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New Association Proposition for Role implicit in Cloud Environment

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Abstract: Cloud computing has become a preferred service supplier for information technology on the users demands resources can be provided there over internet. Virtualization is a central innovation for empowering cloud resource sharing. Confidentiality of data storage is the essential alarm for assurance of data security so cloud computing does not provide robust data privacy. We are addressing a main issue of cloud computing that is load balancing this paper is describing about the load balancing issue in cloud computing is providing an approach to for enhancing the load distribution process. In this exploration we tended to the difficulties in fulfilling of cloud computing environment regarding security hazard implementation strategies on cloud computing environment and comparison of different cloud computing architecture through comparative study In developed virtual machine migration plan, uses monitored technique the load on every host in the data center to decide whether or not to perform VM migration and then we established the criteria to deciding which VM to migrate. we explained different algorithms and techniques proposed for Virtual Machine Scheduling either at single data centre or multiple data center. Our implementation shows a better result of resource prediction accuracy with low cost and less time consuming than previous approaches. It not only increases the efficiency of virtual machines, also improves the performance of the system.

Index Terms: Master Server, Slave Server, Workload, Resource utilization, Virtual Machine. Virtualization; Robust; Exploration, scheduling algorithms, data center, scheduling technique

1. INTRODUCTION

The solution where data storage and any processing take place without the user being able to pinpoint the specific computer carrying Cloud computing refers to both thee application delivered as services over the internet and the hardware and system software in the data center that provides those services [1]. Cloud computing can be defined as a model for enabling on demand network access that can be dynamically provisioned and released with minimal management efforts and minimal involvement of service providers [2]. Actually, some have guessed that trust is the greatest concern confronting distributed computing is the component of trust more evident than in security, and many trust and security to be synonymous [3]. This semantics guarantees the downward refinement property and yields a sound and complete hierarchical planning algorithm that derives significant speedups from its ability to generate and commit to provably correct abstract plans [4]. To enhance the global throughput of these cloud environments, workloads should be evenly distributed among the available resources [4]. Under-provisioning assets will cause service level objective (SLO) violation,

which are frequently connected with significant money related punishments. Over provisioning squanders resources that could be put to different employments [5].

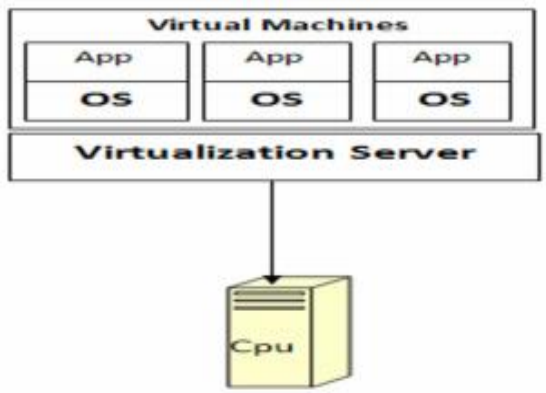

Figure 1. Overview of Cloud Virtualization

2. RELATED WORK

For Resource Management in cloud computing the research of workload prediction and dynamic resource allocation is the most basic research challenges there. A relaxation tradeoff among the SLAs and different constrains desires to be accomplished [6]. Load balancing has increasingly become important as the number of users is increasing on the cloud multiple requests from clients reach the load balancer which distributes each of them across multiple computers or network devices [7]. Demonstrating compliance is harder in cloud, Loss of data is less in clouds, and Security will be enhanced by more control power. Insecure apps is handled by cloud providers in better way than the users [8]. They propose an approach on an operational cloud platform distributed across the continental during simultaneous migrations of four VMs between data centers in Texas and Illinois, Cloud Net's optimizations minify memory migration time by 65% and lower bandwidth consumption for the memory and storage transfer reduction [9]. Round Robin is proportionally fair algorithm maximum throughput scheduling the main advantage of this algorithm is that it utilizes all the resources in a balanced order the scheduler starts with a node and moves on to the next node, after a VM is assigned to that node [10]. In current researches has have decreased migration time and energy consumption during virtual machine migration in cloud data center. Service providers make high quality use of IaaS and PaaS for developing their services without interruption users also can access on-demand and pay-peruse services anywhere in Cloud computing. But one of major issue in datacenters found is to is decease VM migration time and Energy [11].

3. SYSTEM MODEL

We presenting the architecture of proposed provisioning approach based on the workload data analyzing of large scale heterogeneity data over the cloud [12]. In this architecture, the workload prediction management can automatically provide a quick resource according to each task request by solving the optimization problem [13]. These Server cluster is a high performance computing machine which are assign to each users by service provider user will be request for the resources to nearby cluster server where master server will be provide the resource allocation in availability of resources under the slave server [14]. Users forward the request to the nearer server that request will be go for MSi and that will be analyzed the resources and will be forward this as per the users requirement. Virtual machines include the CPU, RAM and Storage resources mainly under the slave server which is created by the cloud service providers [15].

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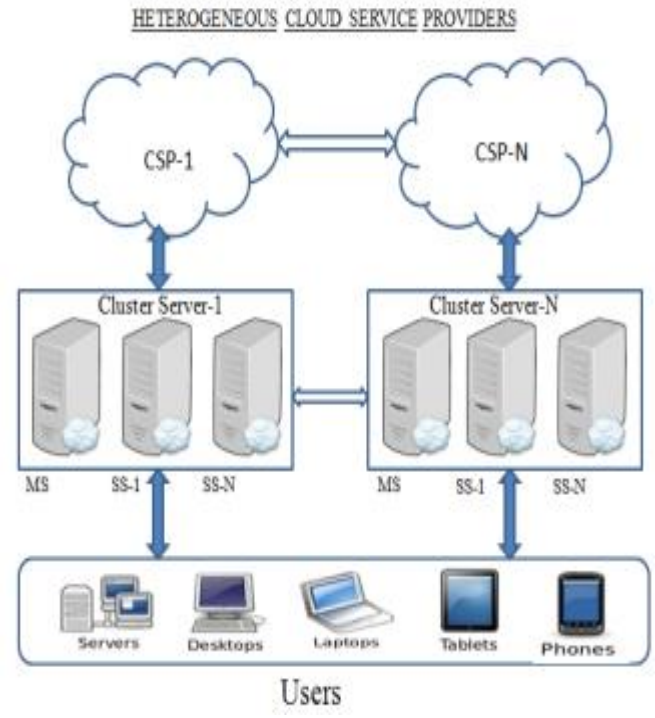

Fig. 2: Architecture of proactive resource provisioning

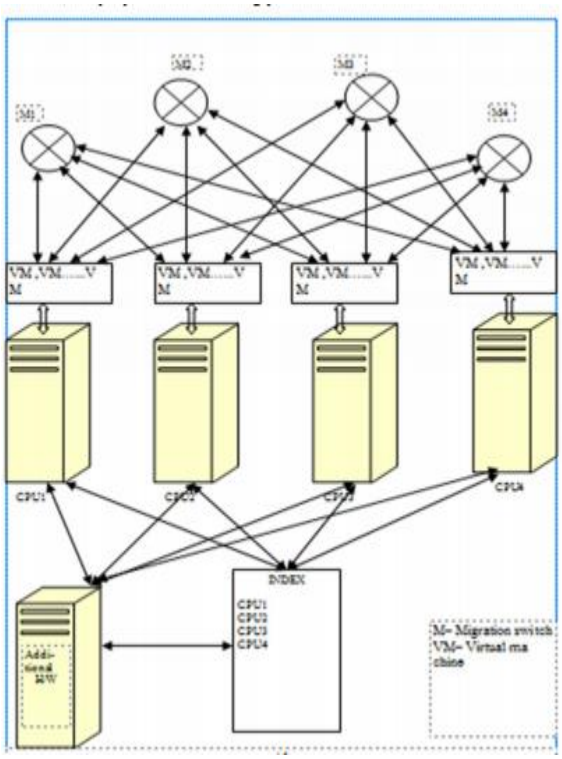

Figure 3. Detailed VM Migration Process

4. PROPOSED SYSTEM MODEL

Cloud datacenters distinctively implemented as a tree topographically structure is cleared a datacenter containing three layers of switches. The top-most layer consists of core switches, followed by layer two of aggregate switches [16]. The third layer consists of access switches, which are attached with physical resources. According to diagram CPU1, CPU2, CPU3 and CPU4 are physical resources. The proposed algorithm, proactive approach for resource allocation in heterogeneous cloud computing environment is given below [17]. The main objective of proactive approach is to maximize the utilization of resources through direct allocation of unused pre-allocated resources to new requesting user.

5. METHODOLOGY

This research will use Cloud Analyst as a framework in the simulator environment. Implementation has been started with installation of simulation package. The minimum requirement of this experiment is VM (Virtual machine) memory of 1GB, VM bandwidth of 1000 and local operating system used as a host. In this simulation setup, equally spreads algorithms have been executed with enhanced optimize time and compare with old [18].

A. Round Robin Algorithm

Round-robin load balancing is one of the simplest methods for distributing client requests across a group of servers. It is one of the simplest scheduling techniques that utilize the principle of time slices [19]. Here the time is divided into multiple slices and each node is given a particular time slice or

time interval i.e. it utilizes the principle of time scheduling.

Step 1: Round Robin vm load balancer maintain an index of vms and state of the vm's is zero allocation.

Step 2:

2.1 The data center controller receives the user request/cloudlets.

2.2 It stores the arrival time and burst time of the user requests.

2.3 The request is allocated to vms on the basis of their states known from the vm queue.

2.4 The round robin vm load balancer will allocate the time quantum for user request execute.

Step 3:

3.1 The round robin vm load balancer will calculate the turn- around time of each process.

3.2 It also calculates the response time and average waiting time of user requests.

3.3 It decides the scheduling order.

Step 4: After the execution of cloudlets, the vms are de-allocated by the round robin vm load balancer.

Step 5: The data center controller checks for new/pending/waiting requests in queue.

Step 6: Continue from step2.

B. Implementation Details

The working environment for cloud computing where the proposed algorithm is implemented is done using cloud analyst is built on the top developed on the top of the search for potential hosts that have VMs that are similar in content to the VM being scheduled. Then, we select the host that has the VM with the highest number of disk blocks that are identical to ones in the VM being scheduled [20].

Step 1: Application users - There is the requirement of autonomous entities to act as traffic generators and behavior needs to be configurable.

Step 2: Internet - It is introduced to model the realistically data transmission across Internet with network delays and bandwidth restrictions.

Step 3: Simulation defined by time period - In Cloud-sim, the process takes place based on the predefined events. Here, in Cloud-Analyst, there is a need to generate events until the set time-period expires.

Step 4: Service Brokers – Data Center Broker in Cloud Sim performs VM management in multiple data centers and routing traffic to appropriate data centers. These two main responsibilities were segregated and assigned to Data Center Controller and Cloud App Service Broker in Cloud-Analyst.

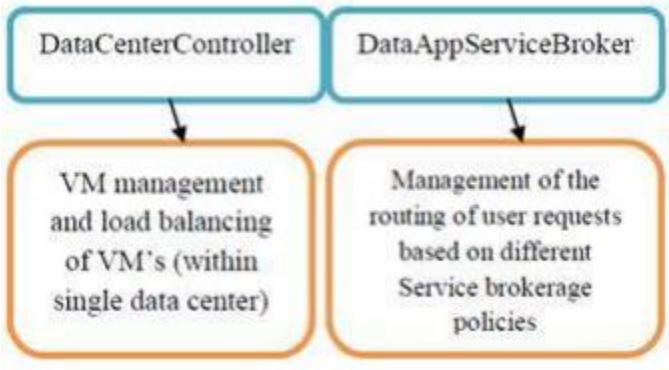

Figure 4. Responsibilities- Segregation

6. EXPERIMENTAL RESULTS

The simulation result obtained and then comparing with scooter algorithm on the basis of the some parameters like execution time, execution cost, waiting time, and resource utilization. There we consider a scenario have different task with varying size on different number of VM. In fourth, number of cloudlets is executing on various host then total utilization of the tasks taken by cloudlets in executing individually from server. our implemented result is slightly better with some parameters but provides a less resource utilization as compared to the existed algorithm. The graph shows drastic reduction in average response timing observed by user for proposed algorithm as Improved VM Improved load balace min min forecast model.

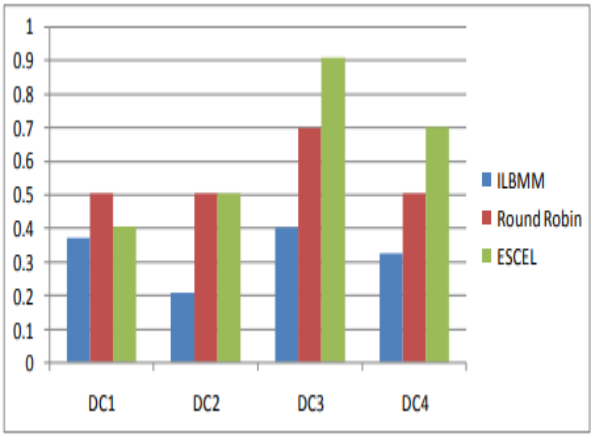

Figure7. Cost of VM

7. CONCLUSION AND FUTURE SCOPE

We have proposed an efficient VM migration plan that is based on of pre-copy approaches. The proposed migration technique is fast as there is no waiting time for the copy to be transformed and then start the VM by used to attached a host machine. The Scenario is taken where the data centers are located at different regions with user's bases requesting VM from different regions or from a same region. Despite of many advantages there are lots of issues in cloud computing environment regarding the security of the clouds transactions and data storage over internet. In round robin algorithm using modified optimize response time service broker policy the maximum response time for request and in case of old optimize response time service broker policy maximum response time. Definitely the waiting time will be increasing much more in second case. So, we will try to upgrade our proposed approach in future to resolve these limitations. In future a model with solid solution of interference management system may be developed comprising interference monitoring abilities to identify and resolve cause and effect of interferences in cloud computing. In future also develop a plan for enhancing physical device utilization.

8. REFERENCES

[1] Hadi Salimi , "Advantages, Challenges and Optimizations of Virtual Machine Scheduling in Cloud Computing Environments" in International Journal of Computer Theory and Engineering Vol. 4, No. 2, April 2012.

[2] Pinal Salot , "A Survey Of Various Scheduling Algorithm In Cloud Computing Environment" in M.E, Computer Engineering, Alpha College of Engineering, Gujarat, India , Volume: 2 Issue: 2.

[3] MR.NISHANT, "Pre-Emptable Shortest Job Next Scheduling In Private Cloud Computing" in journal of information, knowledge and research computer engineering, NOV 12 TO OCT 13 | VOLUME – 02, ISSUE – 02.

[4] TARUN GOYAL, "Host Scheduling Algorithm Using Genetic Algorithm In Cloud Computing Environment", International Journal of Research in Engineering & Technology (IJRET) Vol. 1, Issue 1, June 2013.

[5] Sobir Bazarbayev," Content-Based Scheduling of Virtual Machines (VMs) in the Cloud" in University of Illinois at Urbana-Champaign, AT&T Labs Research.

[6] Kiran Kumar et. al., "An Adaptive Algorithm For Dynamic Priority Based Virtual Machine Scheduling In Cloud" in IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 6, No 2, November 2012.

[7] Dr. Chenna Reddy , "An Efficient Profit-based Job Scheduling Strategy for Service Providers in Cloud Computing Systems" in International Journal of Application or Innovation in Engineering & Management (IJAIEM) , Volume 2, Issue 1, January 2013.

[8] I. Moschakis, H. Karatza, "Performance and Cost evaluation of Gang Scheduling in a Cloud Computing System with Job Migrations and Starvation Handling" in Department of Informatics Aristotle University of Thessaloniki, Greece , IEE 2013

[9]. Ruitao Xie, Yonggang Wen, Xiaohua Jia, Fellow, IEEE and Haiyong Xie ; MARCH- 2014 "Supporting Seamless Virtual Machine Migration via Named Data Networking in Cloud Data Center" Department of Computer Science at City University of Hong Kong.

[10]. Jiaqiang Liu, Li Su, Yuchen Jin, Yong Li, Depeng Jin and Lieguang Zeng ; AUGUST- 2014 "Optimal VM Migration Planning for Data Centers" Department of Electronic Engineering, Tsinghua University, Beijing 10084, China.

[11]. Yang Wang, and Wei Shi, 2013"Virtual Servers Co-Migration for Mobile Accesses: Online vs. Off-line" IEEE Member.

[12]. Rajyashree and Vineet Richhariya, 2013 "Double Threshold Based Load Balancing Approach by Using VM Migration for the Cloud Computing Environment" Lakshmi Narain College of Technology, Bhopal, India.

[13]. Xin Lu and Zhuanzhuan Zhang, 2014 "A Virtual Machine Dynamic Migration Scheduling Model Based on MBFD Algorithm".

[14]. Xiao Song, YaofeiMa, and Da Teng, 2014 "TSMC: A Novel Approach for Live Virtual Machine Migration" Department of Computer Science and Technology, Tsinghua University, Beijing 100084, China.

[15]. Yanbing Liu, 2013"A Virtual Machine Migration Strategy Based on Time Series Workload Prediction Using Cloud Model" Engineering Laboratory of Network and Information Security, Chongqing University of Posts and Telecommunications, Chongqing 400065, China.

[16] Dhurandher, S. K., M. S. Obaidat, et al. (2014). A cluster-based load balancing algorithm in cloud computing. Communications (ICC), 2014 IEEE International Conference on, IEEE.

[17] Kaur, Sukhvir, and Supriya Kinger. "Review on Load Balancing Techniques in Cloud Computing Environment." IJSR, ISSN: 2319-7064.

[18] A. M. Alakeel, A guide to dynamic load balancing in distributed computer systems, in: IJCSNS International Journal of Computer Science and Network Security,VOL.10 No.6., 2010, pp. 153–160.

[19] Karger, David R., and Matthias Ruhl. "Simple efficient load balancing algorithms for peer-to-peer systems." In Proceedings of the sixteenth annual ACM symposium on Parallelism in algorithms and architectures, pp. 36- 43. ACM, 2004.

[20] Xu, Zhiyong, and Laxmi Bhuyan. "Effective load balancing in p2p systems." In Cluster Computing and the Grid, 2006. CCGRID 06. Sixth IEEE International Symposium on, vol. 1, pp. 81-88. IEEE, 2006

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