Task offloading and resource allocation in mobile-edge computing system

ABSTRACT

- Driven by pervasive mobile devices and ubiquitous wireless communication networks, mobile cloud computing emerges as an appealing paradigm to accommodate demands for running power-hungry or computation-intensive applications over resource-constrained mobile devices.
- Cloudlets that move available resources closer to the network edge offer a promising architecture to support real-time applications, such as online gaming and speech recognition. To stimulate service provisioning by cloudlets, it is essential to design an incentive mechanism that charges mobile devices and rewards cloudlets.
- Although auction has been considered as a promising form for desirable properties for the cloudlet scenario. In this paper, incentive, it is challenging to design an auction mechanism that holds certain we propose an incentive-compatible auction mechanism (ICAM)for the resource trading between mobile devices as service users (buyers) and cloudlets as service providers (sellers).
- ICAM can effectively allocate cloudlets to satisfy the service demands of mobile devices and determine the pricing. Both theoretical analysis and numerical results show that ICAM guarantees desired properties with respect to individual rationality, budget balance, truthfulness (incentive compatibility) for both buyers and sellers, and computational efficiency.

EXISTING SYSTEM

- mobile cloud computing emerges as an appealing paradigm to accommodate demands for running power-hungry or computation-intensive applications over resource-constrained mobile devices.
- Cloudlets that move available resources closer to the network edge offer a promising architecture to support real-time applications, such as online gaming and speech recognition.

PROPOSED SYSTEM

- To stimulate service provisioning by cloudlets, it is essential to design an incentive mechanism that charges mobile devices and rewards cloudlets.
- Although auction has been considered as a promising form for incentive, it is challenging to design an auction mechanism that holds certain desirable properties for the cloudlet scenario.
- In this paper, we propose an incentive-compatible auction mechanism (ICAM) for the resource trading between mobile devices as service users (buyers) and cloudlets as service providers (sellers). ICAM can effectively allocate cloudlets to satisfy the service demands of mobile devices and determine the pricing

HARDWARE REQUIREMENTS

- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Floppy Drive : 1.44 Mb.
- Monitor : 15 VGA Colour.
- Mouse : Logitech.
- Ram : 512 Mb.

SOFTWARE REQUIREMENTS

- Operating system : Windows 7 (32-bit)
- Coding Language : C#.NET/ JAVA
- Data Base : SQL SERVER 2005/HEIDISQL

CONCLUSION

- In this paper, we focus on a promising paradigm of MCC with cloudlets that provide resources to nearby mobile devices. Due to spatial locations of cloudlets and their distinct capabilities or hosted resources, the cloudlets offer heterogeneous valuations toward mobile devices.
- The mobile users can acquire services from different cloudlets to maximize their utilities. To improve resource utilization of cloudlets, we have proposed a double auction mechanism ICAM, which coordinates the resource trading between mobile devices as service users (buyers) and cloudlets as service providers (sellers). ICAM can effectively allocate the cloudlets' resources

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