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EFFICIENT ALGORITHM FOR IMPROVING QUALITY OF SERVICE (QOS) IN CLOUD COMPUTING

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Abstract: As cloud computing becomes increasingly popular, cloud providers compete to offer the same or similar services over the Internet. Quality of service (QoS), which describes how well a service is performed, is an important differentiator among functionally equivalent services. It can help a rm to satisfy and win its customers. As a result, how to assist cloud providers to promote their services and cloud consumers to identify services that meet their QoS requirements becomes an important problem. In this paper, we argue for QoS-based cloud service recommendation, and propose a collaborative ltering approach using the Spearman coef cient to recommend cloud services. The approach is used to predict both QoS ratings and rankings for cloud services. To evaluate the effectiveness of the approach, we conduct extensive simulations. Results show that the approach can achieve more reliable rankings, yet less accurate ratings, than a collaborative ltering approach using the Pearson coefficient.

I. INTRODUCTION

Cloud computing refers to a large pool of virtualized resources that can be dynamically recongured to provide elastic services over the Internet [14]. It has the potential to increase business agility, improve efficiencies, and reduce costs. As cloud computing becomes increasingly popular, cloud providers, including leading IT companies like Amazon, Google, and Microsoft, compete to offer the same or similar services over the Internet.

As an example, Amazon Simple Storage Service (Amazon S3) offers durable and massively scalable object storage. Google Cloud Storage provides durable and highly available object storage. Microsoft Azure Storage provides reliable and economical storage for small and big data. Indeed, there are more than a dozen cloud providers offering online storage services, and the number is still growing.

As the cloud market becomes more open and competitive, quality will be more important. According to the American Society for Quality, quality is ``the totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs.". It can help companies to obtain a competitive advantage by improving business operations, building good reputation, reducing product liability, and competing effectively in the global economy.

In cloud computing, Quality of Service (QoS) is nonfunctional properties of cloud

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services, which describe how well a service is performed, such as availability, reliability, responsiveness, and security. Indeed, QoS is an important differentiator among functionally equivalent services. It can help a _rm to satisfy and win its customers. As a result, how to assist cloud providers to promote their services and cloud consumers to identify services that meet their QoS requirements becomes an important problem.

Recommender systems, which have been developed to alleviate the information overload problem, can help users to _nd useful information and products. They can generate suggestions that match users' interests and preferences.Recommender systems are personalized information ltering techniques, which are employed to either predict whether a user will like an item (prediction problem) or _nd a set of items that will be of interest to a user (top-*N* recommendation problem).

Collaborative Filtering (CF) is considered as the most successful technique to build recommender systems. CF has been studied in electronic commerce for many years. It recommends items to users based on the opinions of a set of users sharing the same or similar interests. It can consider the quality of items, and can recommend serendipitous items to users, i.e., really good items that are not obvious to users [1].

2. EXISTING SYSTEM

In the Infrastructure as a Service (IaaS) paradigm of cloud computing, computational resources are available for rent. Although it offers a cost efficient solution to virtual network requirements, low trust on the rented computational resources prevents users from using it. To reduce the cost, computational resources are shared, i.e., there exists multi-tenancy. As the communication channels and other computational resources are shared, it creates security and privacy issues. A user may not identify a trustworthy co-tenant as the users are anonymous. The user depends on the Cloud Provider (CP) to assign trustworthy co-tenants. But, it is in the CP's interest that it gets maximum utilization of its resources. Hence, it allows maximum co-tenancy irrespective of the behaviours of users. In this paper, we propose a robust reputation management mechanism that encourages the CPs in a federated cloud to differentiate between good and malicious users and assign resources in such a way that they do not share resources. We show the correctness and the efficiency of the proposed reputation management system using analytical and experimental analysis.

3. PROPOSED SYSTEM:

As the cloud market becomes more open and competitive, quality will be more important. According to the AmericanSociety for Quality, quality is ``the totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs. It can help companies to obtain a competitive advantage by improving business operations, building good reputation, reducing product liability, and competing effectively in the global economy. In cloud computing, Quality of Service (QoS) is non-functional properties of cloud services, which describe how well a service is performed, such as availability, reliability,responsiveness, and security. Indeed, QoS is an impor-tant differentiator

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4. Quality Of Service (QoS):

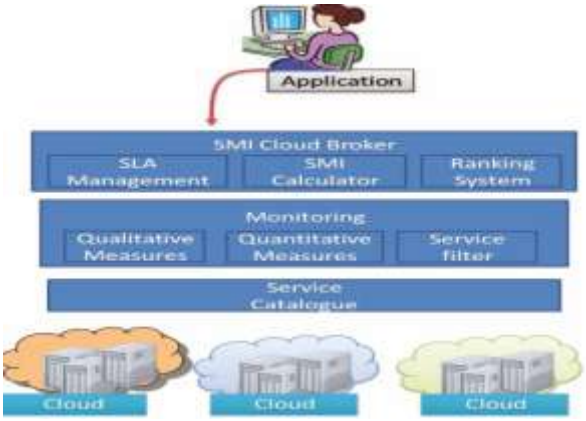

Fig 1 Architecture Diagram

In cloud computing, Quality of Service (QoS) is non- functional properties of cloud services, which describe how well a service is performed, such as availability, reliability, responsiveness, and security. Indeed, QoS is an important differentiator among functionally equivalent services.It can help a rm to satisfy and win its customers. As a result, how to assist cloud providers to promote their services and cloud consumers to identify services that meet their QoS requirements becomes an important problem.

5. IMPLEMENTATION

spearman approach coffeicent:

we argue for qos based cloud service recommendation and propse collabarative filtering approach using spearman approach coffeicent

pearson cofficient:

- can achive more reliable ranking
- less accurate rating
- collabrative filtering

Collabrative filtering approach:

we studied electronic e-commerece many years

it recommandation to user based on the opinion of set of user sharing ths same and similar interest

achivement of using collabrative filtering approach:

- quality of item
- recommand the best itemto user similarty computation:

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6.SCREEN SHORT

7. CONCLUSION:

As cloud computing becomes popular, the same or similar services are delivered over the Internet. QoS is an important differentiator among functionally equivalent services. In this paper, recommender systems are employed to assist cloud providers to promote their services and cloud consumers to identify services that meet their QoS requirements. Collaborative ltering is the most successful and widely used technique to build recommender systems. In the paper, we argue for QoS-based cloud service recommendation, and propose a ranking-based CF approach using the Spearman coefficient.

We also proposed several enhancement methods for *DAR* to further reduce the payment cost and service latency including

The approach can predict both ratings and rankings for cloud services. To demonstrate the effectiveness of the approach, we conduct extensive simulations, and compare the approach with a rating-based CF approach using the Pearson coefficient. Results show that the CF approach using the Spearman coef cient can achieve more reliable rankings,yet less accurate ratings, than the CF approach using the Pearson coefficient.To achieve better performance, we plan to use a mixed approach in our next step. In other words, we use the CF approach using the Spearman coef cient to predict rankings then use the CF approach using the Pearson coef cient to predict ratings. In this way, the mixed approach could achieve more accurate ratings, while still obtaining reliable rankings. In addition, we plan to compare the CF approach using the Spearman coefficient with other ranking-based approaches in our future work

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