

Advances in Mobility Management for IP Networks

Editors:

Aisha Hassan Abdalla Hashim

Othman Khalifa

Shihab A. Hameed



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SERVICE RECOVERY OF MULTICAST HIERARCHICAL MOBILE IPV6 WITH CONTEXT TRANSFER

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18.1 INTRODUCTION

Service recovery is a mathematical analysis metric used to evaluate the performance of Multicast Hierarchical Mobile IPv6 with Context Transfer Protocol (M-HMIPv6/CXTP) [1]. The service recovery time is derived from the handover process flow mentioned in [1]. The M-HMIPv6/CXTP scheme is benchmarked with the standard HMIPv6 (proposed by IETF) [2]. In the M-HMIPv6/CXTP scheme the multicast information transfer is implemented based on the CXTP [3] predictive handover scheme.

18.2 SERVICE RECOVERY

The service recovery time is actually the time needed for the service to resume to normal after the handover of Mobile Node (MN).

In HMIPv6, there are four parameters that need to be considered for the total service recovery time after the handover from the first domain M-MAP1 to another domain M-MAP2. The parameters are:

- Time taken to send the MLD [4] message from M-MAP2
- Time taken to receive the MLD message from MN
- Time taken to send the join message from M-MAP2 to the tree
- Time taken to receive the multicast packets

However in case of M-HMIPv6/CXTP, the total service recovery time there are only two parameters which are:

- Time taken to send the join message from M-MAP2 to the tree
- Time taken to receive the multicast packets

Fig. 18.1 shows the process flow for Hierarchical Mobile IPv6 [2], while Fig. 18.2 shows the process flow for M-HMIPv6/CXTP.