

IGP POI for Intra-domain SAV

[draft-song-savnet-intra-domain-igp-poi-00](#)

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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](#)

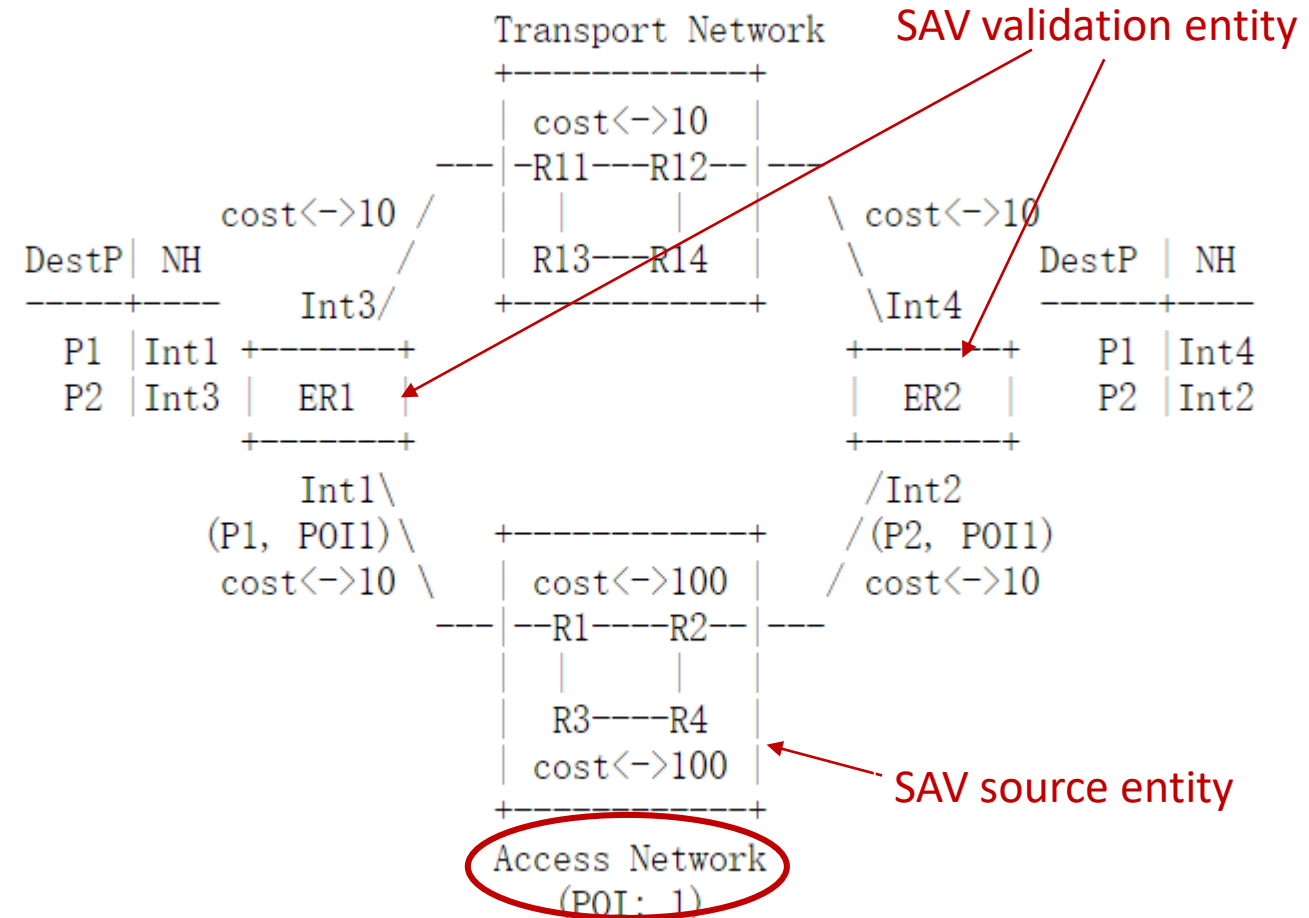
- Automatic update
- Accurate validation
- Working in incremental/partial deployment
- Fast convergence
- Security

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>.

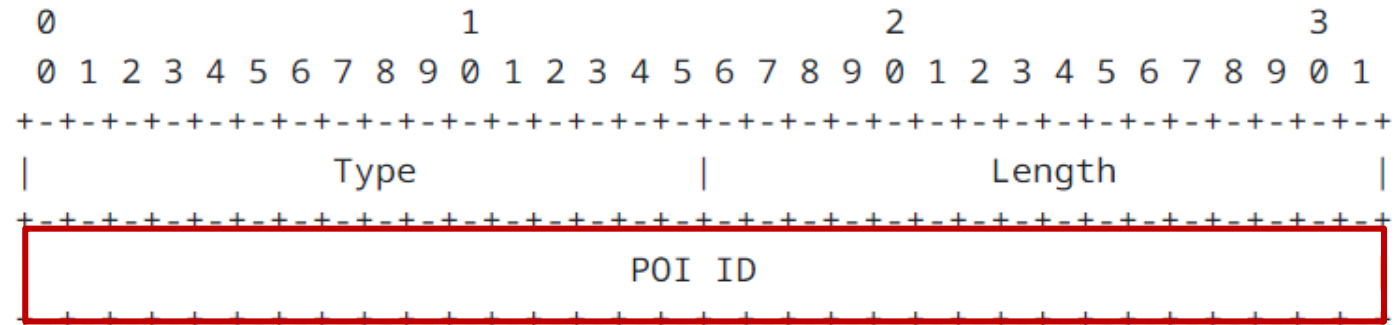
- IGP SAV table applied to ER1

Source Address Prefix	POI	Incoming Interface
P1	1	Int1, Int3
P2	1	Int1, Int3

- IGP SAV table applied to ER2

Source Address Prefix	POI	Incoming Interface
P1	1	Int2, Int4
P2	1	Int2, Int4

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