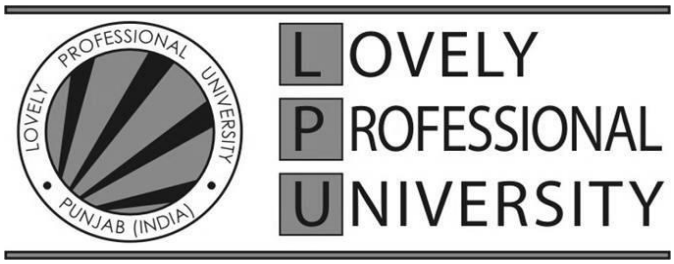

VIRTUAL MACHINE PLACEMENT IN CLOUD COMPUTING

A Dissertation Proposal
submitted

By

Ashu
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to

Department of Computer Science & Engineering

In partial fulfilment of the Requirement for the

Award of the Degree of

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Under the guidance of

Mrs. Avinash Kaur

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TOPIC APPROVAL PERFORMA

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Sr.No.	**Parameter**	**Rating (out of 10)**
1	Project Novelty: Potential of the project to create new knowledge	6.60
2	Project Feasibility: Project can be timely carried out in-house with low-cost and available resources in the University by the students.	7.00
3	Project Academic Inputs: Project topic is relevant and makes extensive use of academic inputs in UG program and serves as a culminating effort for core study area of the degree program.	6.80
4	Project Supervision: Project supervisor's is technically competent to guide students, resolve any issues, and impart necessary skills.	7.00
5	Social Applicability: Project work intends to solve a practical problem.	7.00
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ABSTRACT

The cloud computing is the architecture which is decentralized in nature due to which various issues in the network get raised which reduce its efficiency . The virtual machine migration is the major issue of cloud computing and it get raised when uncertainity get happened in the network. Due to extensive use of the virtual machine resources, machine gets overloaded which increase delay for the cloudlet execution. In the base paper, the check pointing algorithm has been proposed which assign task to most capable machine and hosts maintain check points on the virtual machines. When the virtual machine get overloaded the task need to migrate to another virtual machine. In the research work, weight based technique will be proposed which migrate cloudlet from one virtual machine to another.

Keywords : Cloud computing, Virtual machine, Cloudlets

CERTIFICATE

This is to certify that Ashu has completed M.tech Dissertation proposal titled "Virtual Machine Placement in Cloud Computing" under my guidance and supervision. To the best of my knowledge, the present work is the result of his/her original investigation and study. No part of the dissertation has ever been submitted for any other degree or diploma

Date: **Signature of Advisor**

Name:

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Ashu

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DECLARATION

I hereby declare that the dissertation proposal entitled, "Virtual Machine Placement in Cloud Computing" subsmitted for the M.Tech Degree is entirely my original work and all ideas and references have been duly acknowledged. It does not contain any work for the award of any other degree or diploma.

Date: _____

Investigator

Regn. No.____

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Chapter 1

INTRODUCTION

The basic introduction of cloud computing is presented in the initial section along with characteristics, models and challenges being faced by it. Fault tolerance is the major issue arising within these systems which is discussed towards the last section of this chapter.

1.1 Cloud Computing

Cloud computing is a completely new technology that is used to consume software or other IT services on demand in Internet. The processor power, storage space, bandwidth, memory and software can be shared by users with the use of cloud computing. As if somebody is using Cloud computing then their resources get shred along with that the cost is also getting shared. The users have to pay on the basis of amount of time they have used cloud. The cloud computing solutions provider delivers the offering that can be software, hardware, platform or storage providers over the internet [1]. The user can't buy and set up their own cloud as there is no shrink wrapped boxes are available that contains discs or hardware. Recurring fees is charged by the cloud provider on the monthly basis which is based on the usage by the users.

Development in parallel computing, distributed and grid computing results in cloud computing. They consist combination and evolution of Virtualization, Utility computing, Software-as-a-Service (SaaS), Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) [2]. The availability of IT resources has been improved to much extent with the use of cloud computing than other existing computing techniques. The use of cloud computing has make it easy for the users to use the infrastructure of IT and pay according to the used network that will reduce the cost of buying the physical resources. The cloud is like a space in web where computing has been installed and used as a services like data, operating systems, applications, storage and processing power.

The collection of computing software and available services from a decentralized server network results in cloud computing. Cloud can work on number of social networking sites like Wikipedia, YouTube, Web-based emails clients like Yahoo!, Gmail and even Skype or Bit Torrent like peer to peer networks. There is no need of organization with centralized location; it only required a web browser and an internet connection in order to utilize them. There is enterprise cloud computing that is used in business world. The Microsoft, SAP, or Oracle like applications requires extensive infrastructure and hardware to support it. The extensive infrastructure can be space, power, networks, servers, storage, cooling, and bandwidth. In Cloud computing it is require to pay on the use basis and it also offers simplified solution to its complexity.

1.2 Essential Characteristics of Cloud Computing

There are numbers of characteristics of Cloud computing out of them the main characteristics of cloud computing are given below [3]:

- **On-demand self-service:** Without any interaction of human with each provider of services a consumer have independent provision of server time and network storage as needed like computing capabilities.
- **Broad network access:** The standard mechanism can be used to access the available capabilities over the network. The mobile phones, laptops and personal digital assistants (PDAs) like heterogeneous thin and thick platforms are promoted by this characteristic of cloud.
- **Resource pooling:** The multi tenant model can be used to achieve this characteristic. In this according to the consumers demand different physical and virtual resources can be assigned and re-assigned. The exact location of the resource provider is not known by subscriber. They are not depend upon the location in initial stages but that data can be extracted at higher level of abstraction. Storage, processing, memory, network bandwidth and virtual machines are some of resources examples.
- **Rapid elasticity:** To quickly scale in and scale out the capabilities can be rapidly, elastically and automatically provisioned. At any time and in any quantity the capabilities can be purchased by customers.

- **Measured Service**: The resources are automatically controlled and optimized using appropriate type of cloud system services that meets the capability at some level of abstraction. The provider and consumer of the services which have been utilized for providing the transparency to the usage of resources. By this it becomes easy to monitor, control and provide report of data being accessed.

1.3 Cloud deployment Strategies

There are mainly three strategies which can be deployed in Cloud computing [4]. The basic cloud computing strategies are given below:

- **Public Cloud:** Public cloud services are provided to third party client through an internet. The term public in cloud computing does not mean that it's free although it can be inexpensive to use. In public cloud computing a control mechanism access is given to their users by their vendors. This does not mean that the data of users can be access by others. Public clouds provide an elastic and cost effective means to deploy a number of solutions.
- **Private Cloud:** A private cloud computing is elastic and service based. There are the two benefits of public cloud which is also offered by private clouds. The data and processes are managed within the organization in case of private cloud based service. In case of this there is no need of network bandwidth restrictions, security exposures and legal requirements. In addition, a great control of the cloud infrastructure is given to provider and it also improves the security and resiliency because the used network is restricted and designated to access by the users.
- **Community cloud:** The group of organizations that have same specific security requirements or have to perform a common task or interests can be controlled by community cloud. The community cloud members shared the data and applications.
- **Hybrid Cloud:** By combining the public and private cloud new cloud is made which is a hybrid cloud. In this cloud system, public cloud is used by users to typically outsource the non critical information and its processing. The business critical data is under the control of provider.

1.4 Issue in Cloud Computing

As day by day the amount of information is getting placed in cloud by different companies or users. By this the concern of data security in the environment is getting increase. There are number of issues in cloud computing out of all some issues are summarized below [5]:

- **Privacy:** When using cloud-based services, one is entrusting their data to a third-party for storage and security. Virtual computing technology is utilized in the Cloud computing. In which the personal data of users may be scatter in number of virtual data centers rather than keeping it in only one physical location. When cloud computing services are accessed by the users at that time they sometimes leak the hidden information. Because of this attackers can analyze the critical task depend on the computing task submitted by the users.
- **Reliability:** As our local servers the cloud servers are also experience downtime and slowdowns.
- **Compliance:** Regular reporting and audit trial are requiring as there are number of regulations that pertain to the use of required data and its storage. There is need of compliance by cloud providers along with the requirements of subject linked with customers. This all task is handled by the cloud providers.
- **Freedom:** The data storage and its control are in hands of cloud providers. In case of cloud computing the storage of data can't be physically own by users.
- **Long- Term Viability:** In case when the cloud computing provider get acquired and swallowed up by a larger company at that time the data which we have enter should have the capabilities to stay for long and never become invalid by the time.
- **Cost:** As there is need of using large amount of data back in house and also there is requirement of always on connection which leads to high cost.

1.5 Fault Tolerance

Constructing the system which can automatically recover from the partial failures is one of the important goals in designing distributed systems. When system come across any failure

then it should continue operating in an acceptable way without affecting the overall performance [6]. In other words, a distributed system is expected to be fault tolerant.

There are number of distributed systems useful requirements that need to be cover in order to understand the role of fault tolerance:

- **Mean Time To Failure (MTTF):** It is the expected time to failure given that the system has been operational up.
- **Mean Time To Repair (MTTR):** It refers to the expected time to repair the system after failure occurrence.
- **Mean Time Between Failures (MTBF):** It represents the average time to the next failure, and is calculated as:

$$MTBF = MTTF + MTTR \qquad (1)$$

- **Reliability*:*** It refers to the property that a system can run continuously without failure.

$$Reliability = \frac{MTTF}{1+MTTF} \qquad (2)$$

- **Availability:** It refers to the probability that the system is operating correctly at any given moment and is available to perform users' tasks.

$$Availability = \frac{MTBF}{1+MTBF} \qquad (3)$$

- **Safety:** It refers to the situation that when a system temporarily fails to operate correctly, nothing catastrophic happens.
- **Maintainability:** It refers to how easy a failed system can be repaired. A highly maintainable system may also show a high degree of availability.

$$Maintainability = \frac{1}{1+MTTR} \quad (4)$$

Fault tolerance recognizes that faults may exist. The main role of fault tolerance is to try concealing the occurrence of system failures. There are two phases of fault tolerance, such as:

- **Error detection:** This provides hints about the operational status of processes.
- **Error Recovery:** This attempt to transform the erroneous system state into an error free state.

The use of redundancy is the key technique for faults tolerant. Extra processor and equipments are added in case of redundancy that makes it possible for the system to tolerate the loss of some processes.

1.6 Cloud Fault Tolerance Developed Techniques:

From last few years a lot of cloud computing communities developed various fault tolerance techniques to improve their cloud performance [7]. In this section, we introduce some of these.

- **Proactive Fault Tolerance:** In cloud the use of High Performance Computing (HPC) is prove to be useful for fault tolerance that helps in reducing the time for clock execution in the faults presence. Before the failure prediction it will not rely on a sparse node. In order to tolerate the faults, avoidance mechanism such as Proactive FT has been used. It helps in using it in health monitoring facilities and system log.
- **Fault Tolerance Manager (FTM):** As an on-demand service, it acts as an extra service layer that helps in getting the required properties of fault tolerance. They have presented a failure model for cloud infrastructure. It help in analyzing the impact on users applications they have used VM and VMM like server components, network and power distribution. In Cloud computing environment, an system level, innovative and modular prospective has been given for managing and cresting fault tolerance.

- **SHelp: Automatic self-healing of server applications in a virtual machine environment:** SHelp is an error handler for the same application instances which are run in different VMs hosted on one physical machine. SHelp uses the Berkeley Lab Checkpoint/Restart (BLCR) as the checkpoint and rollback tool. Authors introduced two new techniques, namely, weighted rescue points and two-level rescue point database. Initially zero weight value is assigned by each rescue points which get incremented when fault occur in the function. The application is rolled back to the latest checkpoint in case of occurrence of new fault. At rescue point, error visualization is used in between the rescue points which have largest weight value. After that it will move to the second largest weight value of rescue points and this process will continue till that fault is not bypassed. To get quick recovery from the future faults, the previous related information of fault is shared among different virtual machines application. This is the two level databases.
- **A Self-tuning Failure Detection (SFD):** It is a dynamic failure detection scheme that that can handle unexpected network conditions by adjustment. This can also handle large number of running applications. The performance of SFD and other existing FDs are compared according to their actual and experiment results. Based on the parallel theory, One of SFD properties can be use for multiple monitor multiple and one monitors multiple cases
- **Adaptive Fault Tolerance in Real-time Cloud computing (AFTRC):** AFTRC is a fault tolerance model for real time Cloud Computing. Based on the reliability of virtual machines and processing nodes the faults are managed in this scheme. It has been analyzed that in every computational cycle the reliability of nodes get changes.

Chapter 2

REVIEW OF LITERATURE

The techniques which are proposed recently in order to solve the fault tolerance within cloud computing are presented. The survey helps in studying the numerous solutions to this problem which can help further in our research work.

Talwana Jonathan Charity, et.al, (2016), have recommended that Self-healing, job migration, static load balancing and replication are some of the existing fault tolerance techniques but they are not prove to be fully reliable and effective for cloud environment. That's why in this paper [8], the authors have proposed a pro-active approach for fault-tolerance based on Processing power, Memory and Network parameters to increase resource reliability. In this approach the authors have first calculated the reliability of each Virtual Machine (VM) based on the success rate of task execution. Then schedule the task on high reliable VM. From the simulation results it has been seen that the proposed approach provides good results for VM reliability and system reliability comparatively to other existing approaches. In this paper the authors have only work on resource reliability. In future the work can be done on other parameters.

Bashir Mohammed, et.al, (2016), have [9] critically analyzed the IVFS model and proposed fault tolerant model. In case if the performance in not optimal in that case it will remove this and it is based on computing node or virtual machine reliability. The simulation results are compared with the existing models and it shows that it is prove to be efficient. The diverse software tools and forward/backward recovery has been used that help in increasing the pass rates. Theoretical analysis is used to check the validity of simulation results of proposed scheme that shows it is good to be used in fully fault tolerant IaaS Cloud environment. The large scale high performance environment fault tolerance challenges are not addressed by authors. In this paper, the checkpoint overhead, checkpoint recovery time and recomputing time have not been considered.

Bashir Mohammed, et.al, (2016), have introduced an optimal fault tolerance mechanism to deal with the problem and to minimize the risk of failure. Where fault tolerance was achieved using the combination of the Cloud Master, Compute nodes, Cloud load balancer, Selection mechanism and Cloud Fault handler. In this paper [10], the authors have proposed an optimized fault tolerance approach where a model is designed to tolerate faults based on the reliability of each compute node (virtual machine) and can be replaced if the performance is not optimal. Preliminary test of their algorithm indicates that the rate of increase in pass rate exceeds the decrease in failure rate and it also considers forward and backward recovery using diverse software tools. Their results obtained are demonstrated through experimental validation thereby laying a foundation for a fully fault tolerant IaaS Cloud environment, which suggests a good performance of their model compared to current existing approaches. In this paper the authors have didn't work on fault tolerance challenges mainly in a large-scale high performance environment and in a real life scenario.

Ashima Garg, et.al, (2015), have introduced an autonomic prospective on managing the fault tolerance which ensure scalability, reliability and availability. HAProxy has been used to provide scaling to the web servers for load balancing in proactive manner. It also monitors the web servers for fault prevention at the user level. The framework used in this works with autonomic mirroring and load balancing of data in database servers using MySQL master-master replication and Nginx respectively [11]. Administrator keeps an eye on working of servers through Nagios tool 24X7 monitoring can't be done manually by the service provider. The proposed work has been implemented in the cloud virtualization environment. Experimental results show that our framework can deal with fault tolerance very effectively. In this paper the authors have not utilized the database effectively. For their effective use various DB blocks can be used.

Parveen Kumar, et.al, (2015), have [12] proposed a HAFTRC novel model. This model is prove to be effective in real time cloud computing that provide high adaptive fault tolerance. The cloudlets, MIPS, RAM and bandwidth etc are the terms on the basis of which a reliability of virtual machines is computed. The winning machine is chosen on the basis of

assigned priority to them in case when two virtual machines have same reliabilities. This has been analyzed that the proposed scheme is not prove to be effective in cloud environment.

Salma M. A, et.al, (2015), have concluded that the hardware component failure is become a norm rather than any exception in terms of large scale. There will losses to the business because of the failure in hardware which will lead to degradation in user performance. The hardware will stay in operating mode by using efficient modules i.e., fault tolerant. In this paper, the authors [13] did a survey on different cloud computing fault tolerance techniques. They have also listed the number of FT methods which have been proposed by different expert researchers in this field. Still the best results have not achieved by the existing techniques. So, there is need to propose new methods by which the problem of Fault tolerance can be avoided to much extent.

Pankaj Deep Kaur, et.al, (2015), have recommended that reliability in cloud computing has received limited consideration hence Fault tolerance in cloud computing is the foremost challenging issue. In cloud computing environment, the clients subcontract their data to the cloud that performs the desired computing operations and storing. Failure should be handles to have the minimum impact of failure on the working and applications of systems. In this paper [14], the authors have presented the brief of need and metrices for performing fault tolerance in cloud computing. Further, they have analyzed the different outline of the prevalent architectures and the existing techniques given by different researchers and compared their results. This process is not very cost effective so, in future more research works can explore on MPI architecture in order to present a reliable and less costly technique for fault-tolerance.

Mohammed Amoon, (2015), have concluded that the fault tolerance is a major challenge that should be considered to ensure good performance of cloud computing systems. In this paper, [15] the authors have focus on the problem of tolerating faults in cloud computing systems. All these problems were addressed to avoid the failures in the presence of faults to maintain the monitory profit of clouds. In order to achieve the reliable platform for cloud applications a new framework is proposed. The authors have also presented the most suitable

algorithm for selecting the fault tolerance technique. Another algorithm for selecting the most reliable virtual machines for performing customers' requests is presented. In this paper the authors have didn't work on the implementation of the framework to measure the strength of fault tolerance service and to make an in-depth analysis of the cost benefits among common service providers.

Puya Ghazizadeh, et.al, (2015), have introduced the concept of vehicular cloud. They define that the difference between vehicular and conventional clouds lies in the distributed ownership and, consequently, the unpredictable availability of computational resources. In this paper, the authors have proposed a fault-tolerant job assignment strategy. The [16] proposed strategy is based on redundancy that mitigates the effect of resource volatility of resource availability in vehicular clouds. The theoretical analysis of mean time to failure of this strategy is given in this paper. Then comparative analysis results show that this method is accurate in terms of theoretical prediction. The proposed strategy is not very effective in all type of environment.

Shubhakankshi Goutam, et.al, (2015), have concluded that in terms of customers contracts with cloud providers it uses service level arrangement. In cloud environment an important role is played by Quality of service (QoS). CPU requirement, network bandwidth, memory and storage like SLA parameters are considered in service deployment and resource scheduling. In this paper [17], authors have proposed an algorithm for performing low to high priority risk preemption. In order to deploy all these SLA parameters they have used advanced reservation. The simulation results show the effectiveness of proposed algorithms in terms of fault tolerance. In this paper the authors didn't work on parameters which help in deciding the min resource requirements, CPU time, Cost and network like priority of tasks.

Amal Ganesh, et.al, (2014), have recommended that one of the key research challenge in cloud computing is continuous reliability and guaranteed availability of resources. To remove the challenges of CC there is need to develop a new Fault tolerant system. In this paper [18], basic fault tolerance concepts are highlighted by the authors. They have used the concept of different FT policies like Reactive, Proactive FT policy and the associated FT techniques

used on different types of faults. They have given a review on different fault tolerance methods, algorithms and their frameworks that have been proposed and used by different researchers. In Cloud robust FT technique has been build with the help of survey on work done by different researchers. At the end, they have given a comparison of different FT models.

Pranesh Das, et.al, (2013), have analyzed that the main fault tolerance issues in cloud computing are detection and recovery. To reduce the fault tolerance, number of techniques has been developed by different researchers. In this paper [19], a Virtualization and Fault Tolerance (VFT) technique have been proposed. This technique will help in reducing the service time along with that it will increase the availability of system. To handle all faults, balancing the load, managing the visualization Cloud Manager (CM) module and a Decision Maker (DM) have been used in the new proposed scheme. To provide the reactive fault tolerance VFT is mainly designed. In the virtualization part, a fault tolerance is included for the proposed approach. The unrecoverable faulty nodes and their virtual nodes are blocked by fault handler. From recoverable faulty nodes, it will remove the temporary faults of software and make it available for use in future. The proposed fault tolerant model is fully reliable in case of fault handler and load balancer sub modules of CM modules.

Ravi Jhawar, et.al (2012), have analyzed that in order to introduce fault tolerance number of researchers have focused on architecture specific solutions. The environment specific fault tolerance features must be taken into consideration while implying it in different applications. The developers and users need to put more efforts in case of inflexible and non transparent cloud environment. In this paper [20], authors have created and managed fault tolerance by introducing an innovative perspective. The dedicated service layer has been used from users end that required reliability techniques and details of implementation. The desired level of fault tolerance can be achieved by using this approach without any knowledge of implementation.

Research Gaps

Following are the various research gaps of this study

1. The cloud computing is the architecture which is decentralized in nature due to which malicious hosts enter the network which are responsible to trigger various type of attacks. The authors proposed various frameworks to detect malicious hosts from the network

2. The second major issue of the cloud architecture is of overloading. When the task is assigned to the virtual machines for the execution then the virtual machines gets overloaded which reduce network efficiency. In the literature survey authors proposed various techniques to handles various type of virtual machine migrations.

3. The techniques which are proposed by the authors consume large amount of resources. The efficient technique is required which consume least amount of resources and also take least time for the virtual machine migration.

Chapter 3

SCOPE OF THE STUDY

The cloud computing is the architecture which provide data services through the brokers, virtual machines and cloud service provider. The cloud computing has decentralized nature due to which virtual machine migration, security and fault tolerance are the major issues of the network. The fault is the major issue of the network which reduces network efficiency in terms of various parameters. In the existing research, authors proposed various techniques for the virtual machine migration. All the proposed techniques consume large amount of resources and use much time for the virtual machine migration. In thiss research, the technique will be proposed for virtual machine migration which consumes least amount of resources for the migration.

Chapter 4

OBJECTIVES OF THE STUDY

4.1. Problem Statement

With the rapid growth of cloud architecture, it is required to increase scalability and reliability of the cloud architecture. To maintain Quality of Service in the network the data centers need to be increased as per host requirement. When the number of data centers increase, energy consumption of the network will be increased at the steady rate. This ensures quality of service at satisfactory level. In the recent times, various techniques have been proposed which maintain QoS and reduce energy consumption with the increase of number of data centers in the cloud architecture. When the number of hosts increases in the network, there are chances of overloading due to which QoS may be compromised. In the base paper, fuzzy logic technique is been proposed which detects overloaded host and migrates the tasks to the less loaded host. The task migration strategy depends upon the mean, median and standard deviation of the virtual machine resource utilization. The check pointing technique handles the uncertainty on the basis of decision making greedy technique. The uncertainty is calculated on the basis of resource consumption, migration time and CPU utilization. In this work, no parameter is been considered which calculates number of check points are stored on the previous machine and number of bytes required for the task migration which affects energy consumption of the data center.

4.2. Objectives

a. To propose improvement in check pointing algorithm for task allocation in cloud computing.

b. The proposed improvement will be based on weight based algorithm for virtual machine migration.

c. To implement proposed technique and compare with existing algorithm in terms of energy consumption, resources used and execution time.

Chapter 5

RESEARCH METHODOLOGY

5.1. Proposed Model

The proposed algorithm is the improvement in the check pointing based cloudlet execution technique. In the existing algorithm, the check pointing are generated which will assign the tasks to different virtual machines for the execution. The fuzzy rules are generated on the basis of number of cloudlets and virtual machine resources. The virtual machine resources are counted in the terms of execution time, failure rate. In the proposed algorithm steps described below are followed for the task reassignment:-

1. Cloudlet Assignment: - The cloudlet assignment is the first step which is applied to search the virtual machine which is most applicable to the cloudlet execution. The virtual machine will be searched on the basis of execution time and failure rate. The virtual machines start executing the cloudlet. The virtual machines also start maintaining the check points on the server for the efficient execution of the cloudlets

2. Overloaded virtual machine detection and virtual machine migration: - The virtual machine which does not respond back will be considered as the overloaded machine. To migrate the task weight of each virtual machine is calculated. The virtual machine which has maximum weight will be selected as the machine on which cloudlet will be migrated.

5.2. Action Plan

The flowchart described below is the action plan of this research:-

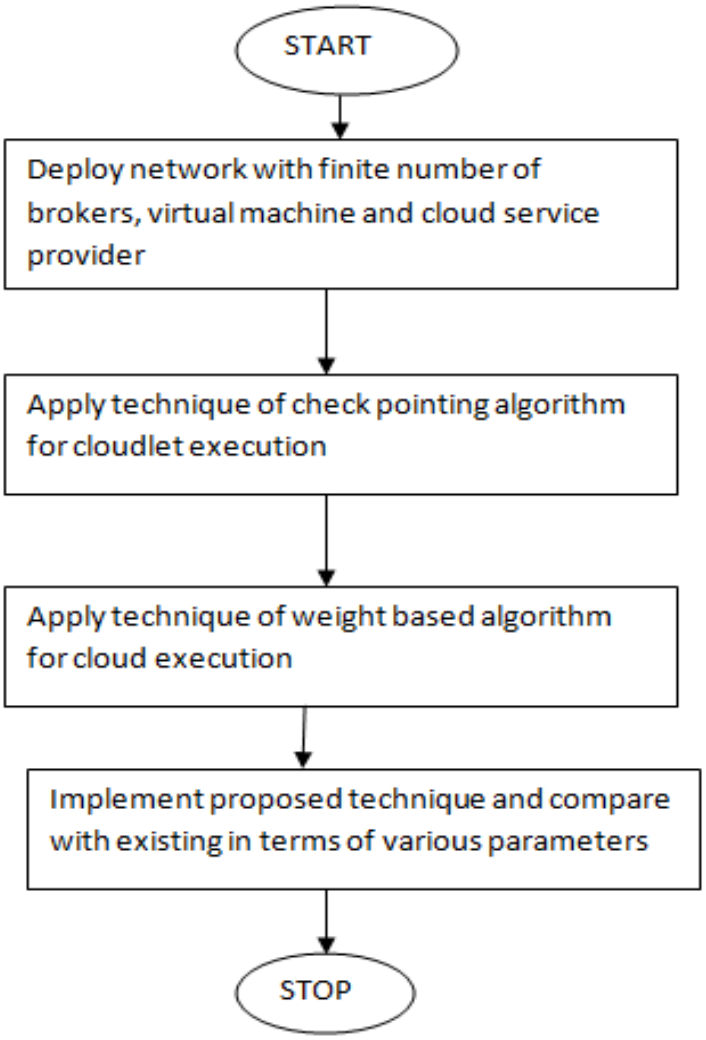

Figure 1 Proposed Work Flow

As described in figure 1, the network is deployed with the finite number of virtual machines, brokers and host. The broker will assign the cloudlets to virtual machines which are most capable. The virtual machines start executing the assigned cloudlets and also maintain check points on the virtual machines. When some uncertainty get happened in the network, the virtual machine get overloaded than weight based technique will be applied which migrate cloudlet from one virtual machine to another. The proposed and existing both techniques will be applied and compared in terms of certain parameters.

Chapter 6

EXPECTED OUTCOMES

- The cloud computing has the decentralized nature due to which security, virtual machine migration are the various issues which need to solve. In the base paper, technique of virtual machine is proposed which will be improved reduce resource consumption in the networks.
- When the virtual machine gets overloaded then execution time will be increased at steady rate. The improvement in the technique of virtual machine will be proposed which reduce execution time.

Chapter 7

SUMMARY AND CONCLUSIONS

The cloud computing is the architecture which is decentralized in nature due to which various issues in the network get raised which reduce its efficiency. The virtual machine migration is the major issue of cloud computing and it get raised when uncertainty get happened in the network. Due to extensive use of the virtual machine resources, machine gets overloaded which increase delay for the cloudlet execution. In the base paper, the check pointing algorithm has been proposed which assign task to most capable machine and hosts maintain check points on the virtual machines. When the virtual machine get overloaded the task need to migrate to another virtual machine. In the research work, weight based technique will be proposed which migrate cloudlet from one virtual machine to another.

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