Title “Comparative study of cloud computing and mobile cloud computing”

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1. Executive Summary

This report compares cloud computing and mobile cloud computing models. Key findings show mobile cloud computing provides benefits of extending cloud services to mobile devices, enabling new applications, improving processing capabilities, and energy savings. However, additional challenges exist including connectivity, security, and partitioning processing between the device and cloud. Organizations should evaluate integrating mobile and cloud to enhance mobility and productivity. A hybrid approach balancing local and cloud processing is recommended.

2. Introduction

This report provides a comparative analysis between cloud computing and mobile cloud computing (MCC). Cloud computing enables convenient, on-demand network access to a shared pool of computing resources. MCC extends this model to provide cloud services specifically optimized for mobile devices. The aim is to analyze differences between cloud and MCC architectures, benefits of MCC, and key implementation challenges. Evaluating these technologies can guide decisions on integrating mobile applications with cloud resources.

3. Findings

Key differences between cloud computing and MCC:

- MCC accessed via mobile devices and wireless networks vs. broader network access for cloud computing.
- MCC focuses on mobility, productivity and new context-aware applications.
- MCC can leverage cloud processing, storage and services for mobile apps.
- MCC must account for limitations of mobile devices and intermittent connectivity. Benefits of MCC include:
- Extending cloud services to mobile platforms and devices.
- Enabling new context-aware mobile applications.
- Improving computational power for mobile devices via cloud processing.
- Optimizing energy consumption on resource-limited devices. However, MCC also introduces key challenges:
- Reliance on wireless networks leads to variability in quality of service.
- Securely partitioning and managing data across mobile and cloud environments.
- Determining optimal division of processing between cloud and mobile devices.

4. Discussion

MCC provides an opportunity to harness cloud capabilities to enhance mobility and productivity. However, realizing the full potential requires addressing connectivity, security, and computational partitioning challenges. A hybrid approach is recommended, intelligently leveraging both local device processing along with cloud-enabled capabilities. Carefully engineering how applications distribute processing can optimize performance, energy usage and responsiveness.

5. Conclusion

This report compared MCC and cloud computing models. Key MCC benefits identified include extending cloud services to mobile platforms, facilitating context-aware apps, improving computational power, and optimizing energy consumption. Connectivity, security and computational partitioning represent primary challenges. A hybrid strategy can balance tradeoffs and harness the complementary strengths of mobile and cloud platforms.

6. Recommendations

To leverage MCC benefits while managing challenges:

- Implement a hybrid architecture optimizing the mix of local and cloud processing.
- Use context-aware and adaptive techniques to adjust to connectivity quality.
- Employ end-to-end security mechanisms tailored to the mobile environment.
- Partition applications and data to maximize performance and energy efficiency.
- Test MCC deployments with emulators modeling real-world mobile networks.

Successfully integrating cloud services, mobile platforms, and wireless connectivity can enable transformative capabilities for productivity and business processes. A nuanced approach building on lessons from early implementations can allow organizations to strategically progress towards this mobile cloud computing vision.

7. References

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