

BGP-LS Extension for Inter-as Topology Retrieval

[draft-ietf-idr-bgpls-inter-as-topology-ext](#)

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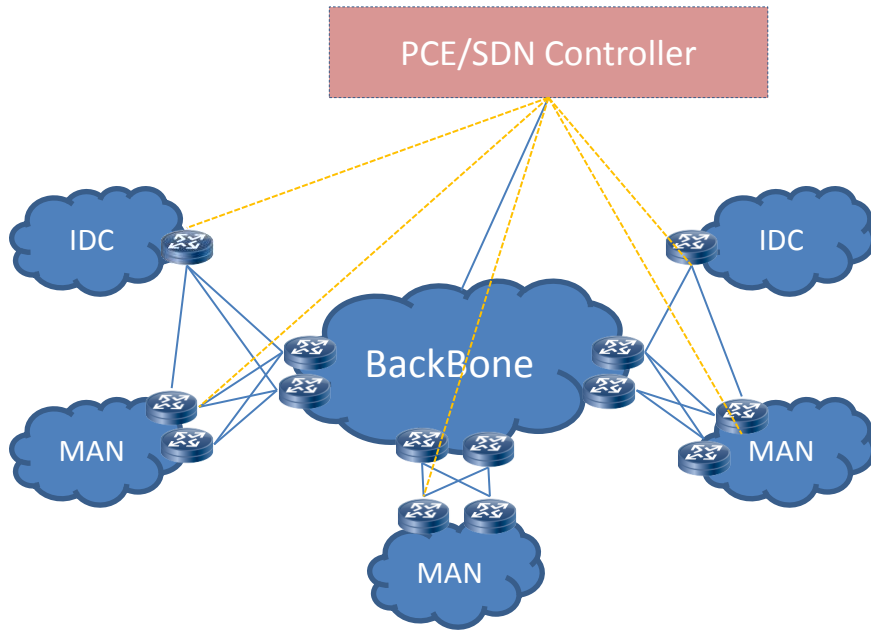
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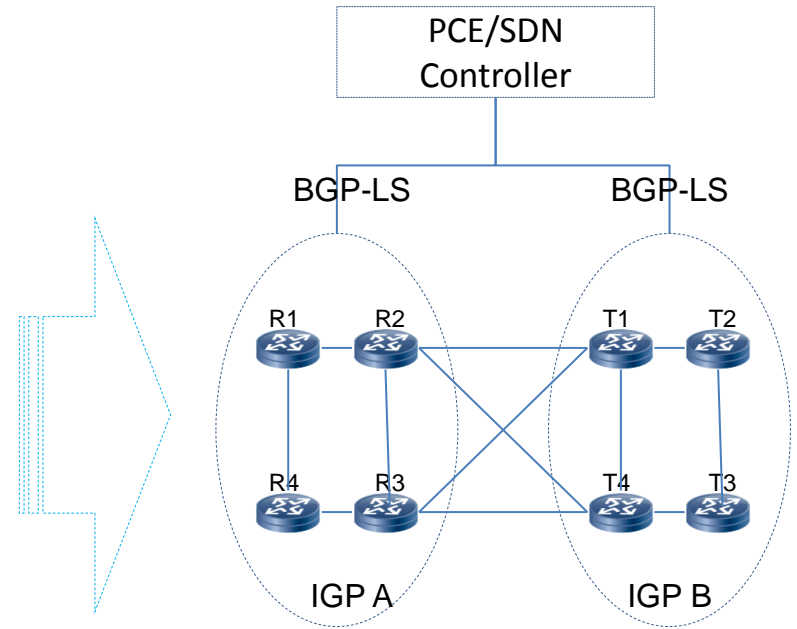
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Scenario Summary



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**)

TLV Code Point	Description	IS-IS/OSPF TLV/Sub-TLV	Reference (RFC/Section)
TBD	Remote-AS Number	24/21	[RFC5316]/3.3.1 [RFC5392]/3.3.1
TBD	IPv4 Remote ASBR ID	25/22	[RFC5316]/3.3.2 [RFC5392]/3.3.2
TBD	IPv6 Remote ASBR ID	26/24	[RFC5316]/3.3.3 [RFC5392]/3.3.3

TE scenario

Proposed BGP-LS extension(Update)

Mainly for TE Scenario

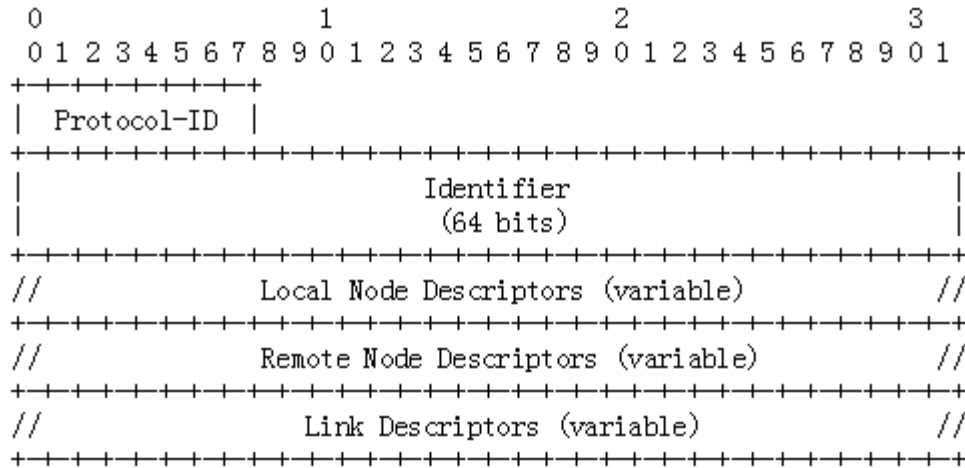
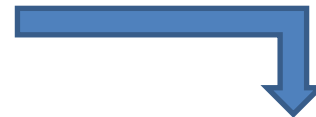


Figure 8: The Link NLRI Format

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**

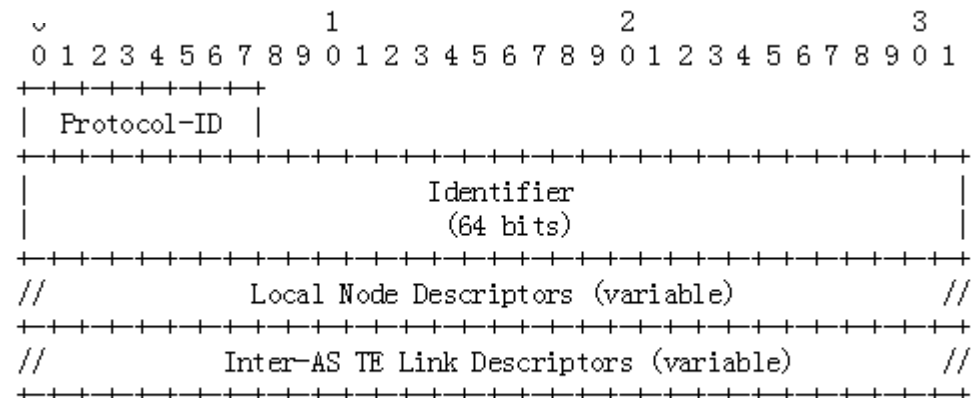


Figure 3: The Inter-AS TE Link NLRI Format

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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