

# Cost-Effective Approach for Vivacious Resource Allocation in Cloud Environment

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**Abstract:** Market-based resource management strategies have been brought out to implement resource allocation in cloud computing environment. Many consumers depend on cloud providers to provide computing service. The cost-effective approach becomes vital influential factor for allocation purpose. To provide the cost effective resource allocation management various double auction protocol are devised. Through that protocol multiple used and multiple providers can access the resource in honest and secure manner. To implement this Back Propagation Neural Network mechanism and Paddy Field Algorithm are implemented in the proposed system. Simulation results too prove that this system handles multiple consumers along with the security aspects.

## I. INTRODUCTION CLOUD OVERVIEW

It is an interface between hardware (computer, other devices), networks, storage and services that delivers computing as a service. The cloud users are as follows.

1. End user
2. Business management user
3. Cloud service provider

## II. SCOPE OF THE PROJECT

- a. It deals with resource allocation challenges.
- b. Double auction protocol is enabled to handle resources with all at the same time.
- c. To exclude the dishonest person from the available market itself a new reputation scheme is derived.
- d. Deciding the winner with the given protocol.

## III. LITERATURE SURVEY

### Definition and Trends

Cloud definition can be defined in various methods by researchers and the following is a way to define.

### Definition

"A Cloud is a type of virtualized computers that are interconnected together to provide services, resources, service level agreements and lots of acceptance and rejections from the consumers and providers."

### Trends

Cloud is considered to be the major combination of clusters and Grids. In next generation view Clouds are going to become the data centres with the concept of hypervisor technologies and virtualization. Resources can be accessed through the on demand manner along with service level management systems.

### Web Search Trends

For the past one year strategy of web search the high search popularity is for "cluster computing", "Grid computing", and "Cloud computing".

From the observations it is proven that cluster computing was popular term during 1990s, Grid computing started to rule from 2000 and recently Cloud computing started gaining popularity. In future the advanced techniques like virtual machine, fuzzy concepts, fog computing will become popular which is related to cloud computing.

### Physical Machines:

In the current scenario more number of servers are used for multiple computing area to provide the resources to the consumers. So it is difficult to measure it in static manner for the best QoS practice. It has to be done dynamical updating for operating the business performances through the concepts of virtual machines. The major importance has to be given for the customers since they are the one who pay for accessing the services.

### 2.2 EXISTING SYSTEM

In the existing system the process happens as rounds. In each round both the provider and consumer will quote their own price by considering the required parameters dually. They will share with the help of an agent at both their ends. Now the transaction problem occurs between those two parties based on the traditional market experiences. To overcome this freezing problem and complexity with the consumers a new model has been devised in the cloud market dynamics through which the participants strategies, negotiation with the provider and consumer, best price freezing solution, mutual transaction mechanism between provider and consumer and finally a best auction process strategies has been evolved. Auction process speed too can be increased with this new mechanism.

#### 2.2.1 DISADVANTAGES:

- Possibilities of having entrusted participants in the cloud management.
- Here the consumer problem will not be fixed with single solution since the provider will get the problems list and provide combinatorial auction.

**Manuscript published on 28 February 2019.**

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### 2.3 PROPOSED SYSTEM

The proposed system is used to deal with the challenges faced in resource allocation challenges and for process automation. A double auction protocol is designed multiple consumers and multiple providers for managing the multiple task handling. A price formation, price matching and price prediction mechanism is devised. A good system has been designed which satisfies both the provider and consumer. It also helps to remove the participant who is not truthful. Based on the price quoted by each of the participant the winner can be determined with the Paddy Field Algorithm. This algorithm can also be improved through the modules of the proposed system mechanisms,

#### ADVANTAGES:

- Heterogeneous demands will be considered by the consumers and only one resource will be provided through an online auction mechanism.
- Cloud resource pricing is done with truthful and computationally efficient auction.
- Suppressing the dishonest participants through confidential mechanism.
- Cost for execution problem is highly reduced.

### IV. MODULES DESCRIPTION CONSUMER/PROVIDER

#### Consumer:

1. Consumer sends tender details to agent.
2. Consumer views tender details.
3. Consumer quotes tender price.
4. Services are provided to consumer.
5. Amount is paid to provider.

#### Provider:

1. Tender is initialized by provider.
2. Tender is announced to agent.
3. Winner details are found in tender information.
4. Service is provided.

#### *Tender is initialized by provider:*

The tender will be designed by the provider and mainly it notifies the agent to sell. Finally provider will send the tender to the consumer.

#### *Tender is announced to agent:*

The provider will initialise the tender and transfer all the detailed information about the same to the agents.

#### *Winner details are found in tender information:*

The admin will decide the winner and the provider will come to know the winner through the details given by the provider agent.

#### *Service is provided:*

The winner will enjoy the services which is provided by the provider.

### 4.2 AGENT

#### 4.2.1 Consumer agent:

1. Views the tender details.

2. Sends notification to consumer regarding tender details.
3. Views consumer details.
4. Tender details in which consumer quotes price are sent to admin.
5. Winning details.

#### 4.2.2 Provider agent:

1. Views the tender details.
2. Announcing the tender.
3. Views the provider details.
4. Announce/get winner details from admin.
5. Provider agent sends all the above details to admin.

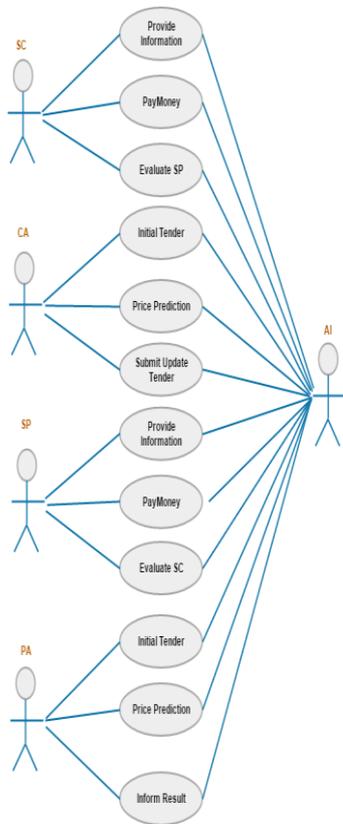
### 4.3 ADMIN

1. Views and maintains the Consumer/provider details.
2. Views and maintains the consumer/provider agent details.
3. Views/maintains the tender details.
4. Announces the tender details to consumer agent.
5. Price Matching is done.
6. Announces the winner.

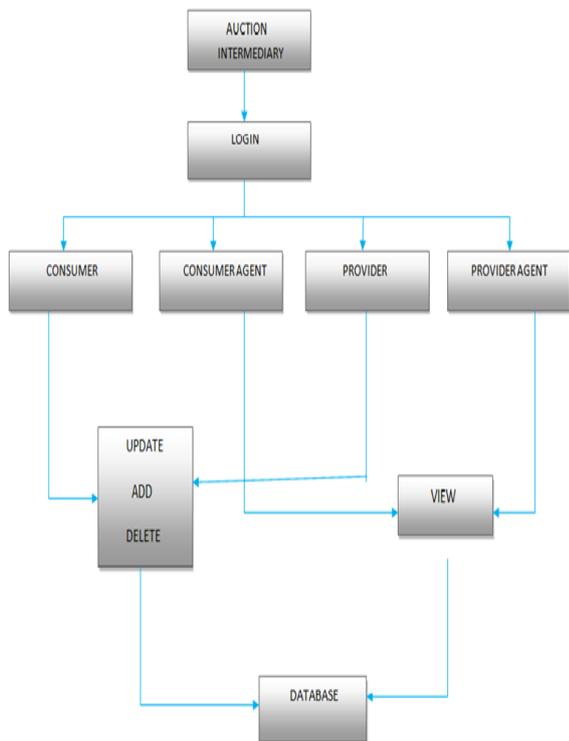
### V. IMPLEMENTATION

Implementation is the important stage of the project since it produces a design through the work carried out for satisfying the new system which provides confidence to the customer that it will be an effective system to be configured. So it is considered to be an effective and critical stage which is to be taken keen work out.

### VI. RESULTS & DISCUSSIONS



**6.2 DATA FLOW DIAGRAM**



The auction process starts from login which is given by the intermediate. Through the login process consumer, consumer agent, provider and provider agent will be communicating with each other the provider and consumer

can modify the database content whereas the agents can only view the contents.

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