Cloud Computing Diverse Advances in Mobile Cloud Computing

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Abstract— There are a number of research issues, challenges, and needs for mobile data services in mobile cloud computing. Advances in electronic technologies have provided a foundation for mobile devices. A secure algorithm that uses international mobile subscriber identity as user identification with encryption algorithms is presented to secure the location data. Mobile devices collect personal data. Sensor based data consists of valuable information from users. Mobile access introduces many problems such as duplication to make data easily accessible, access to desired data, security of data. Employing asynchronous communications using Ajax enables light background mobile cloud communications so that users can continue interacting with their devices. This requires the support of mobile data services. Multi-item ACID transaction support. Though weak consistency is acceptable in some applications, many applications, for example, social networking and credit card transactions.

Keywords: Mobile Cloud Computing, RMCC Depth Sort, CMA

I. INTRODUCTION

Mobile devices now a days to perform Resource-intensive Mobile Applications. Mobile Cloud Computing aims to augment computational capabilities of mobile devices and conserve their resources. In this paper, a lightweight Resource-oriented MCC architecture is proposed. RMCC is a RESTful cross-platform architecture functional on major mobile OSs. We will consider major cloud vendors, such as Microsoft Windows Azure, Amazon created for smart phones in various domains. Cloud-based Mobile Augmentation (CMA) is the model to increase, enhance, and optimize computing capabilities. The mathematical modeling and benchmarking unveil that distance has negligible impact on latency, whereas intermediate hops increment and communication overhead significantly degrade application performance and complicate energy and time estimation in CMA system1. Availability of data at any time and any place, and ease in maintenance. Mobile devices collect personal data from sensors within a shorter period of time. Sensor based data consists of valuable information from users. But, mobile access introduces many problems such as duplication to make data easily accessible, access to desired data, security of data. Recent advances in mobile cloud computing, invited a few papers that address such issues. This brings a strong demand on new mobile data service solutions and technologies in the wireless world and implies mobile data service solutions are needed. This paper focuses on mobile data service topic. It analyzes the existing research results on mobile data services. Then cloud based mobile data service solutions. Cloud is the kind of distributed computing which disperses and processes data distributed by virtualized. Cloud provides resources and computing infrastructure on demand basis to cloud consumers. The combination of cloud computing into the mobile computing environment is developed as a capable technology for mobile services. Further need of mobile cloud computing, real time mobile cloud applications, a comparative analysis on mobile cloud enablement technologies and role of middleware system are discussed. Advances in consumer electronics technologies have provided a momentous foundation for mobile devices, especially smart phones. Human dependency to mobile devices, particularly smart phones is rapidly raising in varied domains such as mobile health . Smart phones are substituting multitude of consumer electronics, particularly digital cameras, Internet browser, and multimedia player. Computational capabilities are constraint by miniature nature and current technological limitations. Computational augmentation efforts aim to offload the resource-intensive computational code of the mobile applications as the scarcest resource of mobile devices. Mobile Cloud Computing has gained momentous ground alleviate resource deficiencies of mobile devices by leveraging cloud resources towards Cloud-based Mobile Augmentation. CMA is the system leveraging cloud computing technologies and principles to increase, enhance, and optimize processing power of mobile devices. CMA outsourcing resource-intensive mobile applications with least application execution time and optimized power consumption. Researchers utilize distant cloud resources to augment mobile devices. Distant giant clouds feature rich resources and high scalability located far away from mobile nodes that originates long WAN latency and degrades crispness of application response time. In CMA efforts, the ratio of computational energy saved via augmentation against the energy wasted by communication overhead is imperative and requires thorough analysis prior performing augmentation. This article employs modelling and benchmarking on real devices to investigate the impacts of mobile-cloud distance. Mobile cloud may cause serious security and privacy problems, addresses the secrecy dimming capacity of secure transmission over visible light communication channels and could serve as a guideline for practical mobile networks. A Variable Impacts Measurement in Random Forest for Mobile Cloud Computing considers not only data classification but also data interpretation to gain insight into streaming data using game theory technique. In this way, the influence of variables is analyzed and data interpretation in a random forest can be applied in mobile cloud computing environment. There will be a strong demand to have innovative mobile enabled database technologies and mobile data access service to address the current issues, challenges, and emergent need in mobile cloud computing. The advance of mobile computing leads to numerous mobile database technologies, methods, and solutions that are developed to meet the demands of mobile data services in mobile applications.

II. CLOUD DEPTH CLOUD

Limitations on-demand elastic and scalable mobile data services with mobility. Innovative mobile data service

technologies and solutions are needed. The major motivation is for the future trend on mobile data services. Mobile data service on clouds and related mobile cloud database technologies examines the Cloud Computing.

A. MCC:

Mobile Cloud computing is of cloud computing and it brings the services like on demand access, no on-premise software. Mobile Cloud Computing, use network capabilities as well as charging for their use. Mobile Cloud Computing could permit you to reserve network bandwidth.

B. MCC Change:

Mobile world is dependent on two factors. One is Network Stability and second is Handset availability. Cloud Computing seems to be the ideal solution for these mobile phone users. Cloud computing will allow these mobile phone users to have the same amount of data access. Advantage of Cloud Computing allows developers and mobile companies to start targeting a larger market which in turn will give Cloud Computing more thrust.

III. RMCC DEPTH SORT

Resource-oriented Mobile Cloud Computing is to leverage computing capabilities.

A. Service-Oriented:

It inherits cross-platform and lightweight characteristics coupling of services that significantly mitigates complexity and overhead, enhances elasticity of mobile applications, and realizes platform-independence. Representational State Transfer mitigates communication cost compared to SOAP (Simple Object Access Protocol) used in majority of augmentation approaches.

B. Responsibilities:

Service providers have both roles of service development and provisioning. These tasks demands skills that majority of owners lack. To mitigate the problem and enhance RMCC adaptability, feasibility, and complexity, we separate the responsibilities and introduce 'service developer' and 'mobile service provider' roles. The former is responsible to build, describe, and maintain the service, while the latter hosts and executes the service. Thus, RMCC can easily be used by individual owners without IT skills prerequisite. Developers build services and negotiate with TSG to describe and publish them.

C. Time invariant:

Employing asynchronous communications using Ajax enables light background mobile cloud communications so that users can continue interacting with their devices when remote execution is taking place on enhancing user experience and improving RMCC adoption. Aims to alleviate the latency and heterogeneity overhead in mobile augmentation.

IV. SERVICE BASED

There are a number of research issues, challenges. Here three different areas explained are privacy and security in mobile data service, multi-tenancy and customization in mobile data service, mobile data transaction management.

A. Mobile Data Service

User privacy and data secrecy is to establish and maintain users' trust in the mobile platform. This leads two security issues in providing cloud-based mobile database solutions:.

1) Mobile User Privacy

A secure algorithm that uses international mobile subscriber identity as user identification integrated with encryption algorithms is presented to secure the location data. Their idea is to use the past location history to predict the possible future locations of a mobile node and cache the data related to that location. Transition graphs were used for prediction of future location from a current location.

2) Data Security

Cloud-based, infrastructure-centric and multi-layered security solution combined with endpoint solutions could serve as the foundation for possible solution of data security. Two additional issues are, Power-efficiency and intelligent partition. Designing security mechanism for mobile cloud databases should focus more on power-efficiency and delay of such security algorithms and how to partition them on cloud and mobile devices. Scalability of security mechanism. The security mechanism is considered to be highly scalable, if the users' increase can be adaptively handled without degradation in database performance.

B. Mobile Data Service Multi-tenancy

This requires the support of multi-tenanted mobile data services. There are three basic challenges and needs to address his demand. How to define and support well-defined tenant-based data service policies and control mechanisms? How to design and develop multi-tenanted mobile data services for next generation mobile data-as-a-service applications and DB technologies? Tenant scalability: Besides, there are many factors that could affect the tenant scalability of mobile cloud databases, for example, multi-tenancy architecture, resource utilization and data access load. Though many scalability metrics have been proposed in distributed computing and high performance computing environment to evaluate the scalability of a system, most of these metrics do not meet the needs of tenant scalability of mobile cloud databases and new metrics involving factors brought in by MCC should be studied.

C. Mobile Data Transaction

Unlike dominance of relational data model in the mobile database, NoSQL data models are more popular in the mobile cloud databases. Two issues on transaction management are listed below. Query on encrypted data. A straightforward way to address data security is to encrypt the database, but an encrypted database cannot be easily queriedMulti-item ACID transaction support. Though weak consistency is acceptable in some applications, many applications, for example, social networking and credit card transactions, would like to use cloud databases, yet find that weak consistency makes life very difficult. There are several ways to support multi-item ACID transactions when using a NoSQL cloud database that provides only single item transactional guarantees. One of

those approaches is to extend single-key transactional support to multi-key or key group.

V. CONCLUSION

Cloud computing is the area where we have to teach in more about the RMCC and bio network which distinguishes the formulae story of mobile computing. Theoretically it is impossible to handle but combined ACID transactions helps to it. Time invariant constraint and time constraint creates a framework between the MCC and CC to future transactions.

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