

A new multicast-based architecture to support host mobility in IPv6

ABSTRACT

A new multicast group join/leave mechanism for mobile nodes (MNs) is proposed. The mechanism is based on hash algorithm. This paper explains the construction of a dynamic delivery tree of the mobile node movement for a multicast-based mobile IPv6 network, such that the branches of the tree constitute the shortest paths from the packet source to each of the visited locations. The branches of the tree grow and shrink to reach the mobile node when necessary. The mobile node is assigned a multicast address and the correspondent nodes (CNs) send packets to the multicast group. As the mobile node moves to a new location, it joins the multicast group through the new location and prunes through the old location. The performance of the proposed mechanism was evaluated through a simulation model built for this purpose. Simulation results show that the dynamics of joining and leaving the group directly affect handoff latency and smoothness, as a result it conserve radio frequency (RF) bandwidth.

Keyword: Mobile IPv6; Hash algorithm; Multicast group