A Hybrid Cache Invalidation Technique for Data Consistency in MANET

Abstract

Recent advances in computer and wireless communication technologies have led to an increasing interest in ad hoc networks, which are temporarily constructed by only mobile hosts. Data accessibility in ad hoc networks is lower than that in the conventional fixed networks. Caching the frequently accessed data items on the client side is an effective technique for
improving the performance in a mobile environment. This form of data caching significantly improves the efficiency of information access in a wireless ad hoc network which in turn reduces the access latency and bandwidth usage. The main objective is to avoid the stale data using invalidation policy based on TTL. This paper introduces an Extended Adaptive TTL (Ex-ATTL) algorithm, in which 1-hop distance nodes to data cache node maintain a hash table for cache invalidation. Data item name is used as key and TTL is used as its value. The network is simulated using NS-2 to evaluate the performance of the proposed algorithm, also it is compared with fixed TTL and Adaptive TTL schemes. The simulation results shows that Ex-ATTL algorithm can cut the query delay by a factor of 3 and double the throughput compared to the Adaptive TTL.

Reference

- D. Barbara and T. Imielinski, “Sleepers and Workaholics: Caching Strategies for Mobile

**Index Terms**

Computer Science                         Wireless

**Key words**

Invalidation                                MANET                                Stale

Data                                          TTL

Cache Consistency