

Improving freenet's performance by adaptive clustering cache replacement

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Abstract: This paper proposes an adaptive clustering cache replacement scheme to improve the performance of Freenet peerto- peer networks. Efficient data retrieval in peer-to-peer networks in general and in Freenet in particular is a challenging problem. We follow the approach of using the small-world behavior to model the data cache replacement in Freenet [16] and propose an extension to it: an adaptive clustering cache replacement scheme instead of LRU and enhanced-clustering cache replacement. The chosen seed key is not fixed but may vary depending on the request change in order to increase the adaptability of Freenet. Simulation results show that our proposed scheme improves the performance of Freenet better in term of higher request hit ratio and lower average hops per request in comparison to the two mentioned schemes at heavy workload. © 2009 IEEE.

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