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DESIGN OF BAND WIDTH SCHEDULING FOR BIG DATA TRANSFERS IN HIGH PERFORMANCE NETWORKS

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Abstract:

Cloud computing is becoming popular. Building high-quality cloud applications is a critical research problem. QoS rankings provide valuable information for making optimal cloud service selection from a set of functionally equivalent service candidates. To obtain QoS values, real-world invocations on the service candidates are usually required. To avoid the time consuming and expensive real-world service invocations, this paper proposes a QoS ranking prediction framework for cloud services by taking advantage of the past service usage experiences of other consumers. Our proposed framework requires no additional invocations of cloud services when making QoS ranking prediction. Two personalized QoS ranking prediction approaches are proposed to predict the QoS rankings directly. Comprehensive experiments are conducted employing real-world QoS data, including 300 distributed users and 500 real world web services all over the world. The experimental results show that our approaches outperform other competing approaches.

1. Introduction:

Cloud computing is Internet-based computing, whereby shared configurable resources are provided to computers and other devices as services Strongly promoted by the leading industrial companies cloud computing is quickly becoming popular in recent years. Applications deployed in the cloud environment are typically large scale and complex. With the rising popularity of cloud computing, how to build high-quality cloud applications becomes an urgently required research problem. Similar to traditional component-based systems, cloud applications typically involve multiple cloud components communicating with each other over application programming interfaces, such as through web services to customers.

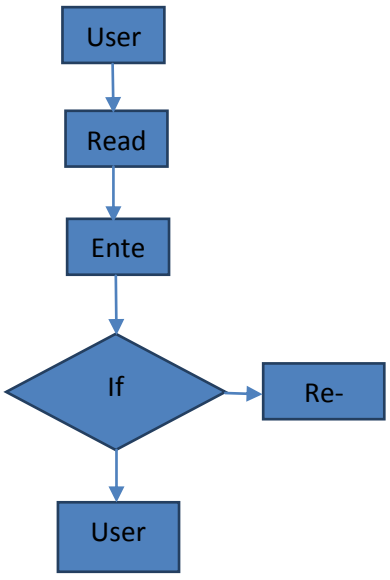


Figure 2: System Flow Diagram

The business process of this cloud application is composed by a number of software components, where each component fulfills a specified functionality. To outsource part of business to other companies, some of these components invoke other cloud services. These cloud services are provided and deployed in the cloud by other companies. These cloud services can also be employed by other cloud applications. Since there are a number of functionally equivalent services in the cloud, optimal service selection becomes important. In this service users refer to cloud applications that use/ invoke the cloud services. In the context of a service invocation, the user-side refers to the cloud applications and server side refers to the cloud services. Nonfunctional performance of cloud services is usually described by quality-of-service.

The reminder of this paper is organized as follows. Section 2, describes the Related Works. Section 3, describes the Proposed Work. Section 4, describes the Experimental Evaluation and Results. Section 5 summarizes the Conclusion and Future Enhancement.

2. Related Works:

Cloud Services are becoming a major system for constructing distributed systems. Service-oriented architecture (SOA) is widely working in electronic business, electronic government, automotive systems, multimedia services, process control, finance, and a lot of other domains. Quality-of-Service (QoS) is usually employed for describing the non-functional characteristics of Cloud services and employed as an important differentiating point of different Cloud services. With the prevalence of Cloud services on the Internet, Cloud service QoS management is becoming more and more important. This paper first study a distributed QoS evaluation technique for Cloud services. In order to prediction the Cloud service QoS as accurate as possible, this paper studies three prediction methods. The first prediction method employs the information of neighbourhoods for making missing value prediction. The second method discusses matrix factorization techniques to enhance the prediction accuracy. The third method predicts the ranking of the target Cloud services instead of QoS values. The predicted Cloud service QoS values can be employed to build fault-tolerant service-oriented systems.

Cloud computing is becoming popular. Building high-quality cloud applications is a critical research problem. QoS rankings provide valuable information for making optimal cloud service selection from a set of functionally equivalent service candidates. To obtain QoS values, real-world invocations on the service candidates are usually required. To avoid the time consuming and expensive real-world service invocations, this paper surveys different QoS ranking prediction.

Methods like neighborhood based approach ADF, Local optimization for ranking of cloud services by taking advantage of the past service usage experiences of other consumers. Finally summarizes various approaches for ranking of services in the cloud that is used for optimal service selection.

The increasing tendency of network service users to use cloud computing encourages web service vendors to supply services that have different functional and nonfunctional quality of service features and provide them in a service pool. Based on supply and demand rules and because of the exuberant growth of the services that are offered, cloud service brokers face tough competition against each other in providing quality of service enhancements. Such competition leads to a difficult and complicated process to provide simple service selection and composition in supplying composite services in the cloud, which should be considered an NP-hard problem. Utilizing a systematic literature review, important questions that can be raised about the research

performed in addressing the above-mentioned problem have been extracted and put forth. Then, by dividing the research into four main groups based on the problem-solving approaches and identifying the investigated quality of service parameters, intended objectives, and developing environments, beneficial results and statistics are obtained that can contribute to future research.

Web services are dynamic applications that are published over the network to help in data exchange between systems and other applications. The selection of these web services is an important part of Web service composition. As the number of Web services on the internet increase, the need for finding the exact web service that matches the user's request also increases. So ranking of web services is required in order to find the right web service. Earlier methods of ranking involved using a matrix to rank the web services by using their QoS property. But in many cases it might be tedious to define the QoS values accurately. So a fuzzy logic was proposed to deal with the improper QoS constraints. Many approaches have been proposed both in Quality based and fuzzy based ranking. In this paper we take the advantages of both the methods and propose a new ranking method which is a hybrid of matrix ranking method and QoS based fuzzy ranking method.

3. Proposed Work:

The propose a personalized ranking prediction framework, predict the QoS ranking of a set of cloud services without requiring additional real-world service invocations from the intended users. Our approach takes advantage of the past usage experiences of other users for making personalized ranking prediction for the current user. This approach takes gain of the past usage experiences of other users for building personalized ranking prediction for the Active user. It uses the two algorithms namely cloudrank1 and cloudrank2.This paper overcomes the existing system and it consists of following pros:. It takes the advantage of past usage experiences from other users. Identify the risky problem of personalized QoS ranking for cloud services and proposes a QoS ranking prediction framework to tackle the problem.

Advantages:

- ✓ This paper identifies the critical problem of personalized QoS ranking for cloud services and proposes a QoS ranking prediction framework to address the problem.
- ✓ Extensive real-world experiments are conducted to study the ranking prediction accuracy of our ranking prediction algorithms compared with other competing ranking algorithms
- ✓ The ranking-oriented methods achieve better prediction accuracy.
- ✓ There are using two algorithms are proposed in CloudRank1 and CloudRank2is to make personalized service ranking by taking advantages of the past service usage experiences of similar users

Bandwidth Registration:

The design schemes consist of the n number of clients and cloud servers. In this module the client may collect information and give login detail such as the user name and password to register the cloud services. Before the registration of cloud services to ensure whether the client is an authenticated or not to access cloud server. Ensure the information stored in the cloud is used judiciously by the responsible stakeholders as per the service level agreements. The module with an aim of accountability among users like cloud service providers who store and manage the information after registration completes, the cloud services are provided to individual users.

Indexing the Cloud Services:

After completing the registration the user may communicate to the cloud network. First determining the clients are splitting into the categorized by depending on the quality of cloud services and then the cloud users are indexing to the based on the cloud services. The design with an aim of distributed accountability among key stakeholders like cloud service providers who store and manage the information the design with an aim of distributed accountability among key stakeholders like cloud service providers who store and manage the information Thus the indexing method may using the B-tree based indexing to produce the efficient quality of cloud services to the client.

Grouping User Based on Similarity Measures of Service:

This module will perform the cloud services are grouping by the depending the based on similarity measures. This module starting after completion of indexing process of cloud services. The indexed cloud services are grouping by the similarity measures. This module helps to improve the resource gap, reduce the system idle time and helps to attain high resource usage and provide quality system in cloud environment. To make the most efficient use of the resources, accomplish the optimization for cloud scheduling problems. It is not possible to predict the job execution time in cloud environment

Qos Predict Ranking Services:

The cloud services are predicting the ranking on the based on Quality of services of the cloud services. At first before ensuring the missing QoS values and then performing the Ranking the quality of services. The target of rating-oriented approaches is to predict QoS values as accurate as possible. Rating-oriented approaches try to predict the QoS value as accurate as possible, Prediction 1 is better than Prediction 2, since it has a smaller MAE value which is an evaluation metric for rating-oriented prediction results. The cloud applications are classified on the splitting into the ranking based services.

4. Experimental Analysis and Results:

Implementation is the process of translating design specification in to source code. The primary goal of implementation is to write source code and internal implementation. So that conformance of code to its specification can be easily verified, So that debugging, testing and modification are eased. The source is developed with clarity, simplicity and elegance.

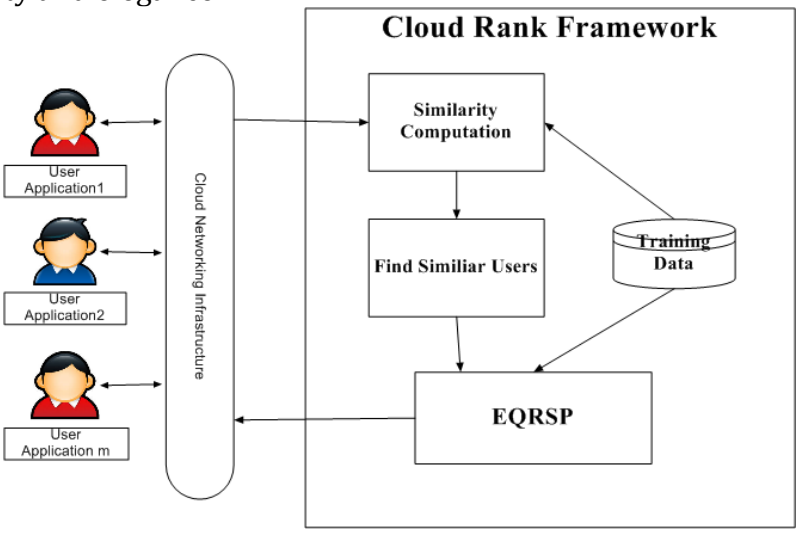
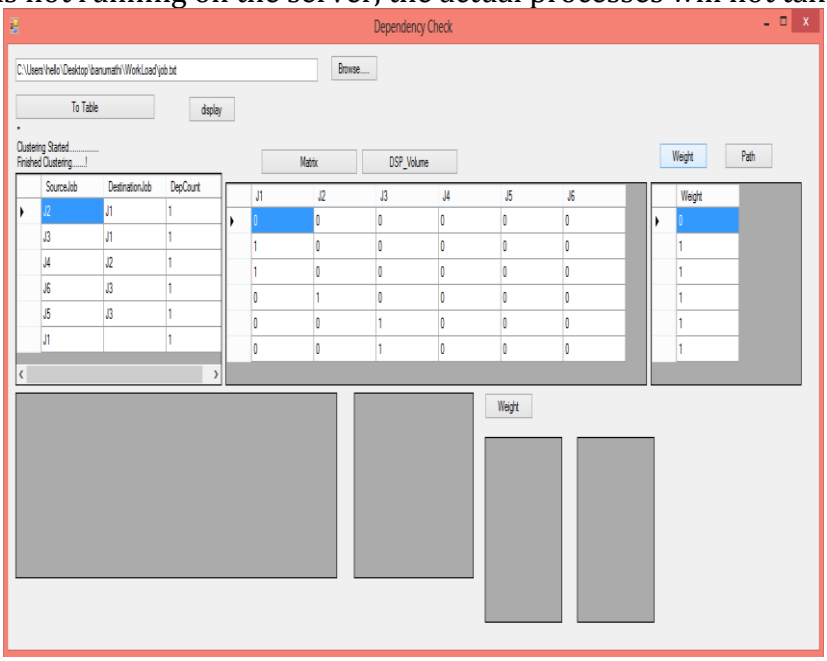
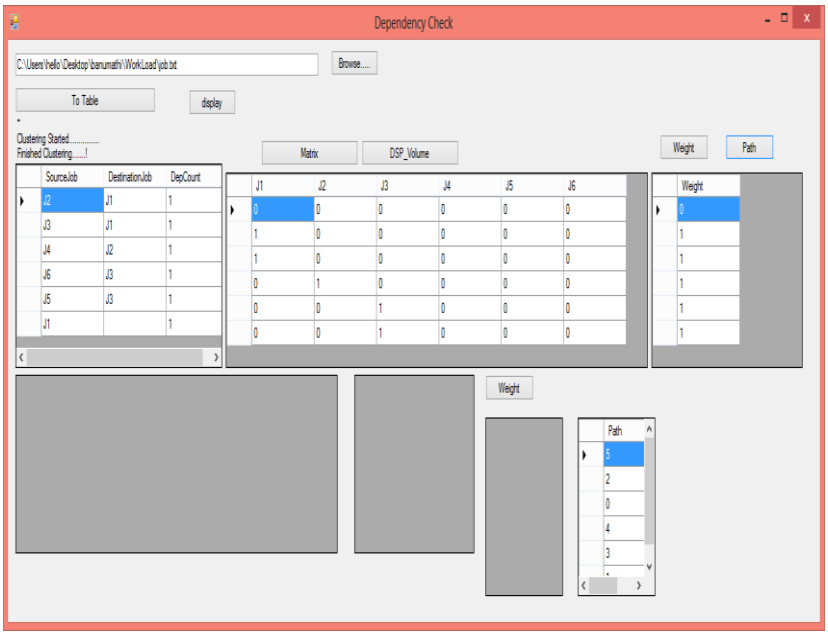


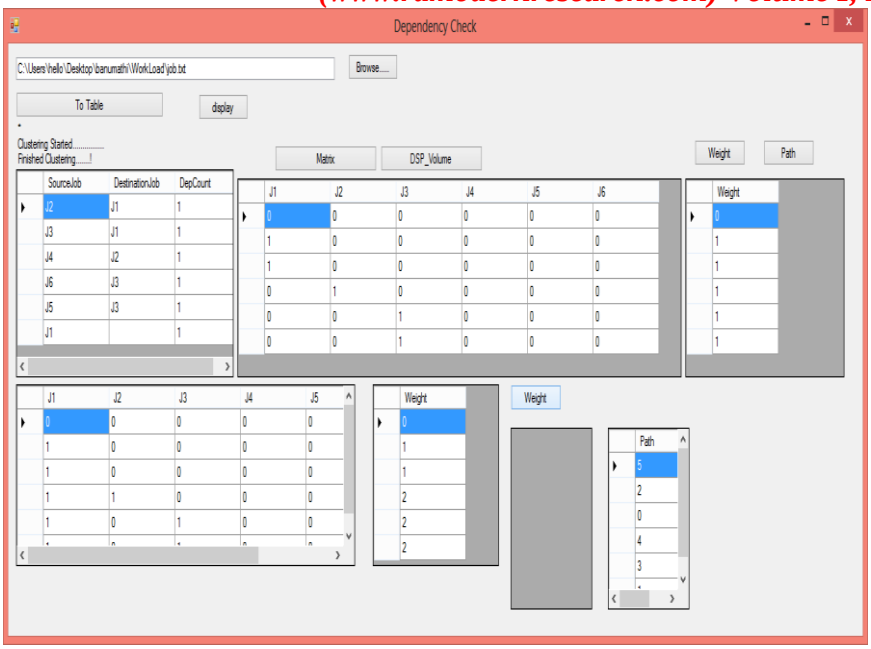
Figure 2: Architecture of Secure cloud data

The coding is done in a modular fashion giving such importance even to the minute detail so, when hardware and storage procedures are changed or now data is added, rewriting of application programs is not necessary. To adapt or perfect use must determine new requirements, redesign generate code and test exiting software/hardware. Traditionally such task when they are applied to an existing program has been called maintenance.

Implementation of software refers to the final installation of the package in its real environment, to the satisfaction of the intended users and the operation of the system. The people are not sure that the software is meant to make their job easier. The active user must be aware of the benefits of using the system. Their confidence in the software built up. Proper guidance is impaired to the user so that he is comfortable in using the application. Before going ahead and viewing the system, the user must know that for viewing the result, the server program should be running in the server. If the server object is not running on the server, the actual processes will not take place.







5. Conclusion and Future Enhancement:

We propose a personalized QoS ranking prediction framework for cloud services, which requires no additional service invocations when making QoS ranking. By taking advantage of the past usage experiences of other users, our ranking approach identifies and aggregates the preferences between pairs of services to produce a ranking of services. We propose two ranking prediction algorithms for computing the service ranking based on the cloud application designer's preferences. Experimental results show that our approaches outperform existing rating-based approaches and the traditional greedy method.

When a user has multiple invocations of a cloud service at different time, we will explore time-aware QoS ranking prediction approaches for cloud services by employing information of service users, cloud services, and time. As our current approaches only rank different QoS properties independently, we will conduct more investigations on the correlations and combinations of different QoS properties. We will also investigate the combination of rating-based approaches and ranking-based approaches, so that the users can obtain QoS ranking prediction as well as detailed QoS value prediction. Moreover, we will study how to detect and exclude malicious QoS values provided by users.

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