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# AS-Cones

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- 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

## AS58280 Policy

**AS3333: Default**  
**AS2121: My-Cone**  
**AS15562: Snijders**  
**Default: Customers**

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

# AS-Cone Object

**AS582800:Customers AS-Cone**

**AS58280**

**Customer1**

**Customer2**

**AS65535:Cust-AS-Cone**

- 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

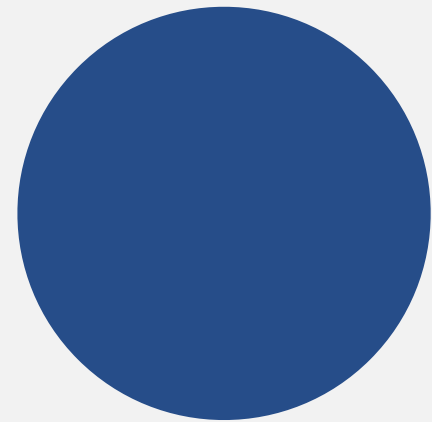
# Security model

- 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

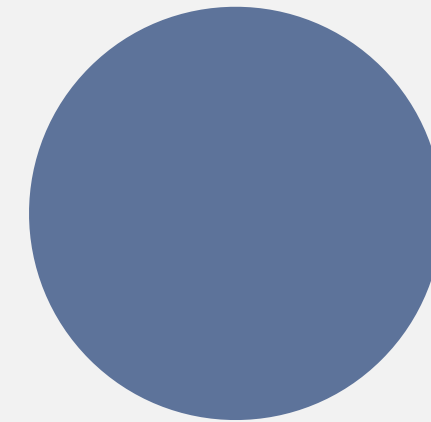
## Opportunistic



Get any ASN and any AS-Cone.

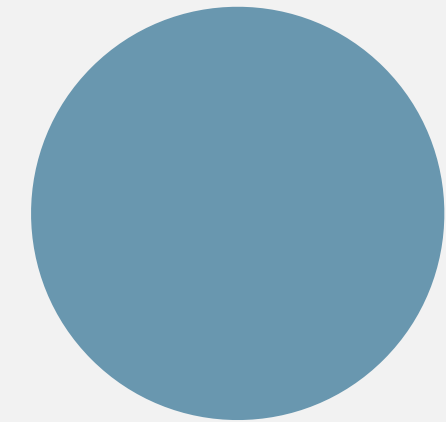
For the ASNs, only consider those where the “Validated” field is set to 1

## 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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