

# Analysis of Different Cloud Servers on Basis of Job Scheduling Approach

Tejinderjit Singh  
Research Scholar, India.

Parminder Singh  
Asst. Prof. RIET Phagwara, Punjab, India.

**Abstract – Cloud Computing is the evolving paradigm with changing their definitions but in this research project, it is defined in the term of a virtual infrastructure which can be provides the shared information and services of communication technology, via the internet “Cloud” for access of “external multiple users” through use of the Internet or the “large-scale private networks”. Cloud Computing is providing a computer user access to the Information Technology services i.e., data servers, storage, applications, without requiring understanding of a technology or even the ownership of infrastructure. To comprehend the Cloud Computing, an analogy to electricity computing grid is to be useful. The power company maintains and also owns infrastructure, the distribution company disseminates electricity, and consumer merely uses the resources without ownership or the operational responsibilities. The Cloud Computing is receiving great deal of attention, both in the publications and the users, from individuals at home to the U.S. Government. The Cloud Computing is a subscription-based service where one can obtain networked storage space and the computer resources. One is the way to think of Cloud computing to consider their experience with email. All email clients, if it is Gmail, Yahoo!, Hotmail, & so on, takes care of housing all of the hardware and software necessary to support personal email account. When someone wants to access their email, one is open their web browser, go to email client, and log in. In this the most important part of the equation is having internet access.**

**Index Terms – Three cloud networks namely Windows Azure, Marttalk and Go daddy, Microsoft’s Visual Studio 2010.**

## 1. INTRODUCTION

As the cloud computing environment is getting a huge platform to work on and in the upcoming years, cloud would be a name which would be used by common people for their data storage and) Cloud Computing Services.

Cloud Computing provides different services like Software as a service (SaaS), Platform as a service (PaaS), and Infrastructure as a service (IaaS) etc. Each service has its security issues. The Cloud computing concept generally incorporates combinations of the following:

- **Infrastructure as a Service:** Traditional computing resources such as servers, storage, and other forms of low level network and hardware resources offered in a virtual, on demand fashion over the Internet. IaaS in a general

sense provides the ability to call for resources in specific configurations at will and delivers value similar to what one might find in traditional data centre. IaaS power lies in its massive on-the-fly flexibility and configurability [11].

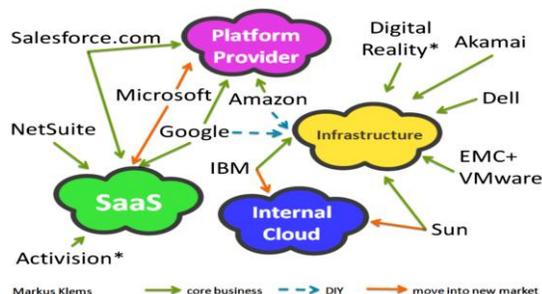
- **Platform as a Service:** A runtime-system and application framework that presents itself as an execution environment and computing platform available over the Internet with the sole purpose of acting as a host to application software Generally, PaaS focuses on enabling SaaS applications, so many well-expected core concepts, such as abstracting away multi-tenancy issues, are expected of any reasonable PaaS offering. Another key concept for PaaS is that needs to run semi-arbitrary instructions [11].
- **Software as a Service:** Specialized software functionality delivered over the Internet to users who intend to use the set of delivered functionality to augment or replace real world processes. Generally speaking, users within the SaaS space are aggregated into tenants or bodies of one or more categorically related users [11].

## Job Scheduling

Scheduling is refers to a set of policies and mechanisms for controlling the order of work to be performed by a computer system. Of all the resources in a computer system that are scheduled before use, the CPU is the most important. A variety of scheduling techniques has been developed in previous years. FCFS, Greedy [1], Round Robin [2], Priority Scheduling, Shortest Job First, Back Filling in operating system for scheduling number of processes coming from users. All this algorithms are to save amount of energy, time as well as power.

- Job scheduling is a term in which we take some jobs and send them to the scheduler to execute them. Now the question is how efficiently a job can be executed so that least amount of energy gets consumed. New parallel computing systems, such as the SUN Microsystems E10000, the SRC-6, and the SGI Origin 2000, provide a pool of homogeneous processors, a large shared memory, customizable I/O connectivity, and expandable primary and secondary disk storage support. Each resource in these system architectures may be scaled independently based

on cost and user need. A site which typically runs CPU intensive jobs may opt for a configuration which is fully populated with CPUs but has a reduced memory to keep the overall system cost low in the Cloud.



## Windows azure

Windows Azure is a cloud-based platform from Microsoft that aims to take the infrastructure challenges away from companies and provide a cost-effective way for hosting and maintaining demanding applications.

## 2. RELATED WORK

Anton Beloglazov et al. [2010] describes Cloud computing environments have to provide high Quality of Service (QoS) for their customers resulting in the necessity to deal with power-performance trade-off so propose an efficient resource management policy for virtualized Cloud data centers. The objective is to continuously consolidate VMs leveraging live migration and switch off idle nodes to minimize power consumption, while providing required Quality Service. We present evaluation results showing that dynamic reallocation of VMs brings substantial energy savings, thus justifying further development of the proposed policy.

Andrew J. Younge et al. [2010] define new framework is presented that provides efficient green enhancements within a scalable Cloud computing architecture. Using power-aware scheduling techniques, variable Resource management, live migration, and a minimal virtual machine design, overall system efficiency will be vastly improved in a data center based Cloud with minimal performance overhead.

RiniKaushik et al. [2010] presents an energy-conserving, self-adaptive Commodity Green Cloud Storage, called Lightning which configures the servers in the Cloud Storage into logical Hot and Cold Zones. Lightning uses data-classification driven data placement to realize guaranteed, substantially long, periods (several days) of idleness in a significant subset of servers designated as the Cold Zone, in the commodity datacenter backing the Cloud Storage. These servers are then transitioned to inactive power modes and the resulting energy savings substantially reduce the operating costs of the datacenter.

LizheWang et al. [2011] devoted to categorization of green computing performance metrics in data centers, such as basic metrics like power metrics, thermal metrics and extended performance metrics i.e. multiple data center indicators. Based on taxonomy of performance metrics, this paper summarizes features of currently available metrics and presents insights for the study on green data center computing.

Gregor von Laszewski et al. [2011] proposed to predict a workload's thermal effect on a data center, which will be suitable for real-time scenarios. The researcher use machine learning techniques, such as artificial neural networks (ANN) as a prediction methodology. They use real data taken from a data center's normal operation to conduct experiments. To reduce the data's complexity, they introduce a thermal impact matrix to capture the special relationship between the data center's heat sources, such as the compute nodes. Results show that machine learning techniques can predicted the workload's thermal effects in a timely manner, thus making them well suited for real-time scenarios. Based on the temperature prediction techniques, we developed a thermal-aware workload scheduling algorithm for data centers, which aims to reduce power consumption.

Jai Dayal et al. [2012] describe itself in the field of thermal aware workload placement for data centers. In this paper, an analytical model is proposed, which describes data center resources with heat transfer properties and workloads with thermal features. Then two thermal aware task scheduling algorithms, TASA and TASA-B, are presented which aim to reduce temperatures and cooling system power consumption in a data center. The results show that the algorithms can significantly reduce temperatures in data centers by introducing enduring decline in system performance.

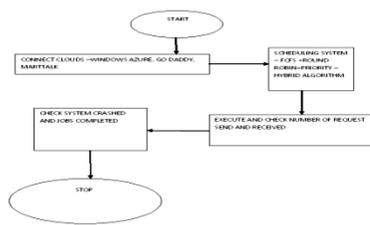
System and why a different set of processes is a candidate for the allocation of the CPU at different time. The objective of the study is to analyze the high efficient CPU scheduler on design of the high quality scheduling algorithms which suits the scheduling goal.

## 3. IMPLEMENTATION METHODOLOGY

We would be creating a web based application which would include systems and a scheduler which would be deployed over three cloud networks namely Windows Azure, Marttalk and Go daddy over a paid network.\

For the same purpose we need to purchase space from the cloud. Every cloud has its own working environment, we need to configure our application accordingly.

Then on the basis of scheduler we would be providing tasks to the scheduler located on the cloud platform. We would be executing the jobs according to the algorithm configured at our front end. The front end for the same purpose would be MICROSOFT'S VISUAL STUDIO 2010.



#### 4. CONCLUSION

The followed procedure executes different number of jobs at different iteration to check the compatibility of the algorithm when the load is low and when the load is high. The proposed algorithm presents a very good example of setting up the virtualization of the system when the work load is more over the system AZURE and MARTTALK and show that there are incentives to save energy.

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