

Efficient producer mobility support in named data networking

Abstract

Named Data Networking (NDN) is a promising architecture for the future Internet and it is mainly designed for efficient content delivery and retrieval. However, producer mobility support is one of the challenging problems of NDN. This paper proposes a scheme which aims to optimize the tunneling-based producer mobility solution in NDN. It does not require NDN routers to change their routing tables (Forwarding Information Base) after a producer moves. Instead, the Interest packet can be sent from a consumer to the moved producer using the tunnel. The piggybacked Data packet which is sent back to the consumer will trigger the consumer to send the following Interest packets through the optimized path to the producer. Moreover, a naming scheme is proposed so that the NDN caching function can be fully utilized. An analysis is carried out to evaluate the performance of the proposal. The results indicate that the proposed scheme reduces the network cost compared to related works and supports route optimization for enhanced producer mobility support in NDN.