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The effect of network's size on the performance of the gateway discovery and selection scheme for MANEMO
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Abstract

In the era of Internet technology, new applications are developed everyday requiring continuous and seamless connections. This urges for access availability solutions to the new scenarios. One of the critical architecture is the Mobile Ad-Hoc Network Mobility (MANEMO). However, the integration of Ad-hoc and NEMO technologies came out with many complications like redundant tunnels and the existence of multiple Exit Routers. This paper presents a scheme to discover and select the optimum gateway to improve the robustness and the performance of the network irrespective of the used routing protocol. The MANEMO Gateway discovery and selection scheme (MGDSS) extends the Tree Discovery Protocol and the Neighborhood Discovery protocol used by NEMO and Ad-Hoc to carry the necessary gateway selection parameters. To compare the effect of network's size on the performance of the proposed scheme, the standard NEMO BSP and the Multi-homed MANEMO (M-MANEMO) approaches OPNET Modeler 14.5 was used. The results show that the average data packets dropped, the end-to-end delay and the throughput of the proposed MGDSS outperform those for the standard M-MANEMO and standard NEMO BSP. © 2017, Institute of Advanced Engineering and Science. All rights reserved.

Author Keywords

Gateway selection; MANEMO; MANET; Mobile Ad Hoc NEMO; Network mobility

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