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Hierarchical Route Optimization Scheme Using Advanced Binding Update List (BUL+) for Nested Mobile Networks

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Abstract

Supporting networks that roam as one unit is needed to provide the transparency of Internet in mobile frameworks, like cars, trains, planes, buses, etc. To accomplish this, NEMO (Network Mobility) Basic Support protocol has been proposed and developed by Internet Engineering Task Force (IETF). Although, it achieves continuous, optimal and secure communication to and from all nodes, it still suffers from many drawbacks, especially when the level of nesting increases. To overcome these limitations, this paper presents a new route optimization scheme for nested mobile network using hierarchical structure with Advanced Binding Update List (BUL+). From performance evaluation, it shows that this scheme reduces packet overhead, handoff latency, packet transmission delay, and achieves optimal routing.

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