Wireless Communications and Mobile Computing

Special Issue on

Recent Advances in Cloud-Aware Mobile Fog Computing

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Mobile fog computing (MFC) is a paradigm that extends cloud computing (CC) by adding a new layer between the cloud and its end users. With the cloud-aware MFC, the cloud can prepush certain important resources to the fog to bring down the networking latency and release the traffic burden over the links. The end user then is able to perform offline computing on the fog layer so that only the important results need to be delivered to and stored in the cloud. Moreover, the dense geographical deployment characteristic of fog servers enables the system to be aware of the end user's location. Therefore, some location-sensitive applications could be well supported by the fog-aided cloud systems. Note that the cloud-aware MFC is different from the mobile edge computing (MEC), another hot technology for overcoming the shortcomings of CC, since MFC is able to jointly work with the cloud, but MEC is usually defined by the exclusion of CC. Specifically, in MEC, computing applications, data, and services are pushed away from the centralized nodes to the network edge, which enables network edge to run in an isolated environment from the rest of the network and provides access to local resources and data. In contrast, MFC provides not only a system-level horizontal architecture but also a new way to distribute, orchestrate, and manage secure resources across networks rather than just performing computing at network edge.

How to design efficient system architectures, transmission strategies, and protocols for MFC and how to efficiently analyze and evaluate the system performance are very important and essential. These topics have carved out a new area rich in research and innovation potential. This special issue aims to address all these topics and invite contributions from worldwide leading researchers.

Potential topics include but are not limited to the following:

- New architectures and protocols for cloud-aware MFC
- Resources allocation in cloud-aware MFC
- Transmission strategies in cloud-aware MFC
- Mobility management in cloud-aware MFC
- Security, privacy, and trust in cloud-aware MFC
- Time-intensive communications and networking in cloud-aware MFC
- Location-aware applications in cloud-aware MFC
- Planning and deployment strategies for cloud-aware MFC
- Services and applications of cloud-aware MFC
- Prepush strategies in cloud-aware MFC
- Offloading in cloud-aware MFC

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