EVPN Multi-Homing Extensions for Split Horizon Filtering

draft-nr-bess-evpn-mh-split-horizon-02

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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 forwards locally

### Encapsulation

<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>
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*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)

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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
What is new in revision 02

1) Added SRv6
The use of Local Bias along with SRv6 means no ESI Filtering argument (Arg.FE2) lookup is necessary at the egress PE for multi-homing (the space can be used for a larger LOCATOR:FUNCTION).

2) Fixed some references and typos.
Next steps

The Authors would like to request Working Group Adoption
Thank you