AS-Cones

• IETF Draft
  • https://datatracker.ietf.org/doc/draft-ss-grow-rpki-as-cones/

• Goals
  • Create more feature parity between IRR and RPKI
  • Make provisioning operations easier
  • Go global, independent from IRR
Features of AS-Cones

- Granularity of declarations
- Default namespace
- Simple validation process
- Stub networks don’t need to do anything
Policy Object

• Must contain a “Default” policy
  • Which, by default, contains only the ASN

• Every relationship can point only to an AS-Cone
  • No reference to only one ASN (for this, create an AS-Cone)
AS-Cone Object

- Contains a list of ASNs or AS-Cones from customer networks

- Referenced as ASXXXX:Cone_name
  - Name must be unique only per ASN
Finding Policies and AS-Cones

• Policies and AS-Cones should be distributed by your favourite Validator

• To generate prefix filters, access the validated cache via an API
Generating Prefix Filters with AS-Cones

- As an upstream, read the policy definition for your customer network. Check:
  - If it contains a specific policy declaration, otherwise Default

- Take the AS-Cone referenced

- Walk the AS-Cone, create a list of all the ASN included
  - If you find circular AS-Cones declaration, discard them

- For every ASN, pick all the ROAs where it’s listed as originator
Security model

- Adding an AS-Cone to another AS-Cone requires acknowledgement
  - Avoids anyone adding, for example, large networks in their customer cone

- Adding an ASN to an AS-Cone has an optional acknowledgement

- The acknowledgement is registered in the AS-Cone as a boolean value in the “Validated” field for each entry
Building prefix filters

Loose
Get any ASN and any AS-Cone in the AS-Cone indicated by your downstream

Opportunistic
Get any ASN and any AS-Cone. For the ASNs, only consider those where the “Validated” field is set to 1

Almost-strict
Remove any sub-trees where any one single entry is not validated

Strict
Only consider the AS-Cone if every entry has been validated
References

• Material on Github
  • https://github.com/bgp/draft-ss-grow-rpki-as-cones

• Discussion welcome in the Grow IETF WG
Questions?

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