first, first come first serve etc. are generally used to conduct the task of scheduling. These algorithms are used to provide quality of service in cloud data centres.

M. Rasti-Barzoki and S. R. Hejazi [38]

Resource allocation is one option from the available major issue in Cloud Approach and its computation scenario. Issues in computing performance, computation cost, reduced latency etc. are occurs. Various Approachs like dynamic resource allocation, genetic algorithm etc. are used to provide better resource allocation in cloud scenario. A resource allocation mechanism which uses Support Vector Regression (SVR) to acquire the knowledge about the allocated usable components. A Genetic Algorithm (GA) based Approach is regular usage from deploy the resource allocation process. That Approach provides better performance as compare to the other resource allocation Approaches.

Dr. Amit Agarwal, Saloni Jain [9]

Task scheduling algorithms are used to distribute load in Cloud Approach and its computation scenario. To reach QoS measures efficient scheduling mechanism is required. A priority based scheduling mechanism is presented by the authors. First priority for the various tasks is assigned and sorting is conducted to sort these task on the basis of priority. Status of the usable components and request of the user is regular usage from allocate resource for the nodes to perform the task.

Usable components can be allocated in FCFS (First Come First Serve) manner.

MOTIVATION

Cloud environment data store & its Computation significantly reduces the cost and complexity of owning and operating computers and connected nodes and its communications. If an organization uses a cloud provider, it does not need to spend money on information technology infrastructure to buy hardware and software licences. Cloud services offers customized and flexible advanced services to used by the provider and individual company. Data security has constantly been a major concern in IT. Data security becomes particularly serious issue in the Cloud environment data store & its Computation environment because data are spread in different machines and storage device including configuration settings, PCs, and a variety of mobile devices like wireless sensor connected nodes and its communications and smart phones. Data security in the Cloud environment data store & its Computation is more difficult than the traditional information systems.

PROBLEM STATEMENT

- This approach helps maximize the use of computing power while reducing the overall cost of usable entitiess by using less power, air conditioning, rack space, etc. to maintain the system.

- With Cloud environment data store & its Computation, multiple users can access a single configuration setting to retrieve and update their data without purchasing licenses for different applications.

- Modification and loss of data problem overcome by enhancing the proxy re-encryption method and discussion point from threshold value used for more time consumption.Heuristic search refers to a search strategy that attempts to optimize a problem by iteratively improving the solution based on a given heuristic function or a cost measure. A heuristic search method does not always guarantee to find an optimal or the best solution, but may instead find a

good or acceptable solution within a reasonable amount of time and memory space.

- The following are the monitored points which identified as problem and further analyzed and performed further with enhancements .

1. Previous technique such as heuristic, resource based& other scheduling algorithm for the processing model generation but still the obvious problem occur with the technique is in generating better result and data allocation policy upon breaking of virtual matchine network. This technique persist better result than existing but still enhancement is required which is provided by the proposed procedure.

2. Previous technique Naïve based classification doesn't perform a better recruitment classification due to lacking of number of rules thus a better probability model cant get generated using the technique.

3. In previous technique distribution is used because of that the data of the topics varies which determine the drawback of different entities than proposed work which include heuristic search and distribution algorithm.

Thus in order to proposed a better prediction model using classification and further combine approaches requirement is to further aquire ascheme which contribute on getting better outcome and system, here our proposed methodology heuristic is utilize scheme in place of traditional scheduling approach.

PROPOSED METHODOLOGY

As per our observation about the previous technique and their disadvantage in different terms and scenario 's . Our work present a new approach which is productive and consumes high value and thus computational better result over the large number of available dataset.

Our work propose comparison of different topology over Heuristic Based prediction model which utilize a new logistic normal distribution technique, which give a relation between the topics and also provide a flexible environemt for the complete process and thus it generate a better prediction model for data transmission.

The proposed algorithm is described below :

1. Loading of all the available data & packets from the created given message which are participating for the communication.

2. Loading the complete node dictionary pair which shows the information loaded datat on each pair and added to each node from the distribution dataset.

3. Perform the particular algorithm topology selection as per selected by the user for further execution such as existing or proposed. Where existing algorithm having the multiple attribute based distribution over the data node pair. The attribute analysis of available node shared the contribution in distribution and further node failure was the major limitation in the previous approach.

4. Perform node down operation which is applied here as simulation analysis, which utilize the functionality of load failure which is get perform using the node down operation through which load re-distribution is shown and matching operation if any single match is obtained and conclude that further using model for the data shifting either it is working or not.

5. Perform model and match operation if atleast 2 or more dictionary match is performed by the system.

6. Ontaining parameter wise data for the history model which means existing approach where the parameter comparison is performed with the traditional approach working with load distribution over the node dictionary.

7. Observing the values and thus it effect accuracy and efficiency for the complete scenario.

8. Exit .

CONCLUSION

In this paper, we have worked on various task balancing algorithms in the Cloud Computing environment. We have also discussed major issues which must be taken into consideration while designing any load balancing algorithm. In existing work which was based on single authentication where only user name and password is required there is no concept of one time password. To overcome this problem a key base authentication for multiple users is introduced to secure data a one time password is generated and expires after process, a focus will be on the throughput also for which multiple process can run at the same time. We have overcome the disadvantages of previous algorithms by using the proposed algorithm. A comparison has been done on the basis of different criteria like throughput, response time, etc. Existing algorithm is used to compute various topologies performance based on computational time and throughput.

FUTURE WORK

In the future, we can expect more cloud Computation over the Environment providers, infinite services, established quality, and best practices. In future we will focus on designing algorithms which will maintain a better trade-off among all performance parameters.

REFERENCES

[1]. Xun Shao *, Masahiro Jibiki, YuuichiTeranishi, NozomuNishinaga, An efficient load-balancing mechanism for heterogeneous range-queriable cloud storage☆,0167-739X/© 2017

[2]. Tinghuai Ma, Ya Chu, Licheng Zhao &OtgonbayarAnkhbayar, Resource Allocation and Scheduling in Cloud Computing: Policy and AlgorithmIETE Technical review Volume 31, Issue 1, January 2014, pages 4-16

[3]. B. P. Rima, E. Choi, and I. Lumb, A Taxonomy and Survey of Cloud Computing Systems, Proceedings of 5th IEEE International Joint Conference on INC, IMS and IDC, Seoul, Korea, August 2009, pages 44-5l.

[4]. Nidhi Jain Kansal, Inderveer Chana, Cloud Load Balancing Techniques: A Step Towards Green Computing, IJCSI, Vol. 9, Issue 1, January 2012.

[5]. Hitesh Bheda, Hiren Bhatt, An Overview of Load balancing Techniques in Cloud Computing Environments,Research gate JANUARY 2015.

[6]. HajaraIdris., An improved ant colony optimization algorithm with fault tolerance for job scheduling in grid computing systems, May 17, 2017

[7]. Sukhvir Kaur, SupriyaKinger Review on Load Balancing Techniques in Cloud Computing Environment, International Journal of Science and Research (IJSR) 2015.

[8]. X. Xu, W. Dou, X. Zhang, and J. Chen, Enreal: an energyaware resource allocation method for scientific workflow executions in cloud environment, 2015.

[9]. Dr. Amit Agarwal, Saloni Jain Efficient optimal algorithm of task scheduling in cloud computing environment International Journal of computer Trends and Technology (IJCTT).

[10]. X. Xu, W. Dou, X. Zhang, and J. Chen, Enreal: an energyaware resource allocation method for scientific workflow executions in cloud environment, 2015.

[11]. J. M. Galloway, K. L. Smith, and S. S. Vrbsky, Power aware load balancing for cloud computing, in Proceedings of the World Congress on Engineering and Computer Science, vol. 1, pp. 19–21, 2011.

[12]. S. Sethi, A. Sahu, and S. K. Jena, Efficient load balancing in cloud computing using fuzzy logic,IOSR Journal of Engineering, vol. 2, no. 7, pp. 65–71, 2012.

[13]. T. Kokilavani J.J. College of Engineering & Technology and Research Scholar, Bharathiar University, Tamil Nadu, India, Load Balanced Min-Min Algorithm for Static Meta-Task Scheduling in Grid ComputingInternational Journal of Computer Applications (0975 – 8887) Volume 20– No.2, April 2011.

[14]. M. Akbari and H. Rashidi, A multi-objectives scheduling algorithm based on cuckoo optimization for task allocation problem at compile time in heterogeneous systems, Expert Systems with Applications, vol. 60, pp. 234–248, 2016.

[15]. ZenonChaczko, VenkateshMahadevan, ShahrzadAslanzadeh, Christopher Mcdermid (2011),Availabity and Load Balancing in Cloud Computing International Conference on Computer and Software Modeling IPCSIT vol.14 IACSIT Press,Singapore 2011.

[16]. S. Wang, K. Van, W. Liao, and S. Wang, Towards a Load Balancing in a Three-level Cloud Computing Network, Proceedings of the 3rd IEEE International Conference on Computer Science and Information Technology (ICC SIT), Chengdu, China, September 2010, pages 108-113.

[17]. Ms.Nitika, Ms.Shaveta, Mr. Gaurav Raj; Comparative Analysis of Load Balancing Algorithms in Cloud Computing, International Journal of Advanced Research in Computer Engineering & Technology Volume 1, Issue 3, May 2012.

[18]. YashpalsinhJadeja, KiritModi, 2012 Cloud Computing Concepts, Architecture and ChallengesInternational Conference on Computing, Electronics and Electrical Technologies, IEEE, pp: 4112.

[19]. M. van der Boor, S. Borst, and J. van Leeuwaarden. Load balancing in large-scale systems with multiple dispatchers. In Proceedings of INFOCOM 2017, 2017.

[20]. P. Neelakantan* and S. Sreekanth, Task allocation in distributed systems, Indian Journal of Science and Technology, Vol 9(31), DOI: 10.17485/ijst/2016/v9i31/89615, August 2016.