Abstract: E-D2HCP: Enhanced Distributed Dynamic Host Configuration Protocol

Luis Javier García Villalba[1, *], Julián García Matesanz[2], Ana Lucila Sandoval Orozco[1], Delfín Rupérez Cañas[1] and Tai-hoon Kim[3, 4]

[1] *Grupo de Análisis, Seguridad y Sistemas (GASS)*
Departamento de Ingeniería del Software e Inteligencia Artificial (DISIA)
Facultad de Informática, Despacho 431, Universidad Complutense de Madrid (UCM)
Calle Profesor José García Santesmases s/n, Ciudad Universitaria, 28040 Madrid, Spain
E-mail: {javiergv, asandoval, delfinrc}@fdi.ucm.es

[2] *Grupo de Análisis, Seguridad y Sistemas (GASS)Sección Departamental de Sistemas Informáticos y Computación - Lenguajes y Sistemas Informáticos y Ciencias de la Computación e Inteligencia Artificial -*
Facultad de Ciencias Matemáticas, Despacho 310-F, Universidad Complutense de Madrid (UCM), Plaza de Ciencias, 3, Ciudad Universitaria, 28040 Madrid, Spain
E-mail: julian@sip.ucm.es

[3] *Department of Multimedia Engineering, Hannam University, 133 Ojeong-dong, Daedeok-gu, Daejeon, Korea*
E-mail: taihoonn@hannam.ac.kr

[4] *Department of Information Technologies, Global Vision School Australia (GVSA)*
20 Virgina Court, Sandy Bay, Tasmania, Australia
E-mail: taihoonn@gvsa.asia

Abstract

Mobile Ad Hoc Networks (MANETs) consist of mobile nodes equipped with wireless devices. They do not need any kind of pre-existent infrastructure and are about self-managed networks. MANETs enable communication between mobile nodes without direct links and across multihop paths. To ensure correct operation of the routing protocols, Mobile Ad Hoc Networks, have to assign unique IP addresses to the MANET devices. Furthermore, the address assignment is an important issue when dealing with MANET networks because the traditional approaches are not applicable without some changes, having to provide new protocols for the address auto-configuration. These schemes must take into account the properties of MANETs such as dynamic topology, limited resources or lack of infrastructure. In this paper, we propose a stateful scheme for dynamic allocation of IP addresses in MANETs entitled E-D2HCP because it is based on a previous piece of work (D2CHP). This extension includes the network merging not covered by its predecessor. Simulation results show that the new protocol also improves D2HCP functionality in areas such as fault tolerance, concurrency and latency.

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