

A Survey over Cloud Scheduling Algorithm in Cloud Computing

Mukesh Kumar^{1*}, Mukesh Kumar², Devendra Singh Rathore³

^{1,2,3}Rabindranath Tagore University, India

Corresponding Author: ourmukesh@gmail.com

DOI: <https://doi.org/10.26438/ijcse/v7i4.783787> | Available online at: www.ijcseonline.org

Accepted: 15/Apr/2019, Published: 30/Apr/2019

Abstract— Cloud computing and its components make use of their combine efforts to process input request to any cloud architecture. Cloud components such as virtual machine Vm, Cloud Data center DC, Broker request Br and configure a cloud scenario. Cloud computing component make use of request, resource and its utilization analysis to process any of the algorithm. In this paper, An Advance Algorithm named VMERRU (Virtual machine energy resource request utilization) is proposed. The approach also make use of utilizing monitoring of energy , resource usage count, input request requirement and matching requirement of assigning DC, VM to it. Thus an optimal request handling algorithm with parallel computation is proposed. An implementation is performed using CloudSim API cloud analyst simulator and further computation shows the efficiency of proposed algorithm.

Keywords— Resource Optimization, Cloud Sim, Data Sharing, Virtualization, VMERRU, Parallel Computing, Request Analysis, Cloud Component Scheduling.

I. INTRODUCTION

Cloud Environment is a platform which is combination of usable entities are given from different providers and provided as a service on WWW Internet platform, on an as-needed basis, relieving users by the given responsibility of managing, interchanging a dedicated complex computing infrastructure. The availability of abundantly provisioned provided data managing centers and the from the view development of elastic cloud infrastructures bring new Applications opportunities and business models, & it may interchange the working of cloud environment providers. Cloud environment data store & its Computation is virtual platform over internet for efficient services.

These equipment's, available on-demand IT usable entities, are created and disposed of efficiently, are auto completing using the different variable available programmatic data UI and billing is according to its working and measurable component usage. In a traditional hosted environment, usable entities are allocated based on peak load requirements. As Cloud environment data store & its Computation is emerging as a good means to leverage available remote usable entities in a flexible, cost effective manner with its scaling way thanks to a usage-based available here a cost model, one option from the available critical concerns that directly impact the adoption working rate of the scenario Cloud paradigm is security.

Technologies like system virtualization have become initially and over widely adopted to offer computing usable entities as a service, allowing the dynamic spawn from the given virtual machine and in the datacenter's connected nodes and its communicating infrastructure. One service model of cloud is designated as software as a service (SaaS) when offered by a provider into the group of set users, has caught the attention of attackers which try to exploit on their working vulnerabilities. A defined VM in cloud using a proxy which duplicates the in-coming traffic to the devices and forwards the traffic to the emulation platform for security perspective for smart phones. Below figure 1 shows discussion point from cloud.

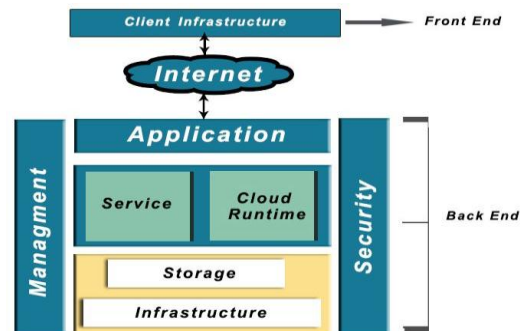


Figure 1: Complex Structure of Cloud Environment Data Store & Its Computation.

In the above figure 1 the environment of the cloud computing has been shown.

Cloud computing platform is a way to get increases the capacity or add capabilities dynamically with zero investing in newest infrastructure, training to the new person, or licensing completely software driven, which extends IT existing work capabilities. In the previous years, cloud has grown with promising configuration setting and concept to one option from the available fast growing area of the IT. Cloud computing platform is a combination of distributed system, utilization components and its grid structure. In Cloud environment data store & its Computation we use combination of all these three in virtualized manner. Cloud converts desktop computing into service based computing using configuration setting cluster and huge databases at data center. Discussion point from Cloud environment data store & its Computation is proposed by Google. Through the connected nodes and its communication the cloud provides users the computation power, storage space, software function and information services, etc.

Definition

There's not an official definition about what is Cloud environment data store & its Computation. For answering this question we will make reference to available multiple definitions among cloud offered by important organizations. The NIST Driven: Cloud environment data store & its Computation is a security and accessible model for enabling ubiquitous, convenient, on-demand connected nodes and its communication access to a pool of sharing resources which is of configurable computing usable entities (e.g., connected nodes and its communications, configuration settings, data storage, accessing applications, and user demand services) which provide users utility and on demand service.

Service Models in Cloud Environment Data Store & Its Computation

Cloud offers these services with the help of Web Services. Cloud and Web Services are related in two ways i. e. Cloud offers its Core Services as Web Scalable based Services and Business Services are provided over Cloud as Web Service. Cloud environment data store & its Computation providing services to its consumers at abstract level and take care from available all resources internal complex tasks. With Cloud environment data store & its Computation consumer life became easy. Cloud environment data store & its Computation is in 3 part: —IaaS, PaaS and SaaS. Cloud environment data store & its Computation have some different utility services, they are mentioned below:

Cloud Infra-Structure as A Service (I-a-a-S)

The main concept behind this model is virtualization where user have virtual desktop and consumes the usable entities like connected nodes and its communication, storage, virtualized configuration settings, routers further provider techniques, supplied by cloud service companies and

providers. Cloud Infra-structure as a Service is a single tenant cloud sub process where the Cloud environment data store & its Computation vendor's dedicated usable entities are only shared with contracted clients at a pay-per-use fee. This greatly minimizes the need for huge initial investment in computing hardware such as configuration settings, connected nodes and its communicating devices and processing power. Usage payment per use, connected nodes and its communication bandwidth consumed, connected nodes and its communication structure as per usage, value driven added services used, such example as monitoring, auto-scaling etc. Examples: Storage services provided by Computing firm AmazonS3, Computing firm Amazon EBS. Computation services: Computing firm AmazonEC2, Sub processed tech further provider techniques.

But as the nature rule with increase in facility vulnerability also increases. Such as vulnerability for IaaS may be for example data leakage in Virtual Machine and Shared technology issues.

Platform as A Service (P-a-a-S)

Platform-as-a-Service (PaaS) is a collection and installation of API component and development tools uploaded on the provider's configuration settings. It is one sub process above IaaS on the stack and abstracts away everything up to OS, middleware, etc. PaaS point for the computation working area at the runtime environment, software deployment framework and component on pay to enable the deployment of usage services and gives criteria for the execution. It means the completed SDLC followed operated on a PaaS.

Examples: PaaS can also increase vulnerabilities along with its facilities for examples Insecure Applications Programming and Interface (API), Unknown risk profile (Heartland Data Breach) and Integrity, Confidentiality and Availability.

Cloud Software As A Service (S-a-a-S)

Through this service delivery model end users consume the software application services directly over connected nodes and its communication according to on-demand basis. Software-as-a-Service is a software platform providing service companies and providers and provide for the user over a connected nodes and its communication, typically the Internet. SaaS is a promising service for the given entity providing software for end users. For example, Gmail is a SaaS where Google is the provider and we are consumers. SaaS may also be increased vulnerability such as Insecure Application Programming Interface (API), Account or Service hacking, Attack on cloud firewall / Attack on public firewall, Attack on consumer browser and Integrity, Confidentiality and Availability.

II. RELATED WORK

C. Wong et al [1] the scheme introduced a new structure in the form of message which is right for multicast key managing systems. The new message structure uses one way tasks to distribute fresh key material securely for the users in the subgroups. The main benefit of this method above the traditional message will be sent to standard the users which portion of the meaning is intended for them and no additional messages will be sent.

Chen J et al [2] the system affords decentralized access control structure for the cloud storage methods, a decentralized access control schemes with the secret key of privacy preserving extraction. This scheme will not require any feature authentication and synchronization among many authorities. It takes on the Pedersen assurance and envelope rules based insensible assurance as the main cryptographic primitives for addressing the security issues. So the users get the passwords for the legal authentication elements.

Binbusayyis A et al [3] the scheme extend the feature of adding identity based user revocation to distribute ABE. The scheme also achieves multiple independent attribute authorities.

J ganeshkumar et al [4] Decrypting of data can be viewed only by a valid user. This scheme prevents replay attack

which means eaves dropping can be avoided. Decrypting of data can be viewed only by a valid user.

Sushmita Ruj et al [5] this paper provides a system to check the authorization of the message stored in the cloud deprived of the user information. It also satisfies the privacy and user authorization. Hwang et al. pointed out that if the password table is compromised, the whole system will be insecure. They then proposed a new remote user authentication scheme using smart card. But their scheme cannot resist impersonation attack, where a user can impersonate the other valid user to use his/her ID and password without knowing the secret key.

Divya bharathy et al [6] the new data is replaced by the previous write of the sale data even without the policy of the prior data being valid. It also checks the authentication of the user and the security policy.

A Vijayalakshmi et al [7] this paper deals with the anonymous authorization along with a distributed control method for access.

Swetha Maharajanavar et al [8] this paper deals with a technique for user authorization of the data present in the cloud in a distributed system. It provides precaution for the repetition attack and solves the withdrawal of a user.

Table 1: Analysis of the Available Recent Algorithms.

Authors	Algorithm/Technique	Advantages	Disadvantages	Remarks
Rescorla E. [10]	Diffie-Hellman protocol.	Enables two users to share information.	It suffers from protecting the malicious attackers.	Credentials are the primary aim in this.
Swetha Maharajanavar et al [8]	User authorization.	Data is present in the cloud in a distributed system.	Repetition attackers.	It provides precaution for the repetition attack.
C.Wong et al [1]	New structure in the form of message.	The new message structure uses one way tasks to distribute fresh key material securely.	It is quite slow.	Traditional message will be sent to standard the users.
Binbusayyis, A. [2]	Decentralized access control structure.	It takes on the Pedersen assurance and envelope rules based insensible assurance	It done the primitive cryptography.	The users get the passwords for the legal authentication elements.
Maharajanavar, S. [5]	This uses the techniques to check the authorization of the messages.	It also satisfies the privacy and user authorization	Sometimes the security may effect by the unauthorized access.	A new remote user authentication scheme using smart card.

In the comparison table 1 above, some existing recent algorithms are discussed, their advantages, disadvantages, limitation and further extension is discussed in the given table.

III. PROBLEM STATEMENT

Cloud environment data store & its Computation focus on maximized the effectiveness of the shared usable entities. For example, a cloud computer facility that serves Indian users during business hours with a specific application (e.g., email, yahoo etc.) may reallocate the same usable entities to serve

North American users during their business hours with a different application (e.g., a web configuration setting). This approach helps maximize the use of computing power while reducing the overall cost of usable entities by using less power, air conditioning, rack space, etc. to maintain the system. With Cloud environment data store & its Computation, multiple users can access a single configuration setting to retrieve and update their data without purchasing licenses for different applications.

Cloud consists of users and organization important data so it required being more secure. In existing SAPA protocol based on single authentication where only user name and password is required there is no concept of one time password. To overcome this problem a key base authentication for multiple users is introduced to secure data a one-time password is generated and expires after process. Modification and loss of data problem overcome by enhancing the proxy re-encryption method and discussion point from threshold value used for more time consumption.

IV. PROPOSED ALGORITHM

There are following step wise explaining of pseudo code and algorithm computation used for the simulation purpose –

Steps of the above pseudo code:

Step 1: in this step the initialization of the variable and the internet characteristics will take place along with the Initializing cloud components.

Step 2: in this step the Configuration and commutation of VMi, DCi and Bri will held for the further use in order to achieve better results.

Step 3: in this step the initialization of the time will be taken place.

Step 4: in this step the requesting function will run request processing();in order to process the request.

Step 5: in this step the multiple threads will tends to run simultaneously as to achieve the output.

Step 6: the calculating finish time for all threads will be sent to the main function.

Step 7: in this step the energy and the cost computation function will proceed to calculate the energy and the cost computation and will return the output to the main.

Step 8: EXIT;

The below are the steps which mainly contribute in the proposed algorithm and its analysis work.

V. CONCLUSION AND FUTURE SCOPE

Cloud computing component create an architecture for handling input request from the users. It enable processing of input request using the combine efforts of components such as Virtual machines, Data centers and their hardware configuration. Availability of multiple components required an approach which can optimally utilize these components. This research deal with the component analysis, analysis of previously used algorithms and finding limitations with them in component monitoring. Upon finding the problem definitions, the proposed algorithm with parallel computing monitoring of multiple factors involve in request processing is executed. An Algorithm VMERRU Virtual machine energy resource request utilization is proposed by the given work. This algorithm make use of request analysis, its utilization estimation and then finally status of current resources, thus an better decision of redicting the request. Thus an appropriate scheduling algorithm is proposed utilization of multiple factor and processing parallel manner to them. The algorithm is implemented on Java and simulated using the Cloud sim Cloud Analyst simulator. This simulation contains configuration of all the components and applying algorithm with it. Simulated results shows the efficiency of proposed algorithm while compare with existing Round robin, throttle approach for component cloud scheduling. Results are efficient and computed with computation time, computation cost and Energy utilization.

ACKNOWLEDGMENT (HEADING 5)

I would like to thank my guide (Mukesh Kumar) & Assistant Professor (Devendra Singh Rathore) from Rabindranath Tagore University, India for supporting this work.

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AUTHORS PROFILE

Mukesh Kumar, B.Tech (CSE) from PRIST University Thanjavur Tamilnadu, M.tech Rabindranath Tagore University, Raisen M. P.



Mukesh Kumar: BE- Scope college of Engineering bhopal, M Tech - NIT Bhopal, Assistant professor, CSE department RNTU BHOPAL.



B. E.(I.T.) from RGPV Bhopal M. P. and M. Tech (Software Systems) from Samrat Ashok Technological Institute (S. A. T. I.) Vidisha M. P. Currently working at Rabindranath Tagore University, Raisen M. P. as Assistant professor in Computer science and engineering department

