

# Load Balancing and Machine Imaging in Cloud Computing

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**Abstract:** In today environment everything is on internet. Anyone can run its business by using online services by using the concept of cloud computing but managing the various resources create a big challenge. Cloud provides different type of online resources to different users that include some cost. Anyone can use it from anywhere but require internet connection. In this paper we discuss how to divide a load so that performance increases and the concept of machine imaging in which an image of a system is created by using software and later on system is restored by using this image. One of the goal of load balancing is to provide better resource utilization.

**Keywords:** Load balancing, Benefits of load balancing, Load Balanced resources, Machine Imaging.

## I. INTRODUCTION

Every website have a limit of how many user can use a particular website at a time, if the number of users increases beyond the limit than there is a performance issue for the website and ultimately website is slowing down and at last it fail down completely. To overcome this we need more resources and we have to divide the load depending upon the available resources. So that each resource can handle incoming request with in its limit and system will run smoothly and finally system performance increases.

## II. LOAD BALANCING

Load Balancing means the ability to distribute the workload across multiple computing resources for an overall performance increase. It represents the ability to transfer any portion of the processing for a system request to another independent system that will handle it concurrently. E.g. Web/Database Server. Cloud computing provide services with the help of internet. No matter where you access the service, you are directed to the available resources. The technology used to distribute service requests to resources is referred to as load balancing. Load balancing technique can be implemented in hardware or in software. So with load balancing reliability is increased by using multiple components instead of single component.

## III. BENEFIT OF LOAD BALANCING

The various benefits of load balancing are as follows:

- Increase resource utilization
- Maximize throughput
- Lower latency
- Reduce response time
- Avoid system overload
- Increased Reliability

## IV. LOAD BALANCED RESOURCES

The different network resources that can be load balanced are as follows:

- Storage resources
- Connections through intelligent switches
- Processing through computer system assignment
- Access to application instances
- Network interfaces and services such as DNS, FTP, and HTTP
- In Load balancing Scheduling algorithms are used to assign resources
- The various scheduling algorithm that are in use are round robin and weighted round robin fastest response time, least connections and weighted least connections, and custom assignments.

- It is the responsibility of load Balancer to listen for service request. When the service request arises then load balancer uses scheduling algorithm to assign resources for a particular request. Load balancer is like a work load manager.
- Load balancer generates a Session ticket for a particular client so that other request from the same client can be routed to the same resource.

## V. MACHINE IMAGING

Machine imaging is a process that is used to provide system portability, and provision and deploy systems in the cloud through capturing the state of systems using a system image. A system image makes a copy or a clone of the entire computer system inside a single file. The image is made by using a program called system imaging program and can be used later to restore a system image. For example Amazon Machine Image (AMI) is a system image that is used in the cloud computing. The Amazon Web Services uses AMI to store copies of a virtual machine. An AMI is a file system image that contains an operating system, all device drivers, and any applications and state information that the working virtual machine would have. The AMI files are encrypted and compressed for security purpose and stored in Amazon S3 (Simple Storage System) buckets as a set of 10MB chunks. Machine imaging is mostly run on virtualization platform due to this it is also called as Virtual Appliances and running virtual machines are called instances.

## VI. CONCLUSION

This paper discuss that managing resources is of great importance for achieving good performance. In cloud computing we have different types of resources available and distributing the workload of the users to different resources so that they run concurrently on separate system for overall performance increase in processing. The technology used to distribute the workload to different available resources is called Load balancing.

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## BIOGRAPHIES



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