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Design and Evaluation of a Multihoming-Based Mobility Management Scheme to Support Inter Technology Handoff in PNEMO
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Abstract

Handoff management is an indispensable component in supporting network mobility. The handoff situation arises when the Mobile Router (MR) or Mobile Node (MN) crosses the different wireless communication access technologies. At the time of inter technology handoff the multiple interface based MR can accomplish multihoming features such as enhanced availability, traffic load balancing with seamless flow distribution. These multihoming topologies are greatly responsible for reducing network delays during inter technology handoff. This article proposes a multihoming based Mobility management in Proxy NEMO (MM-PNEMO) scheme that considers benefits of using multiple interfaces. To support the proposed scheme design a numerical framework is developed that will be used to assess the performance of the proposed MM-PNEMO scheme. The performance is evaluated in the state-of-art numerical simulation approach focusing the key success metrics of signalling cost and packet delivery cost, that eventually scaling the total handoff cost. The numerical simulation result shows that the proposed MM-PNEMO delightedly reduces the average handoff cost to 60% compared to existing NEMO Basic support protocol (NEMO-BSP) and PNEMO. © 2020, Springer Science+Business Media, LLC, part of Springer Nature.

Author Keywords

Handoff; Mobility management; Multihoming; NEMO; NEMO BSP; PNEMO

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