

A TWO-STAGE AUCTION MECHANISM FOR CLOUD RESOURCE ALLOCATION

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ABSTRACT

The contemporary writing on cloud asset distribution is generally centered on considering the associations among clients and cloud directors. All things considered, the ongoing development in the clients' requests and the rise of private cloud suppliers (CPs) lure the cloud chiefs to lease additional assets from the CPs in order to deal with their accumulated errands and pull in more clients. This additionally renders the cooperation's between the cloud directors and the CPs a significant issue to examine. In this paper, we examine the two collaborations through a two-arrange sell off component. For the collaborations among clients and cloud supervisors, we embrace the alternatives based consecutive closeouts to plan the cloud asset portion worldview. When contrasted with existing works, our system can deal with clients with heterogeneous requests, give honesty as the overwhelming methodology, appreciate a straightforward victor assurance strategy, and block the postponed passage issue. We likewise give the presentation examination of the OBSAs, which is among the first in writing. Concerning collaborations between cloud directors and CPs, we propose two parallel markets for asset gathering. We catch the narrow-mindedness of the CPs by their offered costs. We direct an extensive examination of the two markets and distinguish the offering methodologies of the cloud directors.

Keyword : - OBSA Techniques , Data Integration Techniques

1. INTRODUCTION:

Present day society depends basically on compelling getting ready of the gigantic proportion of data assembled from a combination of sources, for instance, remote sensors and quantifiable studies, for which conveyed figuring is a trademark organize. Diverse cloud-based organizations have been offered, including Microsoft Azure , Google Cloud, and Amazon EC2 , while various associations are needing to join this profitable market. The progressing improvement in the customers' solicitations has energized the plausibility of benefit sharing in cloud frameworks , where cloud owners can unexpectedly rent spare resources from one another to give better organizations to the customers. It is anticipated that in the nearby future, tremendous associations may order the entire cloud preparing market by renting cloud resources from more diminutive or then again exclusive organizations. Everything considered, one of the most fitting probability for showing the looking at cloud resource dispersion is the deal part due to its ease also, flexibility, which is a better than average arrange with the sales and response perspective in cloud frameworks. Starting late, Amazon Spot Instances is introduced as an essential deal based framework for resource assignment, where customers can offer for their referenced cloud servers.

1.1 OBJECTIVE:

The two joint efforts through a two-organize auction segment. For the joint efforts among customers and cloud administrators, we grasp the options based back to back closeouts to design the cloud resource partition perspective. At the point when appeared differently in relation to existing works, our framework can manage customers with heterogeneous solicitations, give trustworthiness as the mind-boggling approach, welcome a clear victor affirmation procedure, and square the deferred entry issue. We moreover give the introduction assessment of the OBSAs, which is among the first recorded as a hard copy. Concerning joint efforts between cloud executives and CPs, we propose two parallel markets for resource gathering. Everything considered, one of the most fitting likelihood for demonstrating the taking a gander at cloud asset scattering is the arrangement part because of its simplicity additionally, adaptability, which is a superior than normal orchestrate with the deals and reaction point of view in cloud structures. Beginning late, Amazon Spot Instances is presented as a basic arrangement based structure for asset task, where clients can offer for their referenced cloud servers.

1.2 SCOPE OF THE PROJECT:

Present day society depends basically on compelling getting ready of the gigantic proportion of data assembled from a combination of sources, for instance, remote sensors and quantifiable studies, for which conveyed figuring is a trademark organize. Diverse cloud-based organizations have been offered, including Microsoft Azure , Google Cloud, and Amazon EC2 , while various associations are needing to join this profitable market. The progressing improvement in the customers' solicitations has energized the plausibility of benefit sharing in cloud frameworks , where cloud owners can unexpectedly rent spare resources from one another to give better organizations to the customers. It is anticipated that in the nearby future, tremendous associations may order the entire cloud preparing market by renting cloud resources from more diminutive or then again exclusive organizations. Starting late, Amazon Spot Instances is introduced as an essential deal based framework for resource assignment, where customers can offer for their referenced cloud servers.

2. RELATED WORK:

- I. Paper [1] Opportunistic scheduling algorithms are effective in exploiting channel variations and maximizing system throughput in multirate wireless networks. However, most scheduling algorithms ignore the per-user quality-of-service (QoS) requirements and try to allocate resources (for example, the time slots) among multiple users. This leads to a phenomenon commonly referred to as the *exposure problem*, wherein the algorithms fail to satisfy the minimum slot requirements of the users due to substitutability and complementarity requirements of user slots. To eliminate this exposure problem, we propose a novel scheduling algorithm based on two-phase combinatorial reverse auction, with the primary objective of maximizing the number of satisfied users in the system. We also consider maximizing the system throughput as a secondary objective. In the proposed scheme, multiple users bid for the required number of time slots and the allocations are done to satisfy the two objectives in a sequential manner. We provide an approximate solution to the proposed scheduling problem, which is NP-complete. The proposed algorithm has an approximation ratio of $(1 + \log m)$ with respect to the optimal solution, where m is the number of slots in a schedule cycle.
- II. Paper [2] Opportunistic scheduling algorithms are effective in exploiting channel variations and maximizing system throughput in multi-rate wireless networks. However, most scheduling algorithms ignore the per-user quality of service (QoS) requirements and try to allocate resources (i.e., the time slots) among multiple users. This leads to a phenomenon commonly referred to as the exposure problem wherein the algorithms fail to satisfy the minimum slot requirements of the users due to substitutability and complementarity requirement of user slots. To

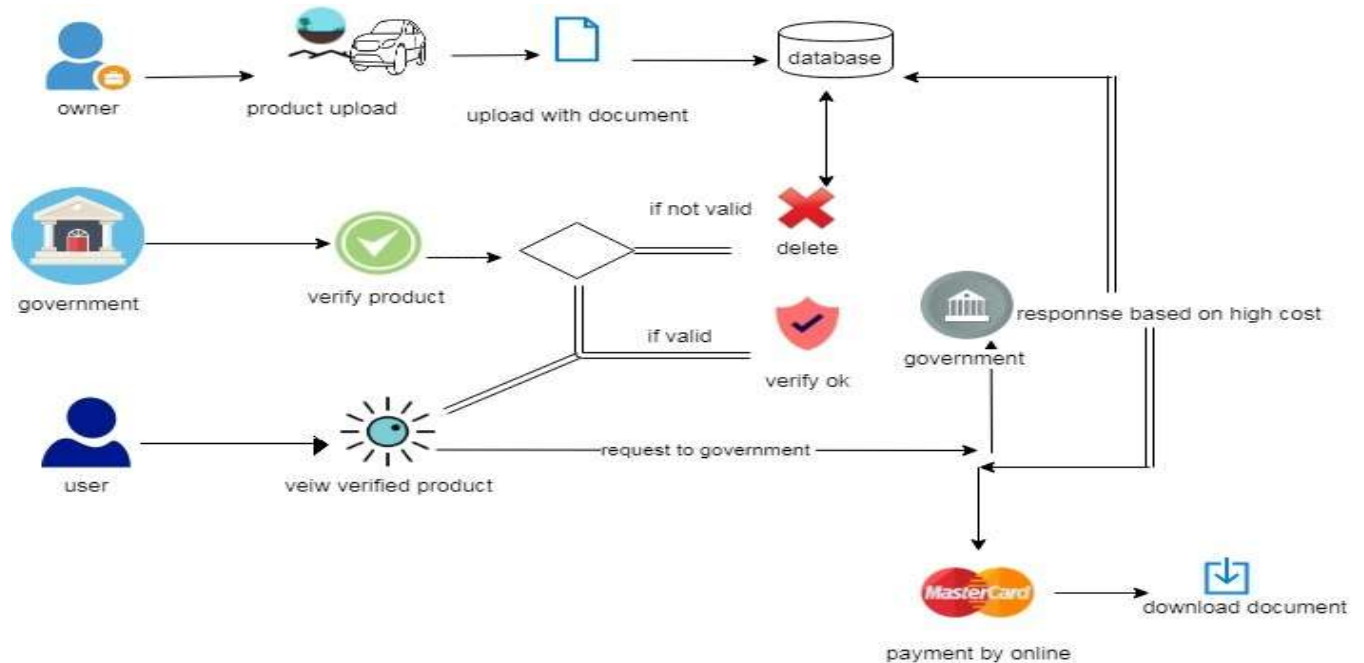
eliminate this exposure problem, we propose a novel scheduling algorithm based on two phase combinatorial reverse auction with the primary objective to maximize the number of satisfied users in the system. We also consider maximizing the system throughput as a secondary objective. In the proposed scheme, multiple users bid to acquire the required number of time slots, and the allocations are done to satisfy the two objectives in a sequential manner. We provide an approximate solution to the proposed scheduling problem which is a NP-complete problem. We prove that our proposed algorithm is $(1 + \log m)$ times the optimal solution, where m is the number of slots in a schedule cycle.

- III. Paper [3] Dynamic spectrum allocation via auction is an effective solution to spectrum shortage. Combinatorial spectrum auction enables buyers to express diversified preferences towards different combinations of channels. Despite the effort to ensure truthfulness and maximize social welfare, spectrum auction also faces potential security risks. The leakage of sensitive information such as true valuation and location of bidders may incur severe economic damage. However, there is a lack of works that can provide sufficient protection against such security risks in combinatorial spectrum auction. In this paper, we propose ARMOR, to enable combinatorial auction for heterogeneous spectrum with privacy, which can preserve bidders' privacy while guaranteeing the economic-robustness of the combinatorial auction. We leverage the cryptographic methods, including homomorphic encryption, order-preserving encryption, and garbled circuits, to shield the bid and location information of buyers from the auctioneer. We design a novel location protection algorithm, which allows the auctioneer to exploit spectrum reuse opportunities without knowing the exact locations of buyers. Furthermore, we propose a verifiable payment scheme based on digital signature to prevent the auctioneer from forging the payment. The extensive experiments confirm that ARMOR maintains the good performance of the combinatorial spectrum auction.
- IV. Paper [4] In this paper we address the problem of representing bids for combinatorial auctions and employing those structures for Winner Determination. We propose a graph-based language employing generalized network flows to represent the bids. The interpretation of winner determination is then seen as an aggregation of individual preferences. We motivate the language from representational, conciseness and manipulation points of view.
- V. Paper [5] Cooperative communication is a new fashion to alleviate the low channel utilization and signal fading problems in today's wireless network. The success of cooperative communication heavily depends on the efficient assignment of relay resource. Auction theory has been applied successfully to allocate limited resources in wireless network for decades. However, most of the existing auction mechanisms restricted buyers to use simple bidding language, which greatly lowers the social welfare and relay assignment efficiency. In this paper, we model the relay assignment as a combinatorial auction with flexible bidding language and propose SAIL, which is a Strategy-proof and Approximately efficient combinatorial auction for relay assignment in cooperative communication. Furthermore, the evaluation results to show that SAIL achieves a good system performance in terms of social welfare, buyer satisfaction and relay utilization.

3. ARCHITECTURE DIAGRAM:

System architecture is the conceptual model that defines the structure, behavior, and more views of a system. An architecture description is a formal description and representation of a system,

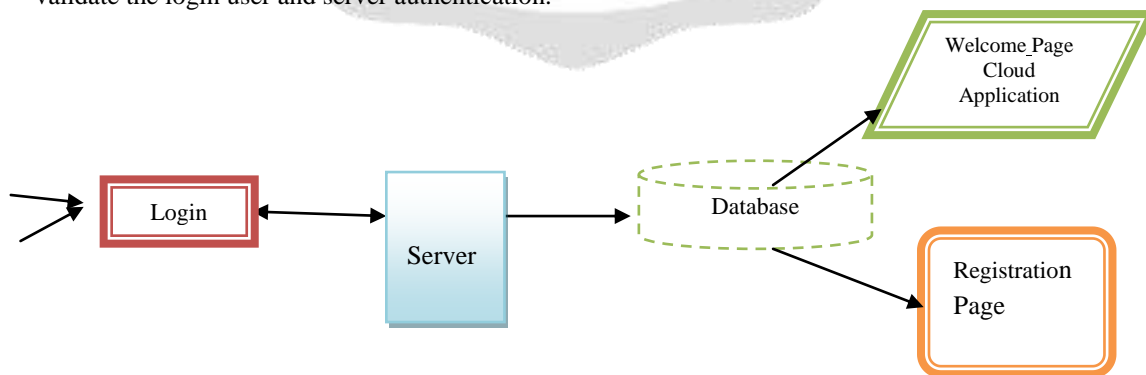
organized in a way that supports reasoning about the structures and behaviors of the system. A system architecture can consist of system components and the sub-systems developed, that will work together to implement the overall system. There have been efforts to formalize languages to describe system architecture; collectively these are called architecture description languages (ADL).



4.IMPLEMENTATION:

4.1 USER INTERFACE DESIGN:

This is the first module of our project. The important role for the user is to move login window to user window. This module has created for the security purpose. In this login page we have to enter login user id and password. It will check username and password is match or not (valid user id and valid password). If we enter any invalid username or password we can't enter into login window to user window it will shows error message. So we are preventing from unauthorized user entering into the login window to user window. It will provide a good security for our project. So server contain user id and password server also check the authentication of the user. It well improves the security and preventing from unauthorized user enters into the network. In our project we are using JSP for creating design. Here we validate the login user and server authentication.



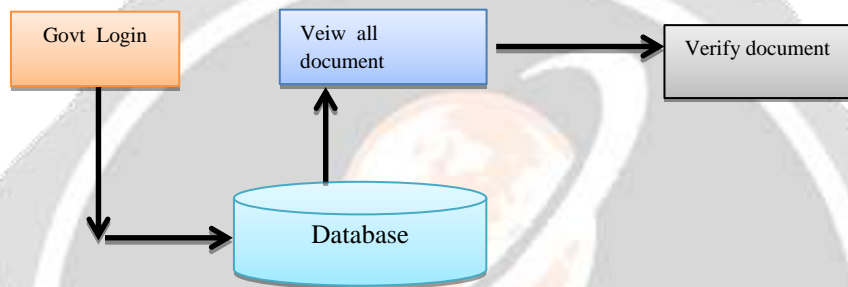
4.2 OWNER UPLOAD DETAILS:

Here, Owner will register his details and login into the page, after logging in he will upload details about the product which he wants to sale, along with he uploads product document and overall cost of the product. Likewise several owners will enter their details here.



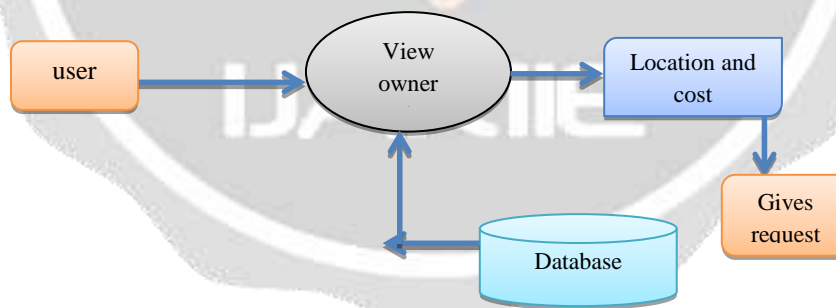
4.3 GOVERNMENT LOGIN AND VERIFY:

In this part the uploaded documents will be verified by the government. If the document is correct means it will shows approved message else the document will be rejected. Also they will check the value of the document matched by cost entered by user.



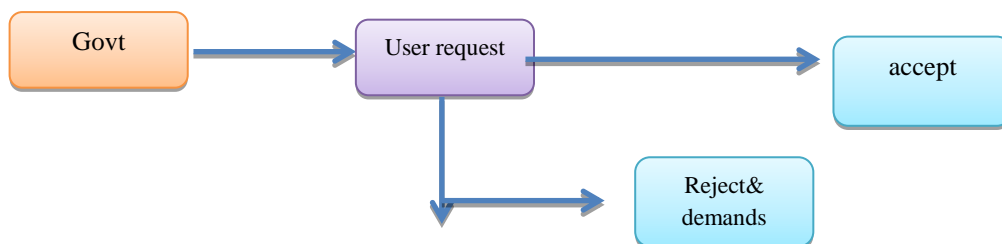
4.4 USER REQUEST PRODUCT BASED ON LOCATION AND COST:

In this module User will register and login using id and password. After user will view products uploaded by owner and he request for the product based on cost and location or area. Also there will be payment session after getting response from the user.



4.5 GOVERNMENT RESPONSE:

In this part govt will give response for the product if he satisfies the cost and location given by the user. If he is satisfying the users cost he will rejects the request given by user. If he response the user requests, it will reidrects to payment page.



4.6 PAYMENT SESSION FROM USER.

After getting response user will pay a total amount entered by owner.
Finally he gets the approved document from the government side.



5. CONCLUSION AND FUTURE ENHANCEMENT:

we have proposed a comprehensive two stage framework to describe resource allocation and gathering in modern cloud networks. The first stage describes the interactions between the PAs and the CCN managers. For this stage, OBSAs along with their theoretical analysis are proposed, which enjoy a simple winner determination process and provide the truthfulness property. The second stage models the interactions between the CCN managers and the CPs. For this stage, a theoretical framework is developed to model the bidding behavior of the CCN managers.

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