

QOS &GSLA Based Resource Provision Technique in Cloud Computing

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Abstract— Accurate resource provisioning in cloud workload is mainly depends on Quality of Service (QOS) and Green Service Level Agreement (GSLA). According to the user requirement for best workload main optimization problem is resource pair. In this paper resource provision technique mainly focus on efficient provisioning of resource and energy reduction. QOS based provision is utilizing resource efficiently and GSLA is crucial ability for the data centre (more consumption of energy), carbon footprints to the environment. The process of mapping between VM and task user gets resource in peak time so resource never wasted.

Keywords-quality of service; cloud computing; gsla; cloud workloads.

I. INTRODUCTION

Cloud computing is a virtualized network of server's technique that relies on-demand resources sharing rather than the personal furniture to handle offer of the internet on pay-per-use basic intrigue and provide reliable, customized and QoS (Quality of Service)[1]. In cloud computing, Resource Allocation is the process to assign the available storehouse to the user according to the resource piece policy. Resource Allocation is the segment of warehouse management is used to allocate the available resource in an economic means and helps to

management action performed by both consumer and cloud provider.

A. Cloud computing Model

Cloud computing can be divided into the following types:

- Public clouds which can be access by anyone and the services they may use at any time.
- Private clouds whose intelligence tins be managed within the company and access without the restrictions of the network bandwidth, security etc.
- Hybrid clouds are a combination of the private/internal clouds and the external cloud resources.
- Community cloud the cloud basis is shared between the organizations with similar interests and necessity whether managed internally or by a third-party and hosted internally or externally. The costs are range over fewer exploiter than a public cloud (but more than a private cloud).

B. Cloud computing services

Cloud service providers offer services that can be classified into the following three categories:

- Infrastructure as a Service (IaaS): Which allows customers to use hardware figuring means such as CPU, memory and processing power.

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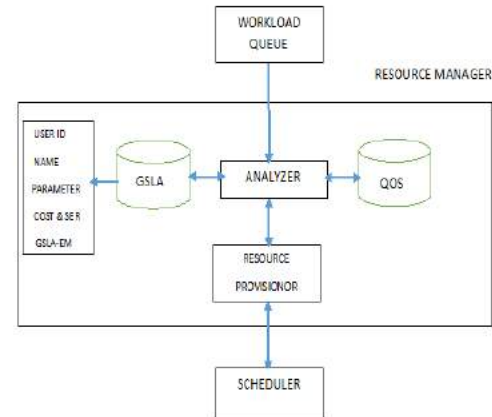
- Platform as a Service (PaaS): It is a development pillar that sustenance full "Software Lifecycle Process" that allows customer to develop cloud services.

- Software as a Service (SaaS): it providing software and application that is remotely available by consumers.

II. RELATED WORKS

Gaun et al. [2] have proposed integrated power statute resolution for virtualized data centers which takes the benefit of VM resizing and waiter solidification for energy conservation and QoS defined in SLA. In [3], Chen et al. have proposed energy aware SLA (EASLA) scheduling algorithm for precedence-constrained applications. This algorithm minimized the determination narrowing within the permissible limits of type span of tasks. FIT4Green project [4] has proposed an energy-aware figuring framework. It has comprised of energy saving strategies and planning. These strategies have been packaged and used in the context of intelligence hearts sovereignty frameworks. Serrano et al. [5] proposed SLA aware QoS based warehouse provisioning technique to minimize the prize of execution of workloads without considering presentation time. Our proposed QoS and GSLA metric based warehouse provisioning technique (QoS Metric) has been compared with existing resource provisioning techniques. García et al.[6] proposed SLA based warehouse provisioning way for dynamic appliances which reduces presentation prix without considering performance time. Wu et al. [7] proposed SLA based provisioning technique to reduce warehouse price and SLA deviations. The law of purchasers requests, mapping them with appliances is defined along with the observations of different types of workloads by considering QoS such as performance time. Lua et al. [8] proposed QoS based autonomous SLA mold of violation-filtering for IaaS and PaaS occupying a SLA appraising dozens direction & penalty arrangement and presenting a repository provisioning mechanism to manage resource efficiently without specifying the QoS parameters.

III. ARCHITECTURE DIAGRAM



DESCRIPTION

The above figure shows that: workloads are entrance for tendency and execution, stored in a in a workload queue. Resource manager aim and controlling the state of resource. It contains regarding the information of resources. And maintain the QoS requirement and GSLA to measure the resource for performance based on availability of cloud consumer and sketch dope of caliber of service. GSLA contains information closely name, id, GSLA-EM (energy minimization), service. The repository information means CPU, memory, type of storehouse that's all are available in warehouse pool. Analyzer is an execution process. Resource steward analyze Qos and GSLA based on measure allow. Resource provisionor allow executing the workloads if the repository available in resource pool. Else Resource manager disclosure to again submit the storehouse after that has provision. And the scheduler executing the resource.

IV. GREEN SLA

Previously, the SLA using in cloud computing for negotiation between cloud provider and user. And provide services according to the user but now a days most works in optimizing the energy has been centered in data center. Main factor is how we optimizing the energy in data center can more effective way. So the Green Service Level Agreement has come. Optimizing the energy in data

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center maintain through VM migration, replacement and consolidation.

- For creation purpose it takes metrics value from SLA, hardware, software etc. and for implementing it reserving time slot for id.
- Availability of data used by 99% of the time.
- It specifies size and cost with respect to time of resource usage.
- And negotiation deals with time slots, cost, penalties, and hardware configuration and energy optimization inducements.

V. QUALITY OF SERVICE

A. Workload Identification

The cloud workload contains web server, file server, and transactional database etc. and adding the quality attribute for the workload. These are the example of workload identification [9].

- Websites: it is a social network and any information regarding website are easily available to cloud consumer. Network Bandwidth, Availability, storage etc. are mainly quality attribute for this workload.
- Online transaction: In online transaction there is several insurance policies for transaction and mostly we using the internet banking. Security, Internet Availability, accessibility etc. are mainly quality attribute for this workload.
- E-commerce: It includes all the malls and supermarket. Computing load and customizability etc. are mainly quality attribute for this workload.
- Financial Services: It mainly includes the insurance and banking system. Security,
- Availability and Integrity etc. are mainly quality attribute for this workload.
- Software Testing: It includes the development of web application with rational rose software. Flexibility, testing time, computing capacity and self-service rate etc. are mainly quality attribute for this workload.

A. Workload Analysis

After identified the workload it have been analyze through the workload pattern and actually cloud based patterns contains the some type of application that the user want to execute.

- Web service interface and API
- Cloud deployment
- Storage base system
- Instant service management
- Design for operation

C. Pattern Identification

- Websites –web service interface and API
- Online transaction- cloud deployment
- Ecommerce-Storage base system
- Financial Services-Instant service management
- Software Testing-design

C. Requirement of Qos

- Reliability
- Testing time
- Availability Network bandwidth
- Computing capacity

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D. *Calculate metrics, Weight and Q-value*

Conversion metrics.

Weight (%)	weight
0-20	1
20-40	2
40-60	3
60-80	4
50-100	5

E. *Measurement of Quality Attribute*

Measurement of Q attribute	q-value
Low	1
Medium	3
High	5

VI. CONCLUSION AND FUTURE WORKS

In this paper QOS and GSLA based on resource provisioning technique in cloud environment is proposed. The main aim is provision of resource efficiently, workload execution in cloud reduce the energy consumption in cloud. Here several workload are identified, analyze and energy consumption method are used. And we have calculate the q value and weight. In future G-QOS based resource provision technique would be developed to maximize resource utilization and energy consumption negotiation by user.

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