

## A Literature Survey on Virtual machine allocation policy over Cloud Computing

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**Abstract:** Cloud computing and its allocation policy in request allocation to the appropriate virtual machine and component is an important aspect. Cloud computing is a technology which help in user to process its data, process its computation over the pre-available platform. It helps users to keep their data secure, scalable and efficient sharing over the global platform. Large number of request is keep handling by the cloud server to process data usage. Virtual machine sharing, assigning best fit virtual machine to the user and further be giving best output with proper response time is required to optimize the user request. Cloud computing scheduling algorithm help in this aspect to make enable user to process data. VM load sharing, VM allocation and processing are an important issue while dealing with large data and updated technology. In this paper a survey of previous technique which help in load sharing and VM allocation is performed. Discussed previous techniques also compared and remark is determined. Further our work is going to find a suitable algorithm for virtual machine allocation policy and computing efficiency of proposed algorithm.

**Keywords:** Cloud Computing, Data processing, VM allocation, Request assignment, data driven policy, Cloud data approach.

### I. INTRODUCTION

Today in Cloud computing and data processing mechanism various component, structure take participate in computation. Cloud accessing, its usage and assignment to particular process is an important aspect to study. Cloud computing is an environment model which help user to store, access and process the data sharing as per requirement. Cloud computing is based on various models and study, which keep user update according to user requirement. A dynamic machine configuration, request handling from the user, Resource utilization are the best part which can be taken care by cloud. Dynamic in nature is the best part which keeps cloud separate from the traditional server [1].

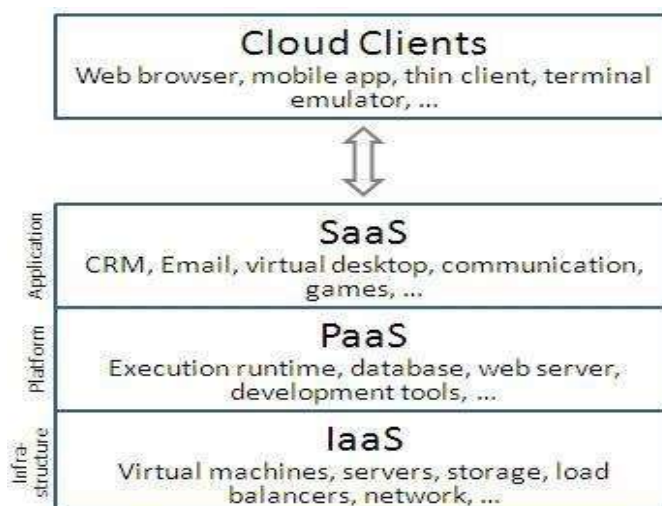
Cloud is having different models:

There are primarily three cloud model on which an study is performed by several research authors.

**SAAS (Software as a service):** There are companies which provide a software platform as a service which can be used by the people to understand and process their requirement. Example such as Gmail, Google drive and similar other platform such as slack. They provide as software as a service. These services can be used independently by organization or individual [2].

**IAAS (Infra as a service model):** There are vendors which provide infrastructure facility for the data storage or accessing system. They provide the hosting service, virtual machine, system configuration on demand. These configured services further can be used by the end user business or individual entity.

**PAAS (Platform as a service model):** This is the platform model which help user with their inbuilt software installed in it. This platform software can further be use to install any build software. A platform software unit help user to get configured or on demand environment to access and utilize experiment of their application.



.Figure 1: Cloud computing level models and their example scenario.

In the figure 1 [3], above shows the various three models and their usage.

Cloud computing and virtual machine help in scheduling the user request and generally it take use of all the mentioned platform models. Cloud help in proper processing and computing to the user [4].

The more common types of services include:

- **Data storage and accessing system:**

A data storage in the cloud file system with secure and encrypted algorithm help user a secure storage, secure accessing and sharing level of the file which is very helpful in any criteria.

- **Dynamic Nature**

Dynamic nature of cloud, component assignment, memory utilization in an scalable nature help cloud environment for proper response time which is not been obtained by traditional server.

- **Pay Per Use**

Cloud computing environment use pay per use model, which enable users to pay only when services get utilize, it help in memory utilization and resource utilization on demand. Based on which cost optimization also can be performed with cloud.

### **LITERATURE REVIEW**

In this section different literature survey approach which works towards virtual machine allocation policy. This survey define how the different algorithm given and perform for the VM allocation.

In this paper [1] A MPIbcast and MPI exchange mechanism for VM allocation policy is performed. The MPI communication scheme help in allocation for virtual machine. Cloud layer overhead and communication exchange is performed in this work. A cluster based approach for allocation with its result comparison is given in this paper.

In this paper [5] Author presented a correlation based technique for the virtual machine allocation. Three different correlation technique criteria were presented. Cloudsim simulator was used in their work for real time traces. Location criteria are used to avoid cloud expense and monitoring. VM sorting, leveling them according to allocation host is performed. SLA violation is computed by its formula which helps in performance matrix. Experiment and computation is performed, compared with previous VM allocation approach by comparison parameter such as energy , migration cost and other overloaded number of services. Provided proposed technique outperform best while dealing in optimization and efficient allocation.

In this paper [8] optimal heuristic approach for resource and energy aware virtual machine allocation and scheduling approach is performed. This paper contains heuristic algorithm which help in optimizing the calculation using all the resource information and previous transaction with particular virtual machine. A scheduling heuristic approach help in data optimization policy , equal load sharing in the beginning and then finally optimizing the machine load. It helps in equal distribution of the data and input request. It is the most important algorithm in large data processing.

In this paper [9] A review among the virtual machine allocation approach is presented. There are many approach which participate in resource management, scheduling approach is reviewed. An adaptive link allocation and adaptive scheduling is discussed which works with the situation aware from the currently working resources and adaptively it respond to the resource and request [10]. Another author also presented resource aware vector dot algorithm which is introduced to handle data center compilations [11]. An available configuration and performance parameter usage help in data resource allocation and processing it with the updated components. Dot product scheme to handle the resource computation is presented in this paper.

In this paper [13] a dynamic resource allocation using the virtual machine information is performed. Resource aware and its current operation is observed using virtual machine monitor (VMM) and also using its physical machine monitor (PMM). An load prediction and effect of large data processing from number of hotspot is given in this paper. Resource balancing and VM optimization is also performed by the part of work. Overload avoidance and green computing utilization were the most promising work done by the author. Their approach shows the efficiency with the parameter such as CPU load , Netx load and other Number of VM by their experiment done on web platform [14]. A comparison analysis for the mentioned technique is summarized [15] and marked here in the table below. The following table 1, discuss about mentioned approaches, advantage, limitation and techniques used previously.

Author	Techniques	Advantage	Disadvantage	Remark
Jing V. Wang, Chi-Tsun Cheng, and Chi K. Tse [5]	Correlation based VM allocation criteria.  This technique use some computation formula to find best fit allocation possible machine.	A computation based allocation provide high accuracy than any probabistic theory. It help in energy optimization and proper resource allocation, utilization.	A complex computation and large data computation process need to perform.  A high computation time is required to complete all iteration.	This approach can be used to compute effective solution with energy optimization and time optimization approach.
F. Gomez, G. Indalecio, J. I. Zablah, N. Seoane, A. Garcia and T. F. Pena [1]	MPI and broad case based computation scheme.	The scheme is based on MPI and MPI bcast. Virtual machine allocation based.	Scheme is efficient which is experimented and also it help in working with high usage and number of request based on latency.	It cant process large amount of data efficiently.  Approach is suitable only with data less than 4 KiB.
A. Beloglazov and R. Buyya [8]	Energy aware heuristic algorithm for load scheduling and data allocation.	Accuracy with data and component aware policy.  Previous usage analysis and request transfer is performed in this technique.  A proper optimization is performed with load and resource aware utilization.	The process in need to build with realtime cloud data network scenario.  An approach is still need more resource storage and maintainance technique.	This technique can get more strength if the data load allocation information is stored in proper utilized manner.
Xiao, Senior Member, IEEE, Weijia Song, and Qi Chen [13]	Dynamic virtual machine load allocation using VMM , PMM approach.	VMM is the monitoring and PMM also a physical monitoring of the current working resources is done.  Thus a relevant possible information and resource aware technique is performed.	No computation is derived. Thus an access or large number of infrastructure may contribute to improper results over the load sharing.	A computation oriented and large data computation need to investigate.

Table 1: Previously performed technique for Cloud computing Virtual machine allocation.

This section discuss virtual machine allocation techniques and dynamic policy allocation performed by authors of different cloud category, it also summarized previous work.

## II. CONCLUSION

Cloud computing is became an important area of research and usage. It enable user to process many of regular request , data storage and accessing environment. Cloud use computing environment which take part from virtual machine, cloudlet environment, data center and other available components. Cloud computing virtual machine allocation to the input request is an important need for the system. In this paper a survey of previous techniques which help in data allocation , data storage and processing mechanism. Cloud data accessing allocation algorithm help in proper utilization of techniques which are pre-build. This technique support to software as well as hardware allocation. Optimization of request, processing of request and providing proper output responding is an important cloud entity. This paper investigate the techniques and provide a comparison analysis table, which shows the past work performed in terms of cloud data sharing and virtual machine allocation. Thus by observing these data entity analysis further dynamic allocation and its usage can be determined. As per the analysis a dynamic virtual machine allocation technique with best fit allocation and worst fit allocation is need to determined. Here an allocation observation is required to compensate the past approach.

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