Ethernet VPN Virtual Private Wire Services Gateway Solution
draft-sr-bess-evpn-vpws-gateway-01

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Agenda

1. Refresh on the EVPN VPWS Gateway procedures

2. Changes in version 01

3. Next steps
# EVPN VPWS Interconnect and why Service Interworking

When is the Service Interworking Solution Required for EVPN VPWS

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Service Interworking</th>
<th>Inter-Domain Option-B</th>
<th>Transport Interworking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per-Domain EVPN Multi-Homing</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Per-Domain Mass Withdrawal</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Per-Domain RD/RTs</td>
<td>Yes</td>
<td>Yes*</td>
<td>No</td>
</tr>
<tr>
<td>Per-Domain Ethernet Tag IDs</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>L2 attributes per Domain (CW, FAT, MTU)</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Heterogeneous Encapsulation</td>
<td>Yes</td>
<td>No</td>
<td>Yes**</td>
</tr>
<tr>
<td>Per-Domain EVPN Service OAM</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
“Redistribution”
All the procedures in the Gateway that involve
a) reception and process of the (source domain) EVPN route
b) programming of the forwarding path
c) readvertisement of the route to a different domain (the next destination domain)

Reception and Process
Follows RFC8214 and I-D.sr-bess-evpn-dpath

Forwarding state programming
Using received Label/VNI/SID
Allocation of the Label/VNI/SID of the next destination domain and switching operation

Re-advertised routes rules
Different RDs
Same or different RTs, Ethernet Tag IDs
ESI=0 unless I-ES is defined
L2 Attributes and encapsulation regenerated
P/B flags not propagated but set based on I-ES
Communities, non-evpn extended communities, large communities propagated
D-PATH updated
Service Interworking Procedures for EVPN VPWS
Service Gateway Redundancy

1. **Anycast Gateways**
   - Each anycast pair advertise the same Tag ESI=0
   - D-PATH is used to avoid loops if the same tag is used across domains

2. **EVPN Multi-Homing with I-ES**
   - I-ESI as in RFC9014 is used for EVPN VPWS
   - All-active or single-active
   - Mass withdrawal
Added support for EVPN FXC services (default Flexible Crossconnect mode or the VLAN-Signaled Flexible Crossconnect)

Updated references
Next Steps

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The authors would like to request Working Group Adoption
Thank you