In this paper, we propose the distributed cache invalidation mechanism (DCIM), which is a client-based cache consistency scheme implemented on top of a previously proposed architecture for caching data items in mobile ad hoc networks (MANETs), namely COACS, where special nodes cache the queries and the addresses of the nodes that store the responses to these queries. Caching frequently accessed data items on the client side is an effective technique for improving performance in a mobile environment. The classical cache invalidation strategies are not suitable for the mobile environments due to frequent disconnections and mobility of the clients. The huge amount of demand has been created due to trends toward wireless communications and advances in mobile technologies, which are increasing the consumer demands for ubiquitous access to Internet-based information and services. DCIM can be implemented using ns2, and compared against the client-based and server-based schemes to assess its performance experimentally. We introduce DCIM that is totally client-based. DCIM is a pull-based algorithm that implements adaptive time to live (TTL), piggybacking, and pre-fetching, and provides near strong consistency capabilities.
References


Index Terms

Computer Science

Wireless

Keywords

MANET, data caching, pull-based, TTL, shared data.