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Diameter Proxy Mobile IPv6: Mobile Access Gateway and Local Mobility Anchor Interaction with Diameter Server

This specification defines Authentication, Authorization, and Accounting (AAA) interactions between Proxy Mobile IPv6 entities (both Mobile Access Gateway and Local Mobility Anchor) and a AAA server within a Proxy Mobile IPv6 Domain. These AAA interactions are primarily used to download and update mobile node specific policy profile information between Proxy Mobile IPv6 entities and a remote policy store.

Status of This Memo

This is an Internet Standards Track document.

This document is a product of the Internet Engineering Task Force (IETF). It represents the consensus of the IETF community. It has received public review and has been approved for publication by the Internet Engineering Steering Group (IESG). Further information on Internet Standards is available in Section 2 of RFC 5741.

Information about the current status of this document, any errata, and how to provide feedback on it may be obtained at http://www.rfc-editor.org/info/rfc5779.

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1. Introduction

This specification defines Authentication, Authorization, and Accounting (AAA) interactions between a Mobile Access Gateway (MAG) and a AAA server, and between a Local Mobility Anchor (LMA) and a AAA server within a Proxy Mobile IPv6 (PMIPv6) Domain [RFC5213]. These AAA interactions are primarily used to download and update mobile node (MN) specific policy profile information between PMIPv6 entities (a MAG and an LMA) and a remote policy store.

Dynamic assignment and downloading of an MN's policy profile information to a MAG from a remote policy store is a desirable feature to ease the deployment and network maintenance of larger PMIPv6 domains. For this purpose, the same AAA infrastructure that is used for authenticating and authorizing the MN for a network access can be leveraged to download some or all of the necessary policy profile information to the MAG.

Once the network has authenticated the MN, the MAG sends a Proxy Binding Update (PBU) to the LMA in order to set up a mobility session on behalf of the MN. When the LMA receives the PBU, the LMA may need to authorize the received PBU against the AAA infrastructure. The same AAA infrastructure that can be used for the authorization of the PBU, is also used to update the remote policy store with the LMA-provided MN specific mobility session-related information.

In the context of this specification, the home AAA (HAAA) server functionality is co-located with the remote policy store. The NAS functionality may be co-located with the MAG function in the network access router. Diameter [RFC3588] is the used AAA protocol.

2. Terminology and Abbreviations

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 [RFC2119].

The general terminology used in this document can be found in [RFC5213] and [NETLMM-PMIP6]. The following additional or clarified terms are also used in this document:

Network Access Server (NAS):

> A device that provides an access service for a user to a network. In the context of this document, the NAS may be integrated into or co-located to a MAG. The NAS contains a Diameter client function.

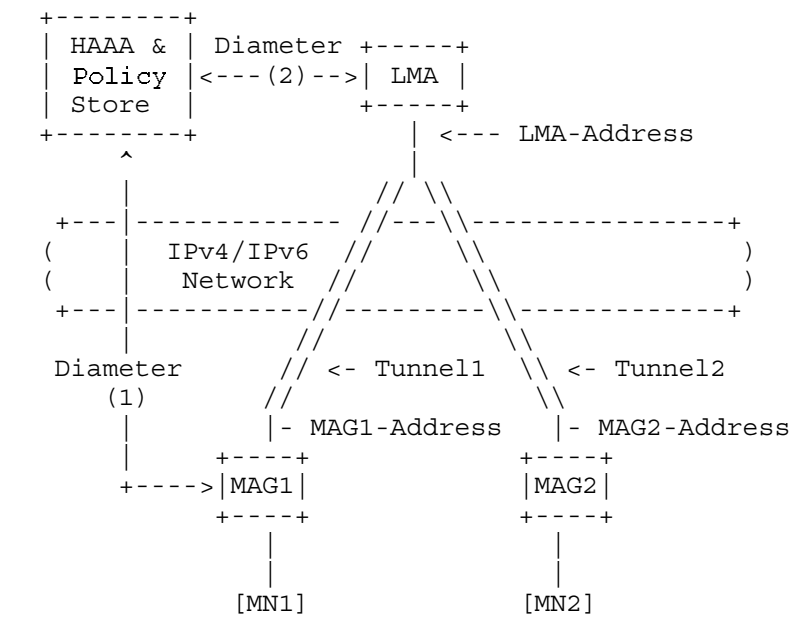
Home AAA (HAAA):

An Authentication, Authorization, and Accounting (AAA) server located in user's home network. A HAAA is essentially a Diameter server.

3. Solution Overview

This document addresses the AAA interactions and AAA-based session management functionality needed in the PMIPv6 Domain. This document defines Diameter-based AAA interactions between the MAG and the HAAA, and between the LMA and the HAAA.

The policy profile is downloaded from the HAAA to the MAG during the MN attachment to the PMIPv6 Domain. Figure 1 shows the participating network entities. This document, however, concentrates on the MAG, LMA, and the HAAA (the home Diameter server).



Legend:

(1): MAG-to-HAAA interaction is described in Section 7.1
(2): LMA-to-HAAA interaction is described in Section 7.2

Figure 1: Proxy Mobile IPv6 Domain Interaction with Diameter HAAA Server