**Server Configuration for Profit Optimizations In Cloud Computing**

**ABSTRACT**:

In this paper, we try to design a service mechanism for profit optimizations of both a cloud provider and its multiple users. We consider the problem from a game theoretic perspective and characterize the relationship between the cloud provider and its multiple users as a Stackelberg game, in which the strategies of all users are subject to that of the cloud provider. The cloud provider tries to select and provision appropriate servers and configure a proper request allocation strategy to reduce energy cost while satisfying its cloud users at the same time. We approximate its servers selection space by adding a controlling parameter and configure an optimal request allocation strategy. For each user, we design a utility function which combines the net profit with time efficiency and try to maximize its value under the strategy of the cloud provider. We formulate the competitions among all users as a generalized Nash equilibrium problem (GNEP). We solve the problem by employing variational inequality (VI) theory and prove that there exists a generalized Nash equilibrium solution set for the formulated GNEP. Finally, we propose an iterative algorithm (IA), which characterizes the whole process of our proposed service mechanism. We conduct some numerical calculations to verify our theoretical analyses. The experimental results show that our IA algorithm can benefit both of a cloud provider and its multiple users by configuring proper strategies.

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| **EXSISTING SYSTEM** | **PROPOSED SYSTEM** |
| * To our knowledge, hardly any previous works investigate multiple users*′*profit optimizations, let alone optimizing the profits of a cloud provider and its users at the same time. * The scheduling algorithm for sporadic tasks. The authors try to reduce energy consumption by using dynamic voltage frequency scaling (DVFS) technique. * In existing system, based on DVFS technique and the concept of slack sharing among processors, the authors also proposed two novel energy-aware scheduling algorithms. | * In this paper, we try to design a new service mechanism for profit optimizations of both a cloud provider and its multiple users. We consider the problem from a game theoretic perspective and characterize the relationship between the cloud provider and its users as a Stackelberg game, in which the strategies of all users are subject to that of the cloud provider. * In our mechanism, the cloud provider tries to select appropriate servers and configure a proper request allocation strategy to reduce energy cost while satisfying its users at the same time. |
| **EXISTING ALGORITHM**  Nash equilibrium problem (GNEP) | **PROPOSED ALGORITHM: -**  Iterative Algorithm (IA) |
| **EXISTINGALGORITHM Description:**  A generalized Nash equilibrium (GNE) of at the generalized Nash equilibrium, each user cannot further decrease its disutility by choosing a different strategy while the strategies of other users are fixed. The equilibrium strategy profile can be found when each user′s strategy is the best response to the strategies of  other users. | **PROPOSED ALGORITHM Description:**  We describe operational process of the proposed iterative algorithm. At the beginning, the cloud provider approximates its sever selection space (QL) and obtains the approximated one (Q(ε) it initializes the allocation strategy (p ~ S) in different time slot h (h ∈ H). Under this server’s subset and allocation strategy, all of the users calculate the proper request strategies. The cloud provider reconfigures the allocation strategy such that the average response time over all users is minimized. Each of the user in the current set (Sc) calculates its utility, if the value is  less than its reserved value (vi), then he/she refuses to  use the cloud service. This process is terminated when  all of the users who choose the cloud service and their  corresponding request strategies are kept unchanged.  The algorithm terminates until it selects the optimal  servers subset from the approximated subset solution  space. |
| **DRAWBACKS: -**   * Since multiple users will try to access the data application performance depends upon the user’s data requests. * The existing system unable to avoid the server energy cost. | **ADVANTAGES: -**   * Cost effectiveness will be provided. * Application performance will be improved. * In this work, we first try to optimize multiple users*′*profits |

**MINIMUMSYSTEM REQUIREMENTS**

**HARDWARE REQUIREMENTS**

* PROCESSOR : DUAL CORE 2 DUO.
* RAM : 2GB DD RAM
* HARD DISK : 250 GB

**SOFTWARE REQUIREMENTS**

* FRONT END : J2EE (JSP, SERVLET)
* BACK END : MY SQL 5.5
* OPERATING SYSTEM : WINDOWS 7
* IDE : ECLIPSE