

Abstract: Design and Implementation of Meta-table for Naming Service in Sensor Network Environment

Yon Sik Lee^{1*}, Kwang Woo Nam¹

¹*Department of Computer Information Engineering, Kunsan National University
Kunsan, Cheonbuk, 573-701, Korea
{yslee, kwnam}@kunsan.ac.kr*

**Corresponding author: Yon Sik Lee, 307 Digital Information Center, Department of Computer Information Engineering, Kunsan National University
Kunsan, Cheonbuk, 573-701, Korea, Email:yslee@kunsan.ac.kr, Telephone: +82-63-469-4553, Fax: +82-63-469-4560*

Abstract

A migration method of the mobile agent is a factor that affects the overall performance of the entire distributed system, it is necessary to find efficient migration methods of the mobile agent within the sensor network and to collect and store data related to various components (server, sink and sensor node) of the sensor network, thereby providing consistent naming services. Accordingly, this paper presents design and implementation of MetaTable that is divided into MetaData where information on the sensor data server is stored and SubMetaData where various types of information on sink nodes and data on sensor nodes connected with the sink nodes is stored. Also, the paper comes up with efficient naming methods on the sensor network by using the proposed MetaTable data. In this paper, the selection of node migration depends on the information of MetaData referred to, and the reliability of the migration information is determined by mutual cooperation between a naming agent and each sensor server and meta-data (MetaTable data) generation methods. For the verification of validity and guarantee of applicability of the proposed method, we performed experiments on the migrations of the mobile agent and active rule execution through the mutual relations between agents by using meta-data on the components of the sensor network.

Acknowledgement

This work was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) grant funded by the Korea government (MEST) (No. 2009-0074891 and No. 2009-0067958).