Abstract

Mobile devices are the building blocks of mobile ad hoc networks (MANETs). They are typically characterized by limited resources, high mobility, transient availability, and lack of direct access to the data source (server). In MANET environments, data caching is essential because it increases the ability of mobile devices to access desired data, and improve overall system performance. In this paper client data cache invalidation mechanism is proposed, it is a client-based cache consistency scheme that is implemented on the top of a previously proposed architecture for caching data items in MANETs, namely cooperative and adaptive caching system (COACS) [16]. It is a special node that cache the queries and the address of the nodes
that store the responses to these queries. Previously a server-based consistency scheme i.e.,
smart server update mechanism (SSUM) was proposed which is server based, where as in this
paper client data cache invalidation mechanism is proposed that is totally client-based. Client
data cache invalidation mechanism is a pull-based algorithm that implements adoptive time to
live (TTL), piggy backing, and pre-fetching, and provides near strong consistency capabilities,
client data cache invalidation mechanism is analyzed to assess the delay and bandwidth gains
(or costs) when compared to polling every time and push-based scheme.

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Index Terms

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Keywords

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