Cloud Computing for Emerging Mobile Cloud App

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ABSTRACT

The tutorial will begin with an explanation of the concepts behind cloud computing systems, cloud software architecture, the need for mobile cloud computing as an aspect of the app industry to deal with new mobile app design, network apps, app designing tools, and the motivation for migrating apps to cloud computing systems.

The tutorial will review facts, goals and common architectures of mobile cloud computing systems, as well as introduce general mobile cloud services for app developers and marketers. This tutorial will highlight some of the major challenges and costs, and the role of mobile cloud computing architecture in the field of app design, as well as how the app- design industry has an opportunity to migrate to cloud computing systems with low investment. The tutorial will review privacy and security issues. It will describe major mobile cloud vendor services to illustrate how mobile cloud vendors can improve mobile app businesses. We will consider major cloud vendors, such as Microsoft Windows Azure, Amazon AWS and Google Cloud Platform. Finally, the tutorial will survey some of the cutting edge practices in the field, and present some opportunities for future development.

Keywords: Mobile App Design; Mobile Cloud Computing; Cloud Architecture; Mobile Security; Mobile Privacy.

I. INTRODUCTION

- This tutorial aims to provide basic and advanced features of mobile app design in mobile cloud computing system for students (undergraduate and graduate) and researchers who are interested in designing mobile apps, tools, infrastructures from both academia and industry.

- The outcome of this tutorial will provide the understanding of the following concerns: "When do we need mobile cloud computing for designing mobile apps, tools and the infrastructures of online mobile apps?", "How does mobile cloud computing improve the process of app design, tools and marketing?", "What are the pros and cons of mobile cloud computing for designing apps, tools and infrastructures?", "How does mobile cloud computing relate to improvement of app industry?". In addition, this tutorial will discuss opportunities and challenges of deploying an online app by cloud computing. Finally, the tutorial will present some case studies of both sides of mobile cloud vendors and consumers as

best practices in the real world. The tutorial aims to provide a viewpoint of start-up mobile app design companies, if they employ mobile cloud computing for their infrastructure and it will review cost- effective models.

This tutorial is divided into the following sections:

1. **Introduction**
● This section will consider motivations, goals, the definition of cloud computing, cloud architectures, mobile and computer applications, platforms and how these definitions are important for designing mobile apps.

2. **Cloud Computing and General Services**
● This section will consider different services of the mobile cloud computing systems, such as SaaS, PaaS and IaaS. The section will discuss the pros and cons of each service for mobile cloud computing and the requirements for designing an app.

3. **Mobile Cloud Service for Mobile Apps**
● This section will provide a definition and requirements for designing and developing infrastructures for offline and online apps. This section will introduce the implementation of cloud databases and cloud computing for designing apps.

4. **Case Study of Apps in Cloud Computing**
● Cloud Vendors and Implementation Theories. This section will consider different and important case studies of mobile apps design in industry and science fields. Also, this section will consider the key mobile cloud vendors services, such as Microsoft, Google, Amazon, open-source cloud services and open-source tools.

5. **Best Practice of Migration to the Cloud**
● This section aims to review best industrial app practices of the migration from traditional IT infrastructures to mobile cloud computing.

II. LITERATURE SURVEY

Authors focus on role of middleware in mobile cloud computing i.e. Loss of connection, Bandwidth/Latency, Limited Resource (Cloud computing and Personal Mashup Platform).

Authors introduce a concept of Mobile Cloud Operating System. It is a lightweight operating system intended for mobiles, netbooks or table PCs that access Web- based applications and stored data from remote servers. The

objective of mobile cloud operating system is management of cloud resources.

An interesting research work on Mobile Cloud Computing is observed in the research work of Chang, R. et al. (2013).

Authors defines the MCC is an emergent mobile cloud paradigm which leverage Cloud Computing, Mobile Computing and Networking and the goal is to deliver secure mobile cloud resources, service applications in a pay –as –you–use model

Authors also discuss the generations of mobile cloud infrastructure and services, The authors also focused on the usage of SCWS (Smart Card Web Services) rivalry to intensify security of MCC. As per authors, a cloud security solution aspect for mobile cloud ecosystem, SCWS is one of the best approach, however it needs to get enhanced in all mobile devices, tablets, laptops, etc., all together after innovative actions from the operators and service providers. Figure 15 shows the server administration architecture of SCWS.

III. ADVANTAGES OF MOBILE CLOUD:

● Flexibility. Mobile cloud computing allows you to store and retrieve data from anywhere in the world through any device as long as it is connected to the internet. ...
● Multiple Platform Support. ...
● Data Availability at all times. ...
● Cost efficiency. ...
● Data back-up. ...
● Data recovery.

IV. CONCLUSION

● This section will review the opportunities and challenges of designing apps in mobile cloud computing systems. Then for the conclusion, the audience will be encouraged to think about the problems and opportunities for their ideas about apps design in mobile cloud computing.

V. FUTURE SCOPE

Mobile computing has grown immensely in recent years and it is projected   that in the future, mobile computing will control almost all technological activities in the world. This will be projection will be looked at in this research paper. Mobile simply describes a computing device that is not restricted.

VI. APPLICATIONS

1. Infrastructure-as-a-Service (IaaS) and Platform-as-a-Service (PaaS) ...
2. Hybrid cloud and multicloud. ...
3. Test and development. ...
4. Big data analytics. ...
5. Cloud storage. ...
6. Disaster recovery. ...
7. Data backup.

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