**LITERATURE SURVEY**

**1) Green cloud computing: Balancing energy in processing, storage, and transport**

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Network-based cloud computing is rapidly expanding as an alternative to conventional office-based computing. As cloud computing becomes more widespread, the energy consumption of the network and computing resources that underpin the cloud will grow. This is happening at a time when there is increasing attention being paid to the need to manage energy consumption across the entire information and communications technology (ICT) sector. While data center energy use has received much attention recently, there has been less attention paid to the energy consumption of the transmission and switching networks that are key to connecting users to the cloud. In this paper, we present an analysis of energy consumption in cloud computing. The analysis considers both public and private clouds, and includes energy consumption in switching and transmission as well as data processing and data storage. We show that energy consumption in transport and switching can be a significant percentage of total energy consumption in cloud computing. Cloud computing can enable more energy-efficient use of computing power, especially when the computing tasks are of low intensity or infrequent. However, under some circumstances cloud computing can consume more energy than conventional computing where each user performs all computing on their own personal computer (PC).

**2) A survey on communication and data management issues in mobile**

**sensor networks,” Wireless Commun**

**AUTHORS:** C. Zhu, L. Shu, T. Hara, L. Wang, S. Nishio, and L. T. Yang

Wireless sensor networks (WSNs) which is proposed in the late 1990s have received unprecedented attention, because of their exciting potential applications in military, industrial, and civilian areas (e.g., environmental and habitat monitoring). Although WSNs have become more and more prospective in human life with the development of hardware and communication technologies, there are some natural limitations of WSNs (e.g., network connectivity, network lifetime) due to the static network style in WSNs. Moreover, more and more application scenarios require the sensors in WSNs to be mobile rather than static so as to make traditional applications in WSNs become smarter and enable some new applications. All this induce the mobile wireless sensor networks (MWSNs) which can greatly promote the development and application of WSNs. However, to the best of our knowledge, there is not a comprehensive survey about the communication and data management issues in MWSNs. In this paper,focusing on researching the communication issues and data management issues in MWSNs, we discuss different research methods regarding communication and data management in MWSNs and propose some further open research areas in MWSNs

**3) Collaborative location-based sleep scheduling to integrate wireless sensor networks with mobile cloud computing**

**AUTHORS:** C. Zhu, V. C. M. Leung, L. T. Yang, X. Hu, and L. Shu

Mobile cloud computing (MCC) is a very hot research focus of both academia and industries, since it can greatly relieve the hardware limitation of mobile devices as well as create new fascinating mobile services with its tremendous storage and processing ability. Moreover, wireless sensor networks (WSNs) have been attracting attention for about two decades, because of its powerful capability to detect physical or environmental conditions. Motivated by incorporating the advantages of both MCC and WSNs, a lot of schemes which integrate MCC with WSNs have been proposed for exploiting the cloud to share the data gathered by WSNs to mobile users. Particularly, all current integration frameworks utilize the always-on WSNs to collect sensory data for cloud clients, since the data requests of mobile users generally require being responded in real-time. However, these MCC and WSNs integration schemes ignore the following two observations: 1) the specific data cloud clients request usually depends on the current location of cloud clients 2) most sensors are usually equipped with non-rechargeable batteries with limited energy. In this paper, motivated by the above two issues, we present two novel collaborative location-based sleep scheduling (CLSS) schemes for WSNs to integrate with MCC. Based on the location of mobile user, CLSS dynamically determines the awake or asleep status of each sensor node to save energy consumption of WSNs. Theoretical and simulation results show that the proposed scheme can achieve a prolonged network lifetime of WSNs while still satisfy the data requests of mobile users.

**4) Providing desirable data to users when integrating wireless sensor networks with mobile cloud**

**AUTHORS:** C. Zhu, V. C. M. Leung, H. Wang, W. Chen, and X. Liu

Wireless sensor networks (WSNs) receive a lot of attention because of their great potential in monitoring the physical or environmental conditions of military, industry, and civilian. Moreover, mobile cloud computing (MCC) is widely focused, as they can greatly alleviate the hardware limit of mobile devices as well as enable a lot of new mobile applications. All these make the integration of WSNs and MCC a very hot research topic. In this paper, we first observe a context non-awareness issue between mobile user and WSNs, which affects the mobile user obtaining the desirable data when integrating WSNs and MCC. Then focusing on solving the context non-awareness issue to provide desirable data to mobile users, we propose a novel framework for integrating WSNs and MCC. The proposed framework performs data recommendation, data prediction as well as data traffic monitoring in the cloud to obtain the data feature information required by the mobile users and potential status of WSNs. Then these user data feature information and potential WSNs status information are utilized to optimize the deployment of WSNs and check the status of WSNs. This could in turn offer the desirable data to the mobile users. Extensive evaluations also validate the effectiveness of the proposed framework.

**5) Decentralized access control with anonymous authentication of data stored in clouds**

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We propose a new decentralized access control scheme for secure data storage in clouds that supports anonymous authentication. In the proposed scheme, the cloud verifies the authenticity of the series without knowing the user's identity before storing data. Our scheme also has the added feature of access control in which only valid users are able to decrypt the stored information. The scheme prevents replay attacks and supports creation, modification, and reading data stored in the cloud. We also address user revocation. Moreover, our authentication and access control scheme is decentralized and robust, unlike other access control schemes designed for clouds which are centralized. The communication, computation, and storage overheads are comparable to centralized approaches .