

Design of Large Scale Network Simulator using Device Emulator for Internet of Things

Bumho Kim, Haeyong Kim, Seon-Tae Kim

ETRI(Electronics and Telecommunications Research Institute), Daejeon, Korea

mots@etri.re.kr, haekim@etri.re.kr, stkim10@etri.re.kr

Abstract—The term “Internet of Things” (IoT) denotes the interconnected of embedded devices designed to leverage data gathered by sensors. These devices are interconnected to transmit information and control instruction via the internet infrastructure. The development of an IoT system is a complex process due to the large scale and widely distribution of deployed wireless node. The simulator provides infrastructure to easily test and debug the algorithms of the IoT applications before they are to be deployed in actual environment. In this paper, we propose the emulation based network simulator architecture which focus on the large scale IoT system. With the proposed simulator architecture, the IoT application developers can reduce cost by cutting the amount of nodes needed for application test and shortens development time required for deploying a large scale IoT system.

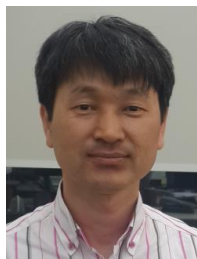
Keyword— Embedded software, Internet of things, Systems simulation, Wireless sensor networks



Bumho Kim received the BS degree in computer science from Sogang University in 2000 and MS degree in information technology from Information Communication University in 2002, respectively. Currently, he is a senior researcher in the Embedded SW Research Department at Electronics and Telecommunications Research Institute (ETRI), Daejeon, Korea. His research interests include embedded software, multimedia and distributed system.



Haeyong Kim received the B.S and M.S in Computer Science & Engineering from Seoul National University in 2004 and 2006, respectively. He is currently a researcher in Electronics and Telecommunications Research Institute (ETRI), Korea. He is one of developer of NanoQplus operating system. His research interests are lightweight operating system, embedded software, and sensor networks.



Seon-Tae Kim received the B.S, M.S and Ph.D. degree in the department of Electrical and Electronics Engineering from KAIST, Seoul National University and Korea University, Korea in 1997, 2000 and 2012, respectively. In February 2000, he joined the in the real-time multimedia team at the Electronics and Telecommunications Research Institute (ETRI), Korea. Since 2011, he has been a Director in the department of Embedded SW Research. His research interests are video compression, multimedia streaming, image processing, lightweight OS and sensor networks.