DHCPv4 Option for discovering IEEE 802.21 Information Service Location

draft-daniel-dhc-mihis-opt-02.txt

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- DHC @ 65th IETF, Dallas -
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Outlook on IEEE802.21 Information Service

- IEEE802.21 is consist of three kinds of services.
  - MIES: Media Independent Event Service
  - MICS: Media Independent Command Service
  - MIIS: Media Independent Information Service

- MIIS provides a framework by which a MIH function both in the MN and in the network can discover and obtain homogeneous and heterogeneous network information within a geographical area to facilitate handovers.

- MIIS includes support for various Information Elements (IEs). IEs provide information that is essential for a handover module to make intelligent handover decision.
DHCP issues from IEEE802.21 Specification

- IEEE802.21 Information Service is composed of schemas structures.
  - A schema defines structure of information. A schema is used in the 802.21 information service to define the structure of each information element as well as the relationship among different information elements supported. The MIIS schema is classified into two major categories.

- To use Information Service, IS Server locations must be discovered by MN.
  - DHCP was decided as a candidate mechanism within IEEE802.21 specification. (IEEE P802.21/D00.05 @ 06 January 802.21 meeting)
Proposed solutions (cont’d)

• MIIS Location Discovery Option
  – Several sub-options:
    • IS Server IPv4 Address sub-option (mandatory)
    • IS Server FQDN sub-option (optional)
    • IS Server Schema sub-option (optional)

<table>
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<tr>
<th>Code</th>
<th>Len</th>
<th>MIIS Location Discovery Field</th>
</tr>
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<tbody>
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<td>i1 i2 i3 i4 iN</td>
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<table>
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<th>Len</th>
<th>IS Server IPv4 Address List</th>
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<tbody>
<tr>
<td>1</td>
<td>N</td>
<td>a1 a2 a3 a4 ...</td>
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<table>
<thead>
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<th>IS Server FQDN List</th>
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<tr>
<td>2</td>
<td>N</td>
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<table>
<thead>
<tr>
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<th>IS Server Schema URI</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>N</td>
<td>IS Server Schema URI</td>
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</tbody>
</table>
**Proposed solutions**

- **DHCP Server**
  - MIIS Location Information
    - IS Server IP address
    - IS Server FQDN
    - IS Server URI

- **802.21 Client**
  - MIIS Location Discovery Option

- **802.21 IS Server**
  - IS Information Request
  - IS Information Response

- **Out of scope (MIPSHOP)**
Change log from an initial versions following the DHC folks voices

• Changed option format as sub-options
  – enc (encoding byte) was used in the initial version
  – Thanks to David, Ted and Andre for their input

• Changed Schema URI as a single field
  – Not exceed 255 bytes
  – A single URI would be favorable for IEEE802.21 standard
Moving forward

• So far, DHCPv4 is only defined.
  – DHCPv6 will have the same option format.
    • Either merged document or separated one following the DHC consensus.

• IEEE802.21 already decided DHCP as one of candidate mechanism for discovering IS Server.
  – IEEE P802.21/D00.05
  – Draft availability via MIPSHOP WG Chair Request
    • http://www1.ietf.org/mail-archive/web/mipshop/current/msg02410.html

• Accepted it as an DHC WG Item ?