

# **A Hybrid Bio-Inspired Algorithm for Scheduling and Resource Management in Cloud Environment**

## **ABSTRACT**

Cloud Computing is the emerging technology in distributed environment consisting of several data centers, servers, virtual machines and load balancers etc. which are connected intelligently. Further, cloud deals with many things such as storing and retrieving of documents, sharing of multimedia, lending the related resources on pay-as-you go model and much more. Even though there is much advancement in the era of computers and Internet of Things (IoT) with respect to responsiveness, reliability and flexibility, still there is a room for improvement in scheduling, optimal resource allocation and management algorithms since these algorithms come under NP-hard and NP-complete complexity classes. Hence, there is a need to address these set of challenging problems using different techniques.

## **EXISTING SYSTEM**

In Existing System, Amazon developed a novel Elastic cloud based solution in which all the components (PMs, VMs, load balancers etc.) shrink when there is a less load, and expand when there is an increase in the load (here load refers to the incoming tasks for the cloud). Thus, this elastic cloud resolves the problem of allocating the resources depending on the load. But the efficiency of the VMs depends on the scheduling and load balancing techniques rather than allocation of resources dynamically for its execution. Even though the property of elasticity improves the performance of the cloud, but this service has its own limitations with respect to heterogeneity.

## **DIS ADVANTAGES**

- Delay in executing the tasks.
- Maximize the total energy cost.

## **PROPOSED SYSTEM**

In Proposed System, three Bio-Inspired (MPSO, MCSO and HYBRID) algorithms for efficient scheduling and resource management in a cloud environment. The MPSO algorithm is

more efficient in scheduling the tasks when compared to other algorithms. On the other hand, our proposed HYBRID (MPSO+MCSO) approach is more efficient in allocating the resources to the VMs when compared to other algorithms.

## ADVANTAGES

- The efficiency in terms of reliability, flexibility and time.
- Reduced execution time and average response time with efficient utilization of cloud resources.

## SYSTEM REQUIREMENTS

### H/W System Configuration:-

Processor	-	Pentium –III
RAM	-	256 MB (min)
Hard Disk	-	20 GB
Key Board	-	Standard Windows Keyboard
Mouse	-	Two or Three Button Mouse
Monitor	-	SVGA

### S/W System Configuration:-

Operating System	:	Windows95/98/2000/XP
Application Server	:	Tomcat5.0/6.X
Front End	:	HTML, Jsp
Scripts	:	JavaScript.
Server side Script	:	Java Server Pages.
Database	:	MySQL 5.0

Database Connectivity : JDBC

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