



## Journal Menu

- Abstracting and Indexing
- Aims and Scope
- Article Processing Charges
- Articles in Press
- Author Guidelines
- Bibliographic Information
- Contact Information
- Conference Sponsorships
- Editorial Board
- Editorial Workflow
- Reviewers Acknowledgment
- Subscription Information

Call for Proposals for  
Special Issues

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[Abstract](#)[Full-Text PDF](#)[Linked References](#)[How to Cite this Article](#)

Research Letter

## Advances in IP Micromobility Management Using a Mobility-Aware Routing Protocol

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### Abstract

Several micromobility schemes have been proposed to augment Mobile IP and provide a faster and smoother handoff than what is achievable by Mobile IP alone, the majority of which can be categorized into either "network prefix-based" or "host-specific forwarding" mobility management protocols, depending on the routing method used. This letter proposes a mobility-aware routing protocol (MARP) which makes use of both of these routing methods using dynamic IP address allocation. Its performance is evaluated and compared against hierarchical Mobile IP (HMIP) and Cellular IP based on handoff performance, end-to-end delivery delay, and scalability. The results demonstrate that MARP is a more robust, flexible, and scalable micromobility protocol, minimizes session disruption, and offers improvements in handoff performance.