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IEEE Transactions on Services Computing ---
A Special Issue on
Fog Computing and Services

The emerging Internet of Things (IoT) and rich cloud services have helped create the need for fog computing (also known as edge computing), in which data processing occurs in part at the network edge or anywhere along the cloud-to-endpoint continuum that can best meet user requirements, rather than completely in a relatively small number of massive clouds. Fog computing could address latency concerns, devices' limited processing and storage capabilities and battery life, network bandwidth constraints and costs, and many security and privacy concerns that arise from the emerging IoT.

The new Fog/Edge computing paradigm will enable the resources and services of computing, storage, networking, and control to be distributed closer to the users. Software distributions for various applications can now be hosted by fog servers, e.g., image processing packages for preprocessing images in video surveillance applications. Operating systems and the associated services can be offered through nearby fog servers to reduce round trip latency. Equipment outsourcing, such as storage, hardware, servers, and networking components can also be provisioned through fog servers. Fog computing is an extension to cloud services – it complements the clouds to enable computing where it makes the most sense.

Many new problems arise in enabling fog computing and services, creating a fertile ground for research and innovation. We are prompted to design new algorithmic, mathematical, statistical and computational methods to solve services computing problems on this new architecture. Service creation, development, and management, web services, business processes, and so on, need to be carefully redesigned. In addition, the new fog computing architecture can further provide new solutions to hard problems in the existing architectural framework, e.g., IoT services, security and privacy.

This special issue aims at the latest and novel contributions from industry practitioners and academic researchers in this new and exciting area.

Topics of Interest to the Special Issue include but not limited to:

- fog service architecture;
- discovery and synchronization;
- fog-to-cloud interfaces and protocols;
- data management in a distributed fog computing environment;
- software-defined fog computing;
- mobility and connectivity;
- computing, storage, and services;
- resource management and provision;
- management of fog systems and services;

- security and privacy;
- heterogeneity;
- scalability;
- energy efficiency;
- programmability and programming models;
- accountability/monetization;
- trials and experimental results;
- tools; and
- novel fog/edge applications and services.

Important Dates

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