

Concurrency and Computation: Practice and Experience

SDNWNV2018: Special Issue on

SDN-based Wireless Network Virtualization

With the rapid development of hardware and software technologies, an increasing number of mobile devices, e.g., smartphones and tablets get connected to the Internet, which results in a large proportion of traffic attributed to mobile devices. The mobile users have therefore increasingly high demands to access the Internet with guaranteed Quality-of-Experience (QoE). Software Defined Networking (SDN) is an emerging network architecture where network control is decoupled from the data forwarding, and provides a powerful tool for finer-grained network management. The SDN-based network virtualization techniques have been widely used by Internet Service Providers (ISP) to facilitate the service delivery with such performance guarantees, where network routers and switches are dynamically coordinated under the SDN APIs in wired networks. With the rapid advancement of wireless network technologies, many last mile connections go for wireless. However, the SDN-based wireless network virtualization is not straightforward. Many research challenges still need to be resolved before practical large-scale deployment.

This special issue is devoted to the most recent developments and research outcomes addressing the related theoretical and practical aspects on SDN-based wireless network virtualization, and aims to provide worldwide researchers and practitioners an ideal platform to innovate new solutions targeting at the corresponding key challenges.

Topics

Topics of interest include but are not limited to the following:

- SDN framework for wireless network virtualization
- Wireless virtualization controller design for mobile devices
- Flow management in support of SDN-based network virtualization
- Uplink transmission management over shared wireless medium
- Traffic-awareness in SDN-based wireless network virtualization
- Convergence of heterogeneous wireless networks in SDN-based network virtualization
- Business models of SDN-based wireless network virtualization
- Dynamic resource allocation and scheduling in SDN-based wireless network virtualization

- Performance metrics for SDN-based wireless network virtualization
- Traffic characteristics in SDN-based wireless network virtualization under specific wireless technologies
- Network behavioural modelling for SDN-based wireless network virtualization
- New applications, use cases, and discussion of industry experience in implementing SDN-based wireless network virtualization
- Security, protection, integrity, trust and privacy issues for SDN-based wireless network virtualization

Important Dates

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