draft-volz-dhc-dhcpv6-vendor-message
draft-volz-dhc-dhcpv4-vendor-message

DHCP Vendor-Specific Message

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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

```
 0                   1                   2                   3
 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|    msg-type   |               enterprise-number               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
|  enterprise- |                                                |
| number (contd)|                                               .
+-+-+-+-+-+-+-+-+                                               .
.                          vendor-data                          .
.                        (variable length)                      .
|                                                               |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+

  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)
```

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**

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