EVPN Multi-Homing Extensions for Split Horizon Filtering
draft-nr-bess-evpn-mh-split-horizon-00

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EVPN Multi-Homing Split-Horizon mechanisms

In current specifications

**ESI Label SHT**
- All-Active and Single-Active
- Works Inter-AS/domain

**Local Bias SHT**
- All-Active only
- No Inter-AS/domain

BUT: less resources, no extra labels, ingress NVE always forward locally

<table>
<thead>
<tr>
<th>Encapsulation</th>
<th>Default SHT</th>
<th>ESI Label</th>
<th>LB</th>
</tr>
</thead>
<tbody>
<tr>
<td>VXLAN, NVGRE</td>
<td>LB</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>MPLS</td>
<td>ESI Label</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>MPLSoX (x=GRE, UDP, IP)</td>
<td>ESI Label</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>GENEVE</td>
<td>LB (if no ESI option)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>ESI L (if option)</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

RFC8365
Local Bias SH Filtering
## BGP EVPN extensions

For network encapsulations that support both SHTs

### ESI Label extended community

Advertised with A-D per ES route (type 1)

<table>
<thead>
<tr>
<th>Type=0x06</th>
<th>Sub-Type=0x01</th>
<th>Flags (1 octet)</th>
<th>Reserved=0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserved=0</td>
<td>ESI Label</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+---------------------------------------------------------------+</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Flags Octet Bits:**
- 0: Single-Active bit
- 7-6: SHT (Split Horizon Type)

**SHT bit 7 6**

| 0 0 | Default SHT. Backwards compatible with [RFC8365] |
| 0 1 | Local Bias |
| 1 0 | ESI Label based filtering |
| 1 1 | reserved for future use |

### Signaling of the Split Horizon Type (SHT)

Allows NVE/PEs attached to the same ES to agree on the SHT to be used in the ES.

SHT is different than 00 only for tunnels that can support both SHTs

Backwards compatibility with RFC8365: inconsistency in the ES reverts to the default SHT

### NVEs supporting multiple encapsulations

A-D per ES routes advertise multiple encapsulations and SHT=00 if at least one of the encaps support only one SHT

A-D per ES routes advertise multiple encapsulations and SHT≠00 if all encaps support both SHTs

Different SHT may be signaled for the same ES in different A-D per ES routes for different groups of EVIs
Next steps

The Authors would like to request Feedback
Thank you