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Abstract

This specification defines an extension for mobility session redirection in Proxy Mobile IPv6 networks, enabling the sessions to be redirected between local mobility anchors over a PMIPv6 domain.

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1. Introduction

RFC 6463 describes the runtime local mobility anchor assignment functionality and corresponding mobility options for Proxy Mobile IPv6 (PMIPv6). However, it is valid only for initial registration process not in the middle of the session.

Checking load condition on initially designated LMA and redirecting a requested session to other LMAs can be used for load balancing. However, load condition is dynamically changed and varied by incoming and handover sessions. For better load balancing effect, this draft specifies mobility session redirection over PMIPv6 networks.

2. Overview

The mobility session redirection, in short MSR, relies on the runtime LMA assignment scheme defined in [RFC6463].
Figure 1 shows the message sequence procedure for proposed mobility session redirection scheme. Suppose that each LMA has a load threshold it can endure. When load reaches the threshold of acceptable capacity of LMA1, LMA redirection is then activated for a selected mobile node (MN). Alternatively, when the load reaches the absolute maximum capacity allowed in LMA1, LMA1 does not wait for the next refresh binding request of Proxy Binding Update (PBU) message, but proactively sends a load balancing (LB) warning message to the designated MAG to force a refresh binding request. For the warning message, the update notification mechanism, defined in [RFC7077], as to induce the binding refresh request can be utilized.

LMA1 proceeds to pass the binding update to LMA2, and handles the corresponding acknowledgment. Once a chosen MN gets successfully registered at LMA2, LMA2 takes the anchoring role for the MN so that...
data traffic between the MN and CNs is anchored at LMA2. For the packet interception at LMA2, there may be various methods depending on the deployed policies of the operators; one could to use IPv6 anycast address to intercept the packets destined to the prefix the MN has, based on the shared prefix configuration of LMAs. The other could extend LMA to act as a proxy neighbor to the neighbor discovery request for the packets destined to the prefix the MN has.

3. Required functions and considerations

3.1. Load monitoring

LMAs need to collect and manage load information of all MNs in its binding cache through utilizing Load Information Mobility option [RFC6463] or relying on other management systems.

3.2. Target MN selection

The proposed scheme may potentially lead to service disruption on the MN when it occurs simultaneously with inter-MAG handoff. To minimize this occurrence, a careful target MN selection is required. However, this issue is out of scope in this specification.

4. Security Considerations

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5. IANA Considerations

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6. References

6.1. Normative References


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