BGP AS_PATH Verification Based on ASPA Objects


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New version 15 of the ASPA-based path verification draft:

New version 16 of the ASPA profile draft:

➢ Removes afiLimit

- Many thanks once again for the support during WGLC with comments and suggestions from many SIDROPS members.
Changes in v-15 of sidrops-aspa-verification draft

- Updates due to the removal of afiLimit from the ASPA profile
- Sections 7 and 8 are better organized
- New Section 7.2 "Verification and Mitigation at Egress eBGP Router"
  - Does not seem like a good idea anymore (see slides 4, 8)
- New Section 9.4 "DoS/DDoS Mitigation Service Provider“ added
- Other edits for text improvements
Considerations for Verification in IBGP and at eBGP Egress

- eBGP ingress: Doable with help from AS2’s own ASPA (see Slide 7)
- IBGP ingress: Not possible to do correctly without more complexity
- Does not seem a good idea
- eBGP egress: Focus on using the OTC Attribute (RFC 9234) to prevent local route leaks (see Slide 8)
Considerations for Verification in IBGP

Authors will try to discuss it this week and decide
Backup slides
(for discussion)
Verification in IBGP

• Seems possible to do it correctly
• R2 looks up AS2’s own ASPA
  ➢ If AS1 is listed as a Provider, then apply the Downstream algorithm
  ➢ If AS1 is not listed as a Provider, then apply the Upstream algorithm
  ➢ Works correctly, including RS and RS-client scenarios
Verification at eBGP Egress: Not a good idea

- To try to do this, R2 would add its own AS (i.e., AS2) to the AS_PATH, then perform verification using Section 7.2 (v-15 draft), and decide to propagate or not (to AS3)
- But the preceding AS (i.e., neighbor AS1) may be a lateral peer or provider and not have an ASPA registered
  - This could cause R2 to evaluate the path as Unknown (rather than Invalid) and propagate causing a route leak
- R1 can send a signal (Community) to R2 to covey the configured relationship with AS1 but that adds more complexity
- All that is needed is the ability to prevent a local route leak at AS2 and the OTC Attribute based filtering (RFC 9234) serves the purpose well!
Possible Recommendations

• Verification in IBGP – we can decide ‘Yes’ (IMO)
• Verification on eBGP egress – runs into issues
• OCT Attribute based filtering (RFC 9234) serves the purpose to prevent local route leaks
• Emphasize that an AS compliant with this RFC-to-be is expected to:
  ➢ Register ASPA
  ➢ Perform verification (eBGP ingress and IBGP)
  ➢ Perform OTC Attribute based filtering (RFC 9234)