DHCP Options for APN and Attach Type

Basavaraj Patil (basavaraj.patil@nokia.com)
Kuntal Chowdhury (kchowdhury@starentnetworks.com)
Proposal

- Specify two new DHCP options for v6 and v4
  1. Access Point Name (APN)
  2. Attach Type
Access Point Name is used in GPRS networks

- APN is in the form of an FQDN
- Enables the MN to indicate to the network a specific gateway to which connectivity is desired
- APN is carried in Layer 2 signaling between the host and access network
- APN has applicability in other wireless networks as well which do not have ability to send the APN via layer2
- Hence the need to define an alternative mechanism; Use of DHCP to carry the APN information is one option
How is the APN used

MN indicates the ID (APN) of the gateway in the session establishment signaling.

APN maps to a gateway which provides a specific service.

MN indicates the ID (APN) of the gateway in the session establishment signaling.

APN maps to a gateway which provides a specific service.
Applicability in Proxy MIP6 networks

MN indicates the APN of LMA1 with which it seeks connectivity via DHCP.
In the case of network based mobility using Proxy MIP6, an MN may move from one Access Router (MAG) to another. The MN needs to indicate as part of the attach process if the new MAG should consider the attach as a Handover or an initial network entry. The MAG uses this information to construct the Proxy Binding Update (PBU) and set the HO flag to the appropriate value.
MN indicates via DHCP that the Attach to MAG2 is a HO which results in the MAG setting the HO flag in the PBU to 2.
APN Option

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| | OPTION_APN | | Option-len | |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| | Access Point Name | |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

ATTACH_TYPE Option

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| | OPTION_ATTACH_TYPE | | Option-Len | |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| | ATTACH_TYPE | |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
Next steps

- Feedback on the proposed options sought from the WG
- Revise the I-D to also include the v4 options