

# IGP Extensions for Source Prefix Identification

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# Problem Statement and Requirement

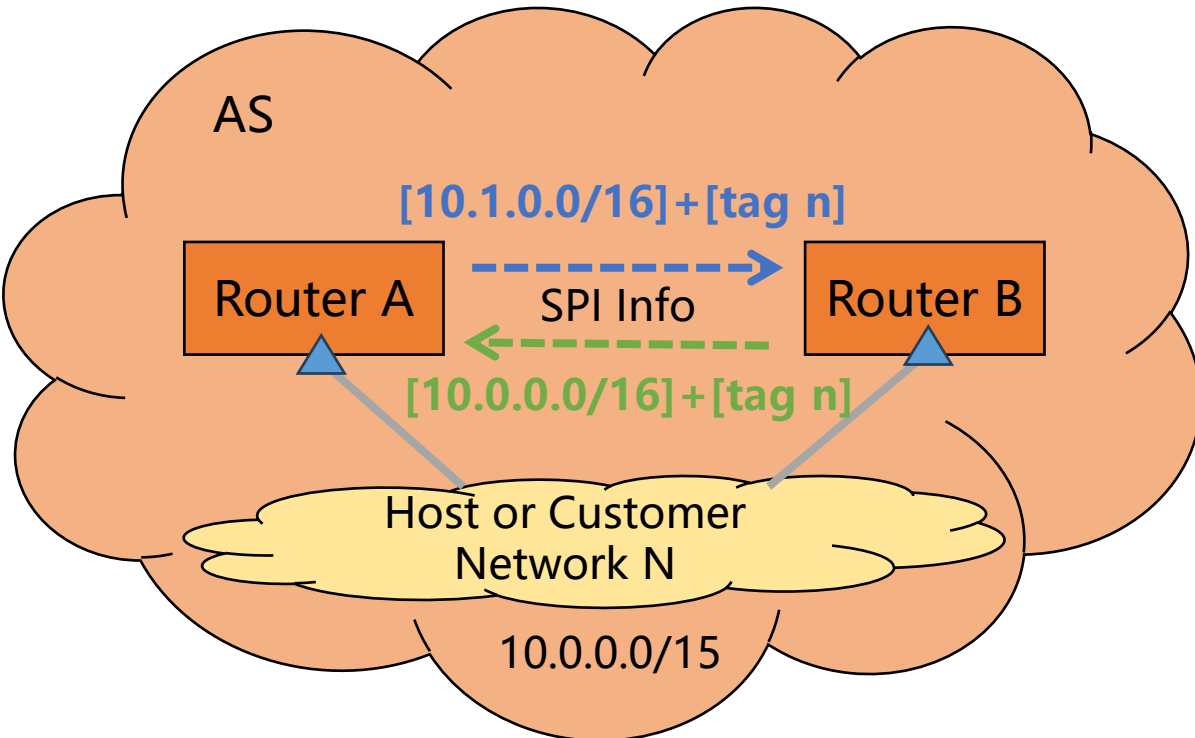
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- ❑ Existing intra-domain SAV mechanisms have high operational overhead or inaccurate validation problems
  - ◆ See [draft-ietf-savnet-intra-domain-problem-statement](#)
- ❑ To address these problems, intra-domain SAVNET architecture requires routers to exchange SAV-specific information, which helps generate more accurate SAV rules
  - ◆ The new intra-domain SAV solution should design an automatic way to communicate SAV-specific information among routers

# Key Idea of Source Prefix Identification (SPI)

Asymmetric routing scenario:

- Router A only learns the route to 10.1.0.0/16 from Network N
- Router B only learns the route to 10.0.0.0/16 from Network N



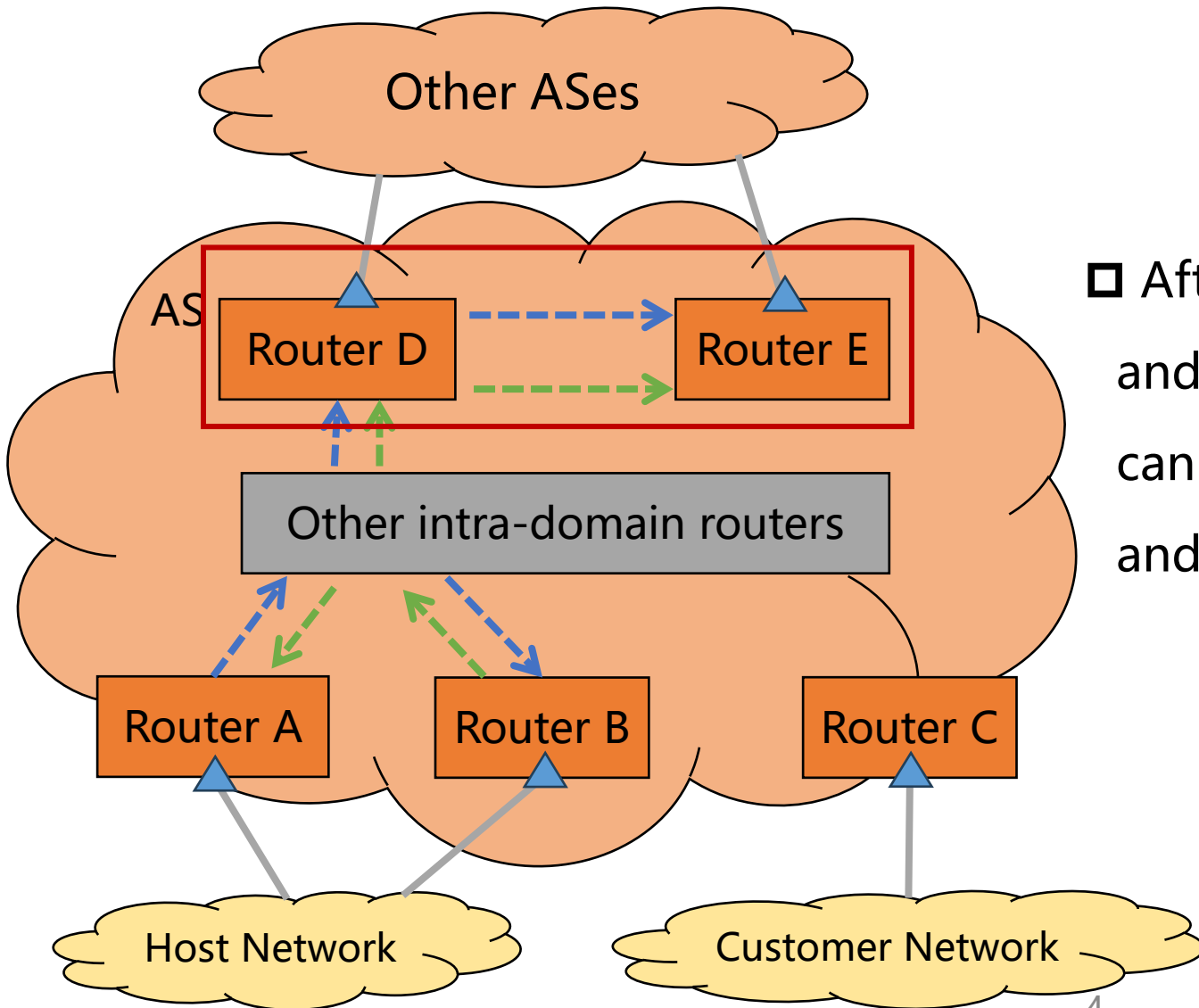
## SPI on host-facing and customer-facing routers

- ❑ Each host (or customer) network is assigned a unique tag value (e.g., tag n for Network N)
- ❑ Each host-facing (or customer-facing) router provides SPI information to other routers
  - ◆ SPI information contains the prefixes learned through its local routes to its host (or customer) network and the tag value of the network
- ❑ When a router receives SPI information with the same tag value as its host (or customer) network
  - ◆ It considers that the prefixes contained in the SPI information also belong to the host (or customer) network

# Key Idea of Source Prefix Identification (SPI)

## SPI on AS border routers

- ❑ After receiving SPI information from host-facing and customer-facing routers, AS border routers can identify source prefixes of each host network and customer network accordingly



# IGP Extension Considerations

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## □ IS-IS extension consideration

- ◆ Possible solution: carrying the tag in the Administrative Tag Sub-TLV when distributing IP prefix information
- ◆ A new Sub-TLV may be needed for customer-facing routers

## □ OSPF extension consideration

- ◆ Possible solution: carrying the tag in the Route-Tag when distributing IP prefix reachability information
- ◆ An extension to Route-Tag or a new Sub-TLV may be needed

# Next Step

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- ❑ Improve the design of IGP extensions
- ❑ Any comments and suggestions are welcome
- ❑ Cooperation is welcome

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**Thanks!**