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Abstract

This document describes a means by which a device can learn the URI of the Local Location Information Server (LIS) using a DHCP option.

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1. Introduction

DHCP [RFC2131] is a commonly used mechanism for providing bootstrap configuration information allowing a host to operate in a specific network environment. Unlike largely static, logical network configuration data, such as a Domain Name Server or default gateway address, required by a host to operate in the network, the physical location of a host can change; in many cases without the need for a network reattachment. The network node responsible for providing physical location information pertaining to a host is the Location Information Server (LIS).

A LIS provides location information to a device using the HELD protocol [I-D.winterbottom-http-location-delivery]. HELD is a webservices application layer protocol that is accessed by a URI. Like most network servers and services the LIS must first be discovered by the host prior to use. This document describes IPv4 and IPv6 DHCP options for LIS discovery.
2. Terminology

The key conventions and terminology used in this document are defined as follows:

This document reuses the terms Target, Location Server, Location Generator, Location Recipient and Using-Protocol as defined in [RFC3693]. Note that in this context, the Location Server is distinct from what is alternatively referred to as a Registrar in other contexts. In some specifications the Location Server is referred to as a Location Information Server or LIS.

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 [RFC2119].
3. Overview

This document describes how a device can learn the address of the local LIS using DHCP.
4. Location Information Server Discovery

4.1. DHCPv4

The DHCPv4 option includes a list of URIs; the first URI must be attempted first and subsequent URIs contacted only in the event of a problem in retrieving location information. Each URI must reference a service that is able to provide the Target with location information.

```
+---------------------------------------------------------------+
| LOCSERV_URI | Length | URI ... |                     |
|---------------------------------------------------------------|
| URI (cont. max of 253 octets)                                |
+---------------------------------------------------------------+
```

LOCSERV_URI: The IANA assigned option number (TBD).
Length: The length of the URI in octets.
URI: The URI of the HELD service. This URI MUST be no more than 253 bytes in length, and MUST NOT be NULL terminated.

4.2. DHCPv6

DHCP for IPv6 is defined in [RFC3315]. The DHCPv6 option for this parameter is similarly formatted to the DHCPv4 option.

```
+---------------------------------------------------------------+
| OPTION_LOCSERV_URI | option-len | URI ... |
|---------------------------------------------------------------|
| URI (cont’d, up to 253 octets) ... |
+---------------------------------------------------------------+
```

OPTION_LOCSERV_URI: The IANA assigned option number (TBD).
option-len: The length of the URI in octets.
URI: The URI of the HELD service. This URI MUST be no more than 253 bytes in length, and MUST NOT be NULL terminated.
5. Security Considerations

The options presented in this document describe how a host can learn the URI of the HELD-based LIS in their access network. The LIS is responsible for providing location information and this information is critical to a number of network services; a host does not necessarily have a prior relationship with a LIS. Therefore, impersonation of a LIS is the most relevant threat to the use of this option. It is recommended that DHCP authentication defined in [RFC3118] be used to provide DHCP option integrity.

The address of a LIS is usually well-known within an access network; therefore, interception of DHCP messages does not introduce any specific concerns.
6. IANA Considerations

IANA has allocated a DHCPv4 option code of [TBD] and a DHCPv6 option code of [TBD] for the HELD Service URI option described in this document.
7. References

7.1. Normative references


7.2. Informative references

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