BGP-LS Extension for Inter-as Topology Retrieval

draft-ietf-idr-bGPLs-inter-as-topology-ext

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• Scenario Summary
• Updated Solutions
• Comments/Suggestions
1. One backbone and hundreds of MAN/IDC, which are interconnected with each other via bundles of links. Each MAN/IDC and Backbone are in different IGP domain.

2. Need to collect the topology of each domain and build the inter-domain topology as well automatically.

1. IGP A/IGP B may run different IGP protocol, distributed traffic engineering may or may not deploy in every domain.

2. Collect the topology information from different domains via BGP-LS, and retrieve inter-as topology under different scenarios.
Proposed BGP-LS extension (Original)

Native IP Scenario

1. Redistributed the connected interfaces at the ASBR
2. Carry the originator information within the BGP-LS Prefix NLRI

TE Scenario (Newly defined TLVs carried in BGP-LS Link NLRI)

<table>
<thead>
<tr>
<th>TLV Code Point</th>
<th>Description</th>
<th>IS-IS/OSPF TLV/Sub-TLV</th>
<th>Reference (RFC/Section)</th>
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<td>Remote-AS Number</td>
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<td>[RFC5316]/3.3.1</td>
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<td>[RFC5392]/3.3.2</td>
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<td>[RFC5392]/3.3.3</td>
</tr>
</tbody>
</table>

TE scenario
Mainly for TE Scenario

1. The two ends of inter-as link lies within different IGP domain.
2. No way to fill the Remote Node Info

1. Inter-AS link is actually one single end link.
2. Similar with loopback interface.
3. Newly Define “Inter-AS TE” BGP-LS NLRI
Benefit for the newly defined NLRI

• There is no ambiguity for the Link NLRI
• It is easy for the controller to filter the inter-AS link.
  – Or else must de-encapsulation into link descriptor depth
• Can be used also for the Native IP scenario
  – No redistribution needed
  – Passive mode for the inter-AS links (as Robert mentioned on the list)
• Unify solution for TE and Native IP scenario.
Further Action

• Comments/Suggestions?

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