

ENHANCED AUCTIONING MECHANISM FOR BETTER RESOURCE ALLOCATION IN CLOUD COMPUTING

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ABSTRACT

Many users are now migrating towards the use of Cloud services due to cheaper cost and power infrastructure availability. Because the request increases, the numbers of resources available are not enough to complete the demand of every customer. So providers acquire a new fundamental called auctioning where based on need, users take part in auctioning process and provide their prize to purchase the resource for the required amount of time. Now based on this request from the client it seems difficult for a provider to provide resources to the customer who just gives prize high coz that might be possible the service or communication cost of the customer to the resources are higher because of the geographical distance. The provider cannot deny this issue because if the service provided is not meet the expectation of the user that breaks the trust of the customer towards providers and this happens only because of the resource made available to the customer by considering the price and ignoring other parameters like the location of the user. Even many times the auctioning process works effectively there may be pending resources even the user request available. This happens due to the nominal difference in user price and provider offer price. So to solve both of these important issues we aim to provide a Framework that efficiently solved mentioned problem which becomes an obstacle in the auctioning process and provides better service to the users in a Cloud environment.

Keywords: :- Cloud Resource Allocation, Priority-Based Auction, Auction Mechanism, pricing, Auction, Market Mechanism.

1. INRODUCTION

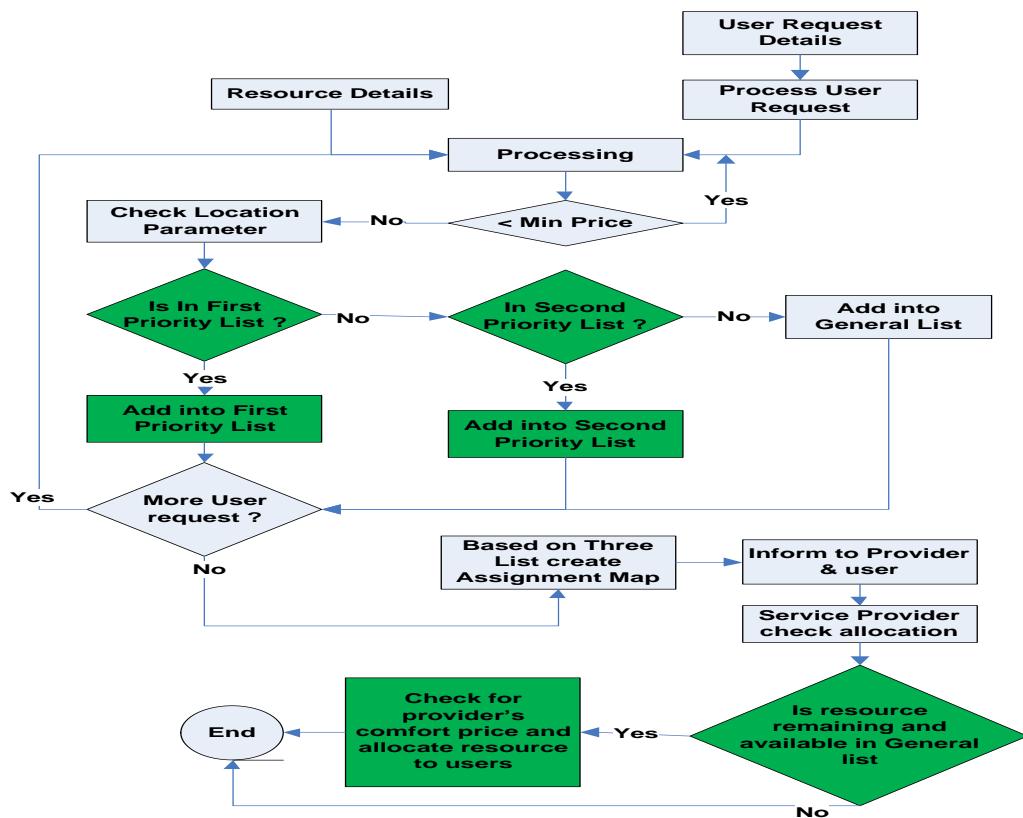
Cloud computing is a delivers computer services such as a services, e.g., (SAAS, PAAS, IAAS) Cloud providers deliver cloud services to cloud clients. Cloud customers use providers resources (e.g., processors, memory, storage space, network etc.) in the most demanding working used for cloud. Cloud customers are given a clear view of where resources are available and how resources are managed on portable devices, but the actual burden of that deployment remains with the providers. Users can reduce costs and improve Quality of services through an efficient resource allocation system. Because method of resource allocation is important for the cloud computing. but allocating limited providers resources to cloud clients to achieve high utilization is a complex problem for efficiency Typical terms of operation of cloud computing include services (such as provider revenue, customer support, time saving), resource utilization and Quality of services. A cloud providers can maximize revenue from allocating high resources in to customers through an efficient service sharing techniques. Auction is an important market method widely used to sell goods and distribute resources. An auction method for resource allocating cloud computing. proposed an e-market approach based on a dual auction for the exchange of betters and services online. Used a combined auction on both sides to allocate grid resources. proposed a closed bid second method and an integrated auction method. auction-based distribution methods for cloud computing.

2. METHODOLOGY

Whether the minimum price that is specify by the resource provider. user request we will check price which is specify by user as well as price which is specify by user resources service provider. if you user price is less then minimum price provided by resource provider than we will not make any type of process other wish we will check from which location the user make a request. if you user make a request from the location which a specify by service provider it is a first priority list then we will add then user request in to first priority list. If the location is not in the first priority list then we will check whether it is second priority list and if it not second priority list and check for more request if it is not in the second priority list then we will add request into general list. once this the processing is over we will check how much resources request are there in to a general list. general list is empty that means all request are satisfy by the first priority list and second priority list. there we will process if there are same request which is available into general priority list then I will check comfort price the service provider.

3. MODELING AND ANALYSIS

Flow of Auctioning Mechanism In cloud Computing is described as Following



Algorithm Step:-

- Step1: Start
- Step2: User Send Request To Provider
- Step3: Get Processing
- Step4: If Resources After Process User Request
- Step5: Processing User Request
- Step6: Minimum Price Check Location Parameters go to Step3
- Step7: If it is First Priority List otherwise and Second Priority
- Step8: If First Priority and Second Priority then Go to General List
- Step9: If More request are come than check allocation otherwise check the comfort price
- Step10: End

4. RESULTS AND DISCUSSION

In this section results and discussion of the study is written. The rejection of price and location are happen. It does not working in the location base and price base resources allocation

Table:-1

	Rejection		Existing Allocation		Proposed Allocation	
	Consider Price	Consider Location	Consider Price	Consider Location	Consider Price	Consider Location
10	5	3	0	0	2	1
20	9	7	0	0	5	3
30	14	11	0	0	9	3
40	15	18	0	0	11	5
50	19	23	0	0	14	7



Figure:-1 Request Satisfied

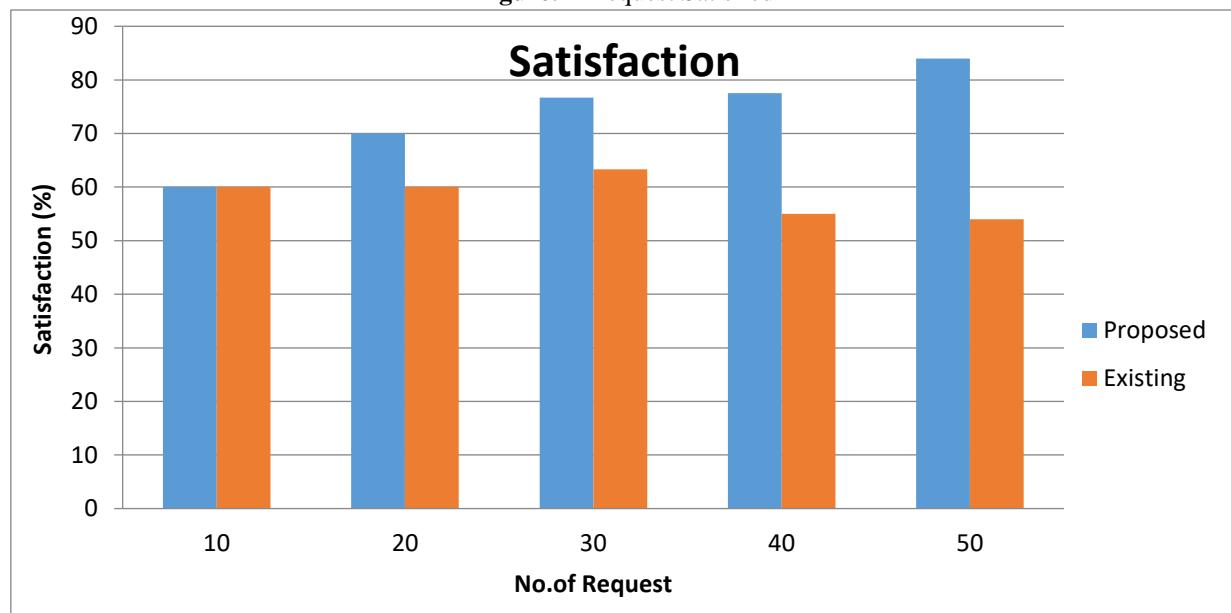


Figure:-2 Satisfaction

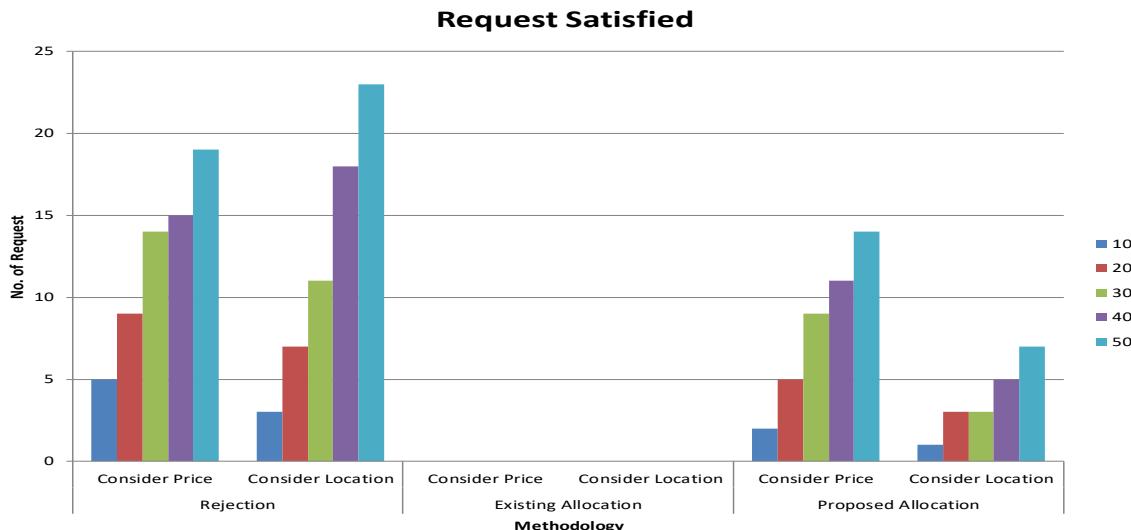


Figure:-3 Request Satisfied

In this section there are user request which is request by user for resources. Provider allocate resources as per user request. This is a graph for Allocate resources provider. Here users send to 5 request to the provider. Their are 4 request is satisfied. In this comfort price are added.

5. CONCLUSION

Higher availability results in higher provider costs. The pay-per use on demand models promoted by cloud computing. Such auction provide a relatively simple scalable, and easily solution to resources allocation. The results of the price matching process easily provide in these auction.

It is a challenge for researchers to improve the system with multiple users and providers. Design an effective algorithm that is very attractive to users and providers. Security facilities are also required to authorize users, sellers and auctioneers.

6. REFERENCES

- [1] Hongkun Zhang, Xinmin Liu, "Reverse Auction-Based Services Optimization in Cloud Computing Environments", Security and Communication Networks, vol. 2021, Article ID 6666628, 10 pages, 2021. <https://doi.org/10.1155/2021/6666628>.
- [2] Jixian Zhang a , Ning Xie a , Xuejie Zhang a , Weidong Li b, * An online auction mechanism for cloud computing resource allocation and pricing based on user evaluation and cost . Available online 3 July 2018
- [3] Seyyedali Hosseinalipour and Huaiyu Dai. Options-based Sequential Auctions for Dynamic Cloud Resource Allocation. Department of Electrical and Computer Engineering North Carolina State University Email: {shossei3,hdai}@ncsu.edu.
- [4] Xiaohong Wu 1,2,* ID and Jingti Han 1,3. Auction-Based Cloud Service Pricing and Penalty with Availability on Demand. Institute of Fintech, Shanghai University of Finance and Economics, Shanghai 200433, China * Correspondence: xhwu@zjhu.edu.cn. Published: 11 April 2018
- [5] Runhao Lu1, Yuning Liang1, Qing Ling1, Changle Li2 and Weigang Wu1*. Double auction and profit maximization mechanism for jobs with heterogeneous durations in cloud federations (2021) 10:34 <https://doi.org/10.1186/s13677-021-00249-3>.
- [6] Reza Dibaj, S.M., Miri, A. & Mostafavi, S. A cloud priority-based dynamic online double auction mechanism (PB-DODAM). J Cloud Comp 9, 64 (2020). <https://doi.org/10.1186/s13677-020-00213-7>.
- [7] Diana Gudu, Gabriel Zachmann, "Approximate Algorithms for Double Combinatorial Auctions for Resource Allocation in Clouds: An Empirical Comparison" In Proceedings of the 10th International Conference on Agents and Artificial Intelligence (ICAART 2018) - Volume 1, pages 58-69.
- [8] Asif Iqbal Middya, Benay Kumar Ray and Sarbani Roy, Senior Member, I. Auction based Resource Allocation Mechanism in Federated Cloud Environment: TARA. DOI 10.1109/TSC.2019.2952772, IEEE Transactions on Services Computing