

Advertisement of Multi-Sourced SAV Rules using BGP Link-State (BGP-LS for Advertising SAV Rules)

Tian Tong (China Unicom)
draft-tong-idr-bgp-ls-sav-rule-00
Dan Li (Tsinghua University)

Nan Geng (Huawei)

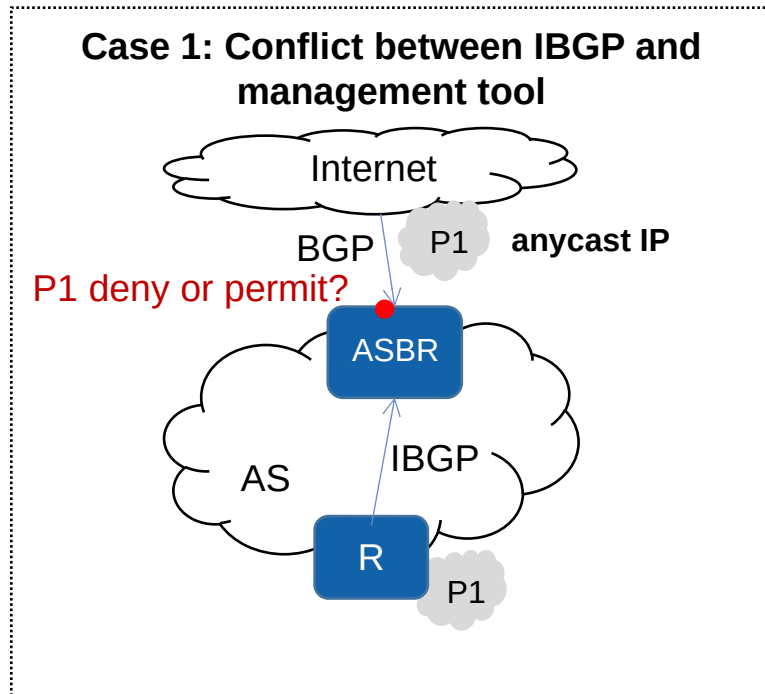
Nan Wang (China Unicom)

Shunwan Zhuang (Huawei)

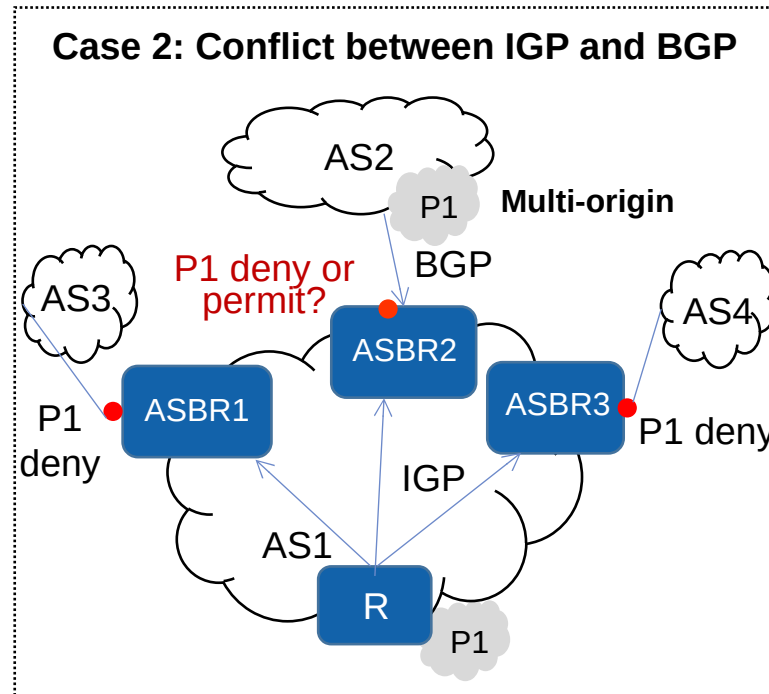
IETF-122

Use Cases

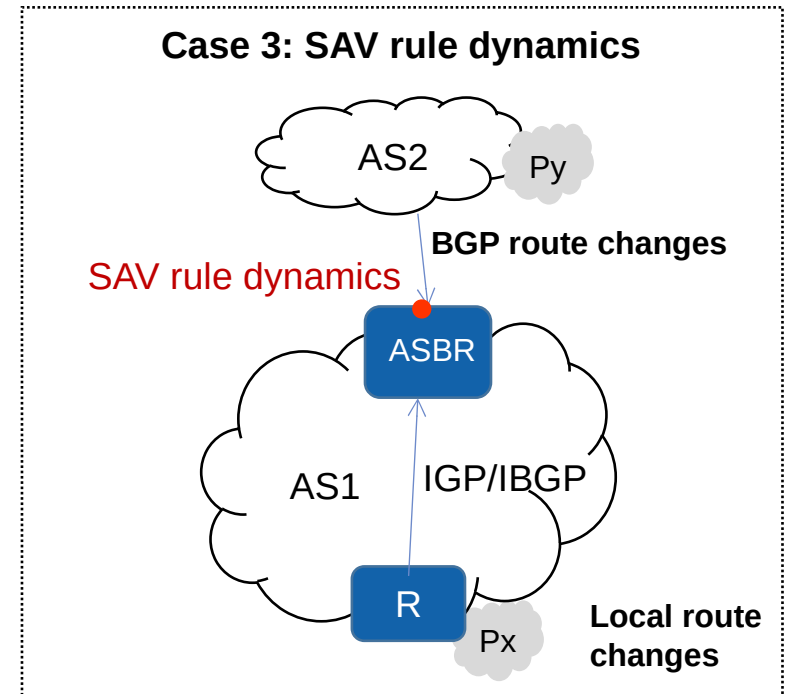
- ❑ SAV rules can be multi-sourced: **static configuration**, **management tools**, or **different routing protocols** such as OSPFv2, OSPFv3, IS-IS, BGP, or their extensions.
- ❑ Multi-sourced SAV rules **complicate management**. There may exist **rule conflicts**, and the rules can be very **dynamic**.



- Rule Source1 – IBGP: Block P1 at Internet interfaces
- Rule Source2 – Management tool: Permit P1 at Internet interfaces because P1 is anycast IP



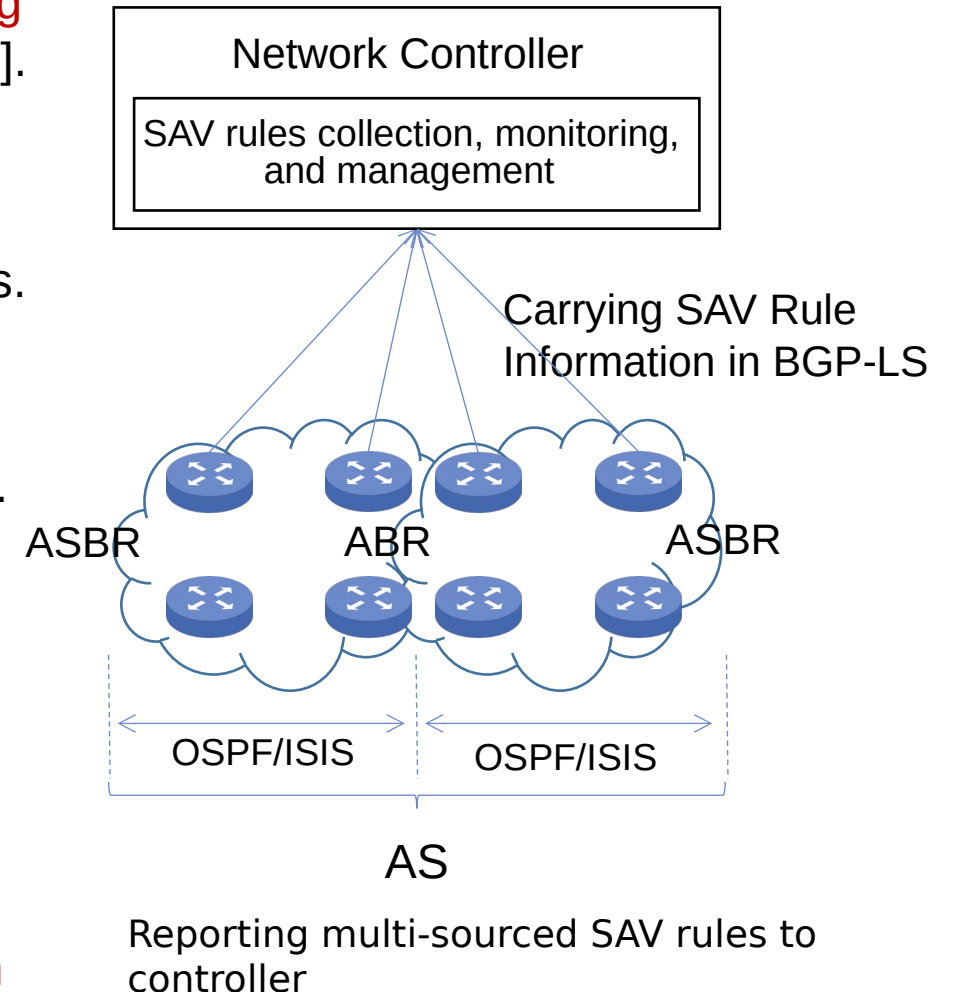
- Rule Source1 – IGP: Block P1 coming from AS2, AS3, and AS4
- Rule Source2 – BGP: Permit P1 coming from AS2



- Rule dynamics due to prefix re-allocation, link cost changes, or link breakdown, etc.

Collecting Multi-Sourced SAV Rules and Reporting to Controller

- ❑ Rule can be advertised to controller for **facilitating rule monitoring and management** [draft-tong-savnet-sav-enhanced-by-controller].
- ❑ The requirements of the rule advertising protocol:
 - **Simple.** A unified API for advertising multi-sourced SAV rules.
 - **Extensible.** Be easily extended to support more sources.
 - **Efficient.** Efficiently collect rules that may be much dynamic.
- ❑ BGP-LS ([RFC9552]) is an extension of BGP used to collect network topology state information for controllers, **making topology collection simpler and more efficient.**
- ❑ This document leverages the advantages of BGP-LS and proposes to **extend BGP-LS for advertising SAV rule information** on routers to a centralized server.

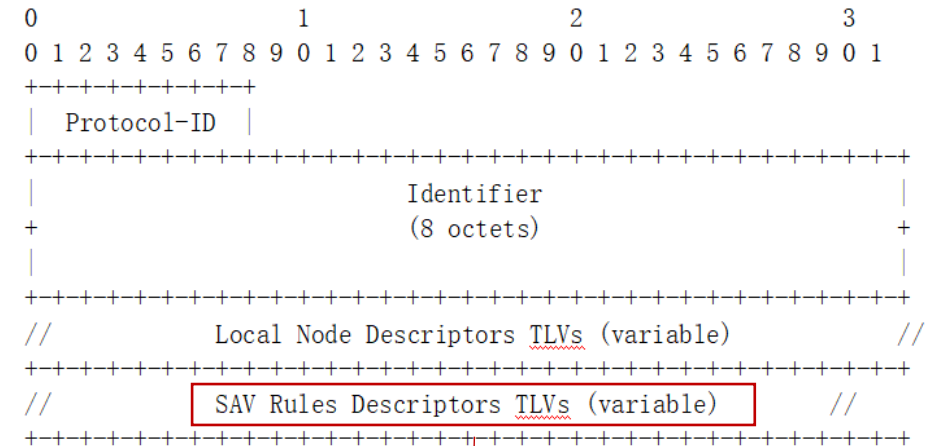


SAV Rule Information Carried in BGP-LS

□ The SAV rule information that is to be carried:

Information	Description
Source	The source of SAV rules, i.e., which protocol generates the carried SAV rules.
Node	Which node (router) maintains the carried SAV rules.
Interfaces	Interfaces enabled SAV.
Source prefixes	The source prefixes that are in the prefix list of the specified interfaces.
Validation mode	Blocklist mode or allowlist mode. “Interfaces”, “Source prefixes”, and “Validation mode” constitute the carried SAV rules.

BGP-LS SAV Rule NLRI



↓

TLV Code Point	Description	Length
TBD	Interface Name	variable
TBD	Interface Group	4
TBD	SAV Prefix	variable

Encodings can be found in draft-tong-idr-bgp-ls-sav-rule-00

More comments and discussion welcomed

Thank you!