Multicast address allocation extensions options
<draft-ietf-dhc-multopt-02.txt>

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1. Abstract

This document describes host configuration options that may be used
by multicast address allocation protocols[3]. The options include
critical information such as the multicast address
of the multicast address allocation server(s) and a list of
multicast scopes supported by respective servers. These options are
designed to work with the extensions to DHCP [1] servers to support
multicast address allocation (described in a separate draft),
however, their use may not be limited to the above protocol.

2 Requirements

Throughout this document, the words that are used to define the
significance of particular requirements are capitalized. These
words are:

  o "MUST"

This word or the adjective "REQUIRED" means that the
item is an absolute requirement of this specification.
3 Terminology

This document uses the following terms:

- **"DHCP client"**
  
  A DHCP client is an Internet host using DHCP to obtain configuration parameters such as a network address.

- **"DHCP server"**
  
  A DHCP server is an Internet host that returns configuration parameters to DHCP clients.

- **"MDHCP client"**
  
  A MDHCP client is a DHCP client that supports MDHCP extensions.

- **"MDHCP server"**
  
  A MDHCP server is a DHCP server that supports MDHCP extensions.
4 Multicast Address Allocation Configuration Options

Any client attempting to request a multicast address must know the multicast group address to which the server is listening to and a list of multicast scopes supported by the multicast address servers. The following two options are specifically designed to provide the multicast address server address and the scope list that can specifically be used by the protocol described in [3], however, its use is not limited to the protocol described in [3].

4.1 Multicast Group Address of MDHCP Servers.

This option is used DHCP servers to provide the multicast group address of the MDHCP servers. The MDHCP client can obtain this parameter as part of the normal DHCP protocol message exchange or separately via DHCPINFORM.

<table>
<thead>
<tr>
<th>Code</th>
<th>Len</th>
<th>Multicast Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBD</td>
<td>4</td>
<td>i1 i2 i3 i4</td>
</tr>
</tbody>
</table>

The code for this option is TBD and the length is 4.

4.2 Multicast Scope List Option.

The format of the multicast scope list option is:

<table>
<thead>
<tr>
<th>Code</th>
<th>Len</th>
<th>IP Address</th>
<th>Count</th>
<th>List</th>
</tr>
</thead>
<tbody>
<tr>
<td>107</td>
<td>n</td>
<td>i1 i2 i3 i4</td>
<td>N</td>
<td>l1 l2 l3 l4</td>
</tr>
</tbody>
</table>

Where IP address is the address of the MDHCP server, to its best knowledge, reachable from the client via unicast. The scope list a list of N tuples, where each tuple is of the form,

<table>
<thead>
<tr>
<th>Scope ID (4 Bytes)</th>
<th>TTL</th>
<th>Desc</th>
<th>Scope Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID1 ID2 ID3 ID4 T n d1 d2 d3 d4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

where scope ID is a unique identifier to designate the scope, TTL is the multicast TTL value for the multicast addresses of the scope, scope description is a string describing the scope (need not be null terminated) and scope len is the length of scope description.
Scope id is numeric representation of the scope and is used by the client to indicate a multicast scope to the server. In order to keep the usage of scope id consistent in the MBONE, this draft SHOULD be coordinated with [3] reserve a scope id for each multicast range in [3]. The scope id with its MSB(most significant bit) of 1 should be used for administratively scoped multicast address range. And the scope id with its MSB of 0 should be used to represent other pre-defined internet scopes.

The code for this option is 107.

Example:

The IP address of the MDHCP server is 10.1.1.1. There are two scopes supported by the multicast address allocation server: 1) Inside the abcd.com, 2) world. Then this option will be used as:

<table>
<thead>
<tr>
<th>Code</th>
<th>Len</th>
<th>IP Address</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>107</td>
<td>32</td>
<td>10</td>
<td>1</td>
</tr>
</tbody>
</table>

Scope ID TTL Len Desc
---------------------
| 1 | 10 | 16 | Inside abcd.com |

4 References

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