

# Loop detection for imported routes

[draft-yue-lsr-loop-detection-for-imported-routes](#)

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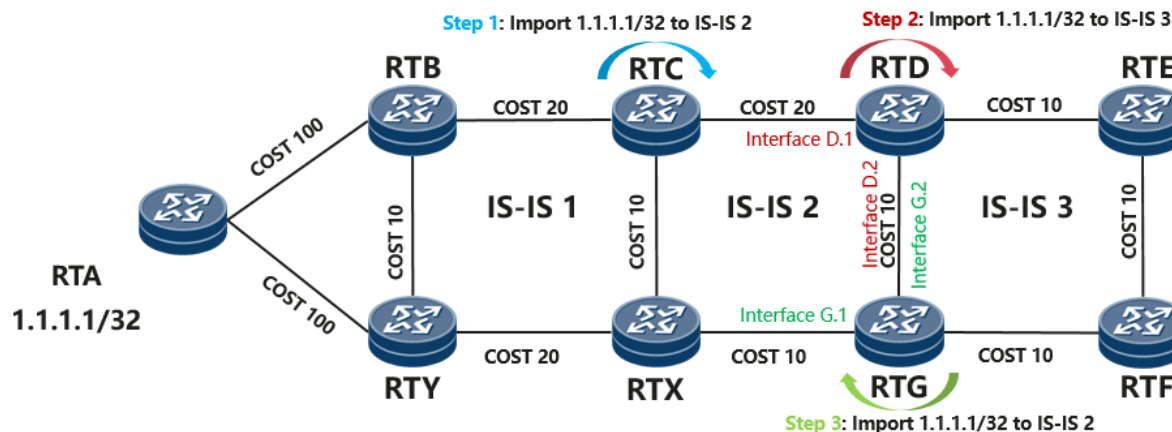
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1. Motivation & Problem Statement
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# Motivation & Problem Statement

- As dynamic routing protocols, IS-IS and OSPF are widely used on live networks. Mutual route import between IGP instance is often involved in networking solutions.
- When mutual route import happens among more than two IGP instances, shown as the following scenario, there are multiple routers(RTC, RTG) import the same prefix from different IGP instance and redistribute the prefix in the same IGP area(e.g. IS-IS 2). All these prefixes are advertised as external prefix with the same priority.
- Restricted routing policy need to be configured on the router, otherwise, routing loops may occur and cause critical problem.



# Motivation & Problem Statement

- If the IGP instance could recognize the route has already been redistributed by itself when import a route from others, the router knows that there might be routing loops in the network and can take some actions to avoid or fix further potential routing problems.
- Therefore, new sub-TLVs are introduced to support advertisement IPv4 and IPv6 prefix extended attribute flags and **a list of source router ID** of the routers which **has redistributed** the prefix.

# The IS-IS Prefix Redistribute-list Sub-TLV

- The Prefix Redistribute-list Sub-TLV advertise IPv4 and IPv6 prefix extended attribute flags and **a list of** router ID of the routers which **redistributed** the prefix.
- The Prefix Redistribute-list Sub-TLV is advertised as an optional sub-TLV of TLVs **135, 235, 236 and 237** in the **Router Information LSP**.

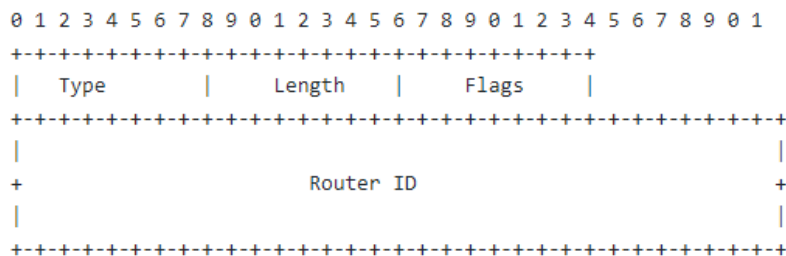


Figure 1: Prefix Redistribute-list Sub-TLV

Type: 10

Length: 1 + Router-ID length.

Flags: 1 octet. The following flags are defined:

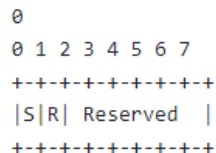


Figure 2: Flags

S-flag: If set, the prefix has be redistributed by the router that generate the current LSP.

R-flag: If set, the prefix has be redistributed by the router other than the router that generate current LSP.

Router ID: 6 octets. IS-IS System-ID as defined in [ISO10589].

There could be multiple Router IDs in the sub-TLV.

# Further Plan

- The OSPF Prefix Redistribute-list Sub-TLV
- Willing to get comments from mailing list

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