

**Review Form: 1<sup>st</sup> International Workshop on  
Services and Infrastructure for the Ubiquitous and Mobile Internet (SIUMI'05)**



**SIUMI 2005**

**WEB MINDS**

Columbus, Ohio,  
USA, June 6<sup>th</sup>, 2005

In conjunction with the 25th Int. Conference on Distributed Computing Systems (**ICDCS'05**)

Paper Number: 06

Paper Title: Fast Mobile Node Configuration Using Address Caching in Hybrid Wireless Network

Authors: Wooseong Kim, YangWoo Ko, Soojeon Lee and Taeik Kang

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**Reviewer1:**

<b>Familiarity</b> Rate your familiarity with the topic	1	2	3X	4	
	Novice	Some knowledge	Familiar	Expert	
<b>Significance</b> Technical relevance and practicality of ideas in the paper	1	2X	3		
	Not significant	Somewhat significant	Highly significant		
<b>Novelty</b> How original the problem and/or solution method is	1	2X	3		
	Not novel	Somewhat novel	Highly novel		
<b>Quality of Presentation</b> Writing and presentation style/accuracy	1	2X	3		
	Poorly written	Could be improved	Well written		
<b>Overall Recommendation</b>	1	2	3X	4	5
	Strong reject	Weak reject	Weak accept	Accept	Strong accept

**Contributions**

Schema for caching DHCP information on peers in hybrid p2p/cellular networks.

The paper appears to be technically correct, even if not very easy to follow in the explanation of the details.

The overall idea appears to be interesting, even if not particularly difficult to elaborate.

The improvements measured and compared to the standard, centralized DHCP solution appear to be marginal (few percents).

**Strengths and weaknesses**

+ detailed description of the proposed technique and actual validation of the results

- the above description is complex and the measured results show marginal improvements

**Detailed public comments**

Overall the paper presents an interesting idea together with the technical details of its implementation and the measurement evaluation of the benefits over the standard DHCP solution.

However, the description of the technical details is complex and not very easy to read, so that I would suggest re-writing this description in order to streamline and simplify it.  
The presented measurement results show only marginal improvements over DHCP, so that I am not sure they would stimulate others to adopt the proposed solution.  
Perhaps a "Conclusion" section discussing this point should be added.

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## **Reviewer2:**

<b>Familiarity</b> Rate your familiarity with the topic	1	2X	3	4	
	Novice	Some knowledge	Familiar	Expert	
<b>Significance</b> Technical relevance and practicality of ideas in the paper	1	2X	3		
	Not significant	Somewhat significant	Highly significant		
<b>Novelty</b> How original the problem and/or solution method is	1	2X	3		
	Not novel	Somewhat novel	Highly novel		
<b>Quality of Presentation</b> Writing and presentation style/accuracy	1	2X	3		
	Poorly written	Could be improved	Well written		
<b>Overall Recommendation</b>	1	2X	3	4	5
	Strong reject	Weak reject	Weak accept	Accept	Strong accept

## **Contributions**

Mobil Node pre-configuration through disseminating host configuration data via direct communication between hosts.

## **Strengths and weaknesses**

Focus on Local Area Networks. Limited relevance for handoff preconfiguration in Wide Area scenarios. Elegant idea but fast configuration of the mobile node addresses only half the problem. How does the corresponding node reach the mobile node and be informed of the new location? The second problem is that there are no real conclusions about the implications beyond an analysis of the measurements. Therefore, the decision is a (weak) reject.

## **Detailed public comments**

The authors should also be aware of Maximilian Zündt (1), Peter Tabery (2) and Christian Bachmeir "Seamless Handoff in Community Based and Location Aware Heterogeneous Wireless Networks (3), MoMuC2003, [http://www.lkn.ei.tum.de/~max/papers/momuc2003\\_zuendt.pdf](http://www.lkn.ei.tum.de/~max/papers/momuc2003_zuendt.pdf)

### Reviewer3:

<b>Familiarity</b> Rate your familiarity with the topic	1	2	3	4	
	Novice	Some knowledge	Familiar	Expert	
<b>Significance</b> Technical relevance and practicality of ideas in the paper	1	2	3		
	Not significant	Somewhat significant	Highly significant		
<b>Novelty</b> How original the problem and/or solution method is	1	2	3		
	Not novel	Somewhat novel	Highly novel		
<b>Quality of Presentation</b> Writing and presentation style/accuracy	1	2	3		
	Poorly written	Could be improved	Well written		
<b>Overall Recommendation</b>	1	2	3	4	5
	Strong reject	Weak reject	Weak accept	Accept	Strong accept

### **Contributions**

The submitted paper addresses the problem of automatic configuration of IP addresses in a hybrid wireless network environment (that is, the combination of cellular and ad-hoc mobile networks), which still represents an open issue for such kind of network infrastructures. The solution proposed in the paper is a somewhat novel idea. A mobile node configures its public IP address using the neighboring wireless nodes, instead of the fixed network. Such nodes act as DHCP servers, each with a certain preconfigured address pool, and coordinate each other via a main DHCP server belonging on the fixed network. Nevertheless, the paper lacks in technical depth and practical relevance.

### **Strengths and weaknesses**

Although the discussed topic is interesting and the proposed solution has a certain degree of novelty, the paper fails in demonstrate the practical usability of the suggested scheme. Answers to questions related to i) lightweight-ness (each node executes a DHCP server), and ii) configuration of the address pool of each device, should be provided in the paper. Furthermore, the simulative results at the end of the paper, do not relate the proposed solution to the DHCP with relay function (discussed in the related work section), that seems to be the most similar work to the proposed one.

### **Detailed public comments**

Unfortunately, the paper lacks in addressing a set of important issues which affect the usability of the proposed scheme.

First, there are no comments on the lightweight-ness of the proposed solution. Accordingly to the paper, each device must always execute a DHCP server. How much processing power and memory space requires such a server to be executed? Knowing the answer to this question is particularly important when limited resources devices, such as PDA or mobile phones, are used.

More important, authors do not explain how the address pool for each device is assigned. In other words, the paper does not address the start-up of the solution. This seems to be a crucial point of the proposed scheme. Indeed, if each device needs to communicate with the main DHCP server to obtain its address pool, the whole scheme looses its advantages. Nevertheless, the communication with the main DHCP server seems to be the only possible solution, since a mobile device cannot know its address pool a priori as it moves from a network to another.

The simulative results presented in section 4, compare the proposed scheme with the common DHCP with flooding, instead of comparing the scheme with the DHCP with relay function, that adopts a scheme similar to the one proposed by authors.

Other concerns are the following: in section 2.2.1, Mobile IP should be considered as a related work, since it is also named in the rest of the paper without being introduced. In section 2.2.2, the MANET (Mobile Ad hoc NETWORKS) acronym, should be expanded. Some related work, such as PMWRS, are unclearly explained. What does it mean that MANETconf “makes a lot of traffic”? Do authors have an evidence, or measure, of such “a lot” of traffic? The same kind of statement is also repeated in other cases throughout the paper. In section 3, figures 1, 2 and 3 are not commented. In section 4, figure 4 is not well explained: it is not clear what x and y axis represent. The section 5 on future works, announced in the introduction, is not present in the paper. Finally the paper contains several typos.