IGP POI
for Intra-domain SAV

draft-song-savnet-intra-domain-igp-poi-00
Xueyan Song (ZTE)
Zenggui Kou (ZTE)

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Agenda

• SAV Requirements
• Terminology
• IGP SAV Method
• IGP SAV Table
• IGP Extensions
• Next Steps
SAV Requirements

Specified at section 5 of [draft-ietf-savnet-intra-domain-problem-statement-02](https://datatracker.ietf.org/doc/draft-ietf-savnet-intra-domain-problem-statement-02/)

- Automatic update
- Accurate validation
- Working in incremental/partial deployment
- Fast convergence
- Security
Terminology

• Prefix Originated Indicator (POI):
  - The tag for IGP/BGP source Prefix Originated Identification
IGP SAV Method

• Enable the incoming interface with POI policy function for filtering or validating the source packets

• Advertise IGP route prefix including POI characteristic associated with the prefix source to its IGP neighbor (i.e., SAV validation entity)

• Generate extended prefix table with SAV specific information (i.e., POI) for indicating the prefix source location or direction and prefix-to-interface SAV rules

• Perform source address filtering and take actions based-on SAV validation state

An example for IGP POI method for multi-homing scenario
IGP SAV Table

- ER1 advertises P1 route including prefix SAV-specific Information (i.e., POI) to ER2;
- ER2 analyzes P1 prefix and verifies whether P1 and P2 prefix belonging to the same prefix source;
- If yes, then ER2 adds Int.2 (the valid interface for P2) as valid incoming interface of P1, incorporates SAV rule <P1, Int.2> to its local SAV table to avoid improper block of the valid P1 prefix packets received at Int.2 in multi-homing network;
- The full source prefix P1 table at ER2 is generated <P1, Int.2>, <P1, Int.4>.
- Similarly, the full source prefix P2 table at ER2 is generated <P2, Int.2>, <P2, Int.4>.

<table>
<thead>
<tr>
<th>Source Address Prefix</th>
<th>POI</th>
<th>Incoming Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>1</td>
<td>Int1, Int3</td>
</tr>
<tr>
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IGP Extensions

• OSPFv2
  - A new optional sub-TLV of OSPFv2 Extended Prefix TLV [RFC 7684]
• OSPFv3
  - A new optional sub-TLV of OSPFv3 Intra-Area-Prefix TLV [RFC 8362]
  - A new optional sub-TLV of OSPFv3 Inter-Area-Prefix TLV [RFC 8362]
  - A new optional sub-TLV of OSPFv3 External-Prefix TLV [RFC 8362]
• ISISv4/v6
  - A new optional sub-TLV of IPv4 prefix reachability TLV-135 [RFC 5305]
  - A new optional sub-TLV of Multi-topology IPv4 prefix reachability TLV-235 [RFC 5120]
  - A new optional sub-TLV of IPv6 prefix reachability TLV-236 [RFC 5308]
  - A new optional sub-TLV of Multi-topology IPv6 prefix reachability TLV-237 [RFC 5120]
Next Steps

• Analyze OSPFv2/OSPFv3/ISIS source router-id (see RFC 9084, RFC 7794) as POI identification and other possible reasonable options
• Ask for WG reviews and suggestions