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Improving the Processing Time with Equally Spread Technique in Cloud Computing

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***Abstract*—**Cloud Computing attracts many people because disappearing entrepreneur needs users consider pre-provisioning, and allows small businesses and expanding resources only when there is an increase in demand for services. In our research work we have used the Equally Spread Current Execution Load technique by creating 50 user bases and 2 data centers on different regions and configuring each user bases on different data centers. Furthermore simulation is run for 90 minutes using service broker policy for the betterment of the results. Finally we configured it with 50 user bases with 2 data centers on different regions by using linux operating system with virtual machine monitor (VMM). By allotting physical hardware units on data centers and running the simulation for 90 minutes it has been observed that the results obtained in case of Equally Spread Current Execution Load are far better than that of round robin. So in this research work we have implemented the Equally Spread Current Execution Load technique and improvement has been made on the behalf of overall response time and processing time of data centers which is much distinguishable as compared to the Round Robin Technique.

***Keywords*—** *CC, FIFO,SJF, FCF,.*

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I. INTRODUCTION

Cloud computing is an integrated, parallel and distributed concept of computers that allocates resources such as hardware, software and information to computers or other devices on demand. With the help of cloud computing and installation on the Internet, the customer can enter the mentioned resources paying for the duration of the use. Virtual Machine (VM) is a management unit that serves as the basis for the new computer technology. Virtualization is the creation, execution and management of a hosting environment for various applications and resources. Virtual machines in cloud computing environments share resources such as basic processing, the bus system, etc. IT resources available for each VM are limited by the total processing power.

CHARACTERSTICS OF CLOUD COMPUTING

In Cloud Computing Following are the main characteristics are as under:-

1. Rapid Elasticity: - The computing in case of cloud environment is stretchable that is you can extend the application or project any time anywhere you want to. Therefore it has this feature of elasticity. Cloud services can be rapidly and elastically provisioned, in some cases automatically, to quickly scale out and rapidly released to quickly scale in. To the consumer, the capabilities available for provisioning often appear to be unlimited and can be purchased in any quantity at any time.
2. On Demand Service: - This is the main feature of Cloud computing that user can access network or storage resource anytime he or she wants from provider and too without any interference of human. Computer services such as email, applications, network or server service can be provided without requiring human interaction with each service provider. Cloud service providers providing on demand self-services include Amazon Web Services (AWS), Microsoft, Google, IBM and Salesforce.com.
3. Broad Network Access: - The services of cloud are always available over the network. Therefore user can access any service any time. Cloud Capabilities are available over the network and accessed through standard mechanisms that promote use by heterogeneous thin or thick client platforms such as mobile phones, laptops and PDAs.
4. **Greater security**:– CC improved security means to impart high level of security in the cloud environment. High level security means to ensure that data and information is highly protected. Moreover, imparting security controls over the physical machines so that there is no compromise with the feature of security. Apart from this it also focus on the security of connections and authorizations to be made.
5. **Error Resistant:**– Fault tolerance is one of the important feature of the CC as its main function is to keep the system working when one part or other is not in working mode due to some problem or failure. It also means that if any part gets failed then system will continue working slowly.
6. **Cheaper:**– As the trend is now shifting towards the CC, therefore people nowadays think to save money instead of spending more amount on buying whole infrastructure. CC provides you infrastructure online to store, manage and process information in very less price. They only charge according to an individual use which means pay per use policy.

II. LITERATURE REVIEW

Yanfeng Ajay Gulati et al [1] Our efforts in this paper is to study the effect of the Round robin technique with different dynamic approach the host's live bandwidth parameters, the long duration of the cloud, the size of the VM and VM image

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width band. But today's requirement has diversified with the growing heterogeneity of resources in cloud resources. Most of the cloud computing balancing workload is done under homogeneous resources. CloudSim simulator has been used for this application and a new approach has also been developed.The charge is optimized dynamic robin round setting to proportionally vary these parameters.

Pooja Samal et al [2] Cloud is a platform that provides dynamic clustering and virtualization resources. Cloud computing is based on Internet business computing highlights emerging technology. To properly manage the service provider resources, you need to balance the workload for the service provider being sent. In this paper, we analyze the various policies regarding algorithms developed using an analysis tool, that is, the cloud analyzer. Load Balancing also helps to improve the performance of the central server. The comparison is also made to the Round Robin (RR) algorithms.

Harsha Amipara et al [3] We have demonstrated several retail outlets where the cloud ID information, cloudlet status, Datacenter ID, VM ID, start time and end time for one or more clouds and is determined host . In this article, we show you how to use cloudsim with NetBeans. And we have proposed the source code for the simple example of cloud simulation.

Mohsin Nazir et al [4] Many other suppliers are moving in this area, and competition is driving lower prices. Attractive prices, the ability to free up staff for other features, and the ability to pay for the "necessary" services will continue to drive more companies to consider cloud computing. Cloud Computing, designed as the next-generation IT business architecture, is a talk of the city these days. As the cloud dominated the IT market, we can expect a big change to the cloud in the coming years.

III. Proposed Methodology & Results

Following methodology will be used in order to achieve better performance:

Step 1: Design Data Center.

Step 2: Create No. of users on Different Regions

Step 3: Using optimization policy

Step 4: Implement Load Balancing Policy in Single Data Center

In Results and Performance analysis, we are first showing up the setup and configuration of the simulator that shows different users bases and data centers created on the different regions. In order to implement our proposed technique, firstly configuration and implementation has been done in Cloud analyst simulator.

Optimization for Round Robin

	Avg (ms)	Min (ms)	Max (ms)
Overall response time:	**277.22**	**36.86**	**632.64**
Data Center processing time:	**0.32**	**0.01**	**0.98**

Response Time by Region

Userbase	Avg (ms)	Min (ms)	Max (ms)
UB10	**500.22**	**400.12**	**605.14**
UB11	**199.94**	**158.14**	**243.11**
UB12	**199.11**	**149.14**	**242.14**
UB13	**500.69**	**405.15**	**617.62**
UB14	**499.04**	**400.11**	**617.64**
UB15	**300.29**	**223.61**	**372.14**
UB16	**199.92**	**161.14**	**249.11**
UB17	**49.92**	**38.13**	**62.86**
UB18	**501.08**	**385.12**	**610.14**
UB19	**200.58**	**159.12**	**245.11**
UB1	**301.09**	**234.13**	**378.14**
UB20	**50.24**	**39.13**	**64.61**
UB21	**299.20**	**229.61**	**367.53**
UB22	**500.07**	**390.14**	**612.61**
UB23	**200.97**	**157.12**	**257.14**
UB24	**300.42**	**234.14**	**373.64**
UB25	**49.99**	**39.11**	**60.88**
UB26	**199.61**	**156.11**	**245.14**
UB27	**199.56**	**153.14**	**250.12**
UB28	**498.42**	**372.65**	**600.12**
UB29	**200.39**	**162.12**	**250.12**
UB2	**50.12**	**39.63**	**61.35**
UB30	**299.64**	**240.12**	**367.62**
UB31	**300.70**	**238.65**	**375.14**
UB32	**49.93**	**36.86**	**61.13**
UB33	**199.69**	**152.14**	**243.12**

Overall Response Time Summary For Equally Spread Current Execution

	Avg (ms)	Min (ms)	Max (ms)
Overall response time:	**277.23**	**37.35**	**625.11**
Data Center processing time:	**0.32**	**0.01**	**1.00**

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Response Time by Region

Userbase	Avg (ms)	Min (ms)	Max (ms)
UB10	500.05	400.12	607.64
UB11	199.58	158.12	243.14
UB12	199.29	144.11	242.14
UB15	300.38	223.61	372.14
UB16	199.78	161.11	249.11
UB17	49.93	38.13	61.63
UB18	501.19	385.12	610.14
UB19	200.20	152.07	245.11
UB1	300.85	234.11	378.11
UB20	50.24	38.63	64.63
UB21	299.82	229.64	370.64
UB22	500.92	390.14	612.64
UB24	300.05	235.63	373.64
UB25	50.00	39.13	64.88
UB26	199.97	156.14	245.14
UB27	199.79	153.14	252.12
UB28	499.42	372.65	607.64
UB29	200.03	162.14	250.12
UB2	50.13	39.63	61.37
UB30	300.02	240.10	367.62
UB31	300.88	232.62	375.11
UB32	49.92	39.86	61.36
UB33	199.80	159.12	244.14

IV. Conclusion

In our technical proposals Equally Spread Current Execution Load technique has been used for minimizing the virtual machine cost. Our work when compared with Round Robin gives better result for minimizing the time and cost. Hence performance is better in case of equal space thread. We have taken 50 users and 2 Data Centres. The performance will definitely improve the processing time and the response time of data center when it is implemented. When a different job for the data center is assigned using the policy closest to the data center agent and a strangling technique, there will be a great improvement in the Performance of data Center.

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