draft-ietf-pim-reserved-bits-00

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Use of reserved bits

• Several pim message types use reserved bits
  – Not clear that reserved bits should be per message type
  – RFCs using reserved bits should have updated RFC 4601 or RFC 7761

• This draft fixes the above and defines a registry as below.

<table>
<thead>
<tr>
<th>Type bit(s)</th>
<th>Name</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 7</td>
<td>No-Forward</td>
<td>[RFC5059]</td>
</tr>
<tr>
<td>10 4-7</td>
<td>Sub-type</td>
<td>[RFC5015]</td>
</tr>
<tr>
<td>12 7</td>
<td>No-Forward</td>
<td>[RFC8364]</td>
</tr>
<tr>
<td>13 4-7</td>
<td>Extended type</td>
<td>[this document]</td>
</tr>
<tr>
<td>14 4-7</td>
<td>Extended type</td>
<td>[this document]</td>
</tr>
<tr>
<td>15 4-7</td>
<td>Extended type</td>
<td>[this document]</td>
</tr>
</tbody>
</table>
Extending the type space

• The current pim type space is only 4 bits. We have used 0-12.

• The current pim message header is:

  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
  +-----------------------------------------------
  |PIM Ver| Type |   Reserved    |           Checksum            |
  +-----------------------------------------------

• Extend the type space by defining types 13-15 using 4 reserved bits each to define a sub-type (similar to pim DF sub-types).
  – This gives us 3*16 additional pim message types denoted 13.0 – 13.15, 14.0 – 14.15 and 15.0 – 15.15.
  – The header for types 13-15 is defined as below.

  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
  +-----------------------------------------------
  |PIM Ver| Type |SubType| Rsvd  |           Checksum            |
  +-----------------------------------------------
Next steps

• The are drafts requesting new message types:
  – draft-ietf-pim-null-register-packing
  – draft-liu-pim-assert-packing

• These drafts should make use of the type extension mechanism defined here, so that we don’t use up the remaining type space too quickly.

• I believe the draft is ready, or nearly ready, publication. Ready for WGLC?
  – Want to get this published soon, so that new RFCs can make use of the extended type space