DHCP Vendor-Specific Message

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IETF-73 DHC WG
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Purpose

- Allows vendor-specific message exchanges between clients, relay agents, and/or servers
- Allows multiple vendors to make use of a single message number for completely different and independent purposes without conflict
  - Allows experimentation without collisions or need to hijack messages and avoids backwards compatibility issues when standardized
  - Allows DHCP vendor-specific functionality that might never be standardized or has little or no value being standardized
  - Reduces need for unique port assignments to use alternative vendor-designed protocols
- Possible applications include
  - Server-to-server protocol (aka failover or configuration related)
  - Relay-to-server/server-to-relay protocol
  - Experimental functions
History

• DHCPv6 version originally presented at Prague IETF
  – Contained reserved options range
  – Met with concern vendors may implement features that should be standardized

• Resubmitted DHCPv6 draft and wrote-up DHCPv4 version in July 2008 because of interest from several in the community
  – Reserved options range removed
### Proposed DHCPv6 Message

<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>

<table>
<thead>
<tr>
<th>msg-type</th>
<th>enterprise-number</th>
</tr>
</thead>
<tbody>
<tr>
<td>enterprise-number (contd)</td>
<td></td>
</tr>
<tr>
<td>vendor-data</td>
<td></td>
</tr>
<tr>
<td>(variable length)</td>
<td></td>
</tr>
</tbody>
</table>

**msg-type**
- VENDOR-SPECIFIC (to-be-assigned, 254 suggested)

**enterprise-number**
- The vendor's registered Enterprise Number as registered with IANA

**vendor-data**
- The vendor's message data (format up to vendor)

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Proposed DHCPv4 Message

- DHCP Message Type option (53) has code 254
- New DHCP Vendor Message option required:

```
  0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
| option-code | option-len | Option-code TBD
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
| enterprise-number |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
/    vendor-data     / The vendor’s data
~          ~       (format up to vendor)
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-
```

- Main purpose of this option is to communicate enterprise-number of vendor
- Other data may appear in message

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Possible Clarifications

• Kim Kinnear suggested that the vendor-data be encoded as vendor-specific options so format to decode is known (the meaning of data may not be)
  – I agree it is a good idea
Reasons For The Work

• Allows multiple vendors to make use of a single message number for completely different and independent purposes without conflict
  – Allows experimentation without collisions or need to hijack messages and avoids backwards compatibility issues when standardized
  – Allows DHCP vendor-specific functionality that might never be standardized or has little or no value being standardized
  – Reduces need for unique port assignments to use alternative vendor-designed protocols
What Next?

• Comments / Discussion
• Adopt as DHC WG work item