Adaptive Power Management Scheme using Many-core for Maximizing Network Topology Lifetime based on Ubiquitous Computing

Boo-Kwang Park, Hyun-Woo Kim, Jong Hyuk Park, Young-Sik Jeong

PII: S1383-7621(17)30087-5
DOI: 10.1016/j.sysarc.2017.02.002
Reference: SYSARC 1420

To appear in: Journal of Systems Architecture

Received date: 11 January 2016
Revised date: 24 November 2016
Accepted date: 14 February 2017


This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.
Adaptive Power Management Scheme using Many-core for Maximizing Network Topology Lifetime based on Ubiquitous Computing

Boo-Kwang Park¹, Hyun-Woo Kim¹, Jong Hyuk Park², Young-Sik Jeong³*

¹Department of Multimedia Engineering, Dongguk University, Seoul, Republic of Korea
²Department of Computer Science and Engineering, Seoul National University of Science and Technology, Seoul, Republic of Korea
³pbg0517@dongguk.edu, hwkim@dongguk.edu, jhpark1@seoultech.ac.kr, ysjeong@dongguk.edu

Abstract

In recent years, the use of ubiquitous computing has increased continuously so that studies on ubiquitous computing have been conducted in various life fields. Ubiquitous computing provides any services anywhere and anytime through networks conveniently to improve the quality of life of users. Ubiquitous computing is constructed via a variety of invisible sensors, networks, and computing environments. For multi-purpose sensors, deployment of the topology and topology lifetime are very important depending on wired or wireless sensors. Uneven energy consumption due to integrated routing sensors according to topology deployment types is a factor that degrades the quality of service (QoS) about user convenience services and lifetime of total topology. As a result, a number of studies on maximization of topology lifetime have been conducted. However, previous studies focused on deployment environments and limited sensors so that they cannot be deployed to real sites. Therefore, this study proposes an adaptive power management scheme (APMS) that manages sensor power adaptively according to deployment environments to maximize topology lifetime. The APMS maximizes topology lifetime by changing routing paths according to lifetime log to manage sensor power. Furthermore, active responses for optimum topology can be achieved by deploying sensors via simulation prior to sensors deployed to the real environments by users.

Keywords: Power Management, Topology Lifetime, Ubiquitous Computing, Cloud Infrastructure, Graphic Processing Unit

* Co-Corresponding author : Young-Sik Jeong(ysjeong@dongguk.edu) and jhpark1@seoultech.ac.kr
دیفایت فوری

امکان دانلود نسخه تمام متن مقالات انگلیسی
امکان دانلود نسخه ترجمه شده مقالات
پذیرش سفارش ترجمه تخصصی
امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
امکان دانلود رایگان ۲ صفحه اول هر مقاله
امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
دانلود فوری مقاله پس از پرداخت آنلاین
پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات