

Advances in Mobility Management for IP Networks

Editors:

Aisha Hassan Abdalla Hashim

Othman Khalifa

Shihab A. Hameed



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MESSAGE FORMAT OF M-HMIPV6/CXTP

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13.1 INTRODUCTION

Multicast Listener Discovery (MLD) [1] is used by an IPv6 router to discover the presence of multicast listeners on its directly attached links. It also used to discover specifically which multicast addresses are of interest to those neighboring nodes. Context Transfer Protocol (CXTP) [2] message is used to carry the MLD message to the new IPv6 router.

This chapter specifies the message format of MLD and CXTP in general. It also specifies the enhanced message format used Multicast Hierarchical Mobile IPv6 with CXTP (M-HMIPv6/CXTP) [3].

13.2 MESSAGE FORMAT

MLD is derived from version 2 of IPv4's Internet Group Management Protocol, IGMPv2 [4]. MLD uses ICMPv6 message types, rather than IGMP message types [1]. Fig. 13.1 shows the MLD message format.

There are three types of MLD messages, Multicast Listener Query, Multicast Listener Report, and Multicast Listener Done. The Multicast Listener Query message has two subtypes which are [1]:

- General Query used to learn which multicast addresses have listeners on an attached link.
- Multicast-Address-Specific Query, used to learn if a particular multicast address has any listeners on an attached link.

These two subtypes are differentiated by the contents of the Multicast Address field.

In a Query message, the Multicast Address field is set to zero when sending a General Query, and set to a specific IPv6 multicast address when sending a Multicast-Address-Specific Query. In a Report or Done message, the Multicast Address field holds a specific IPv6 multicast address to which the message sender is listening or is ceasing to listen, respectively [1].