



## ROV adoption rate measurement

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# RPKI intro

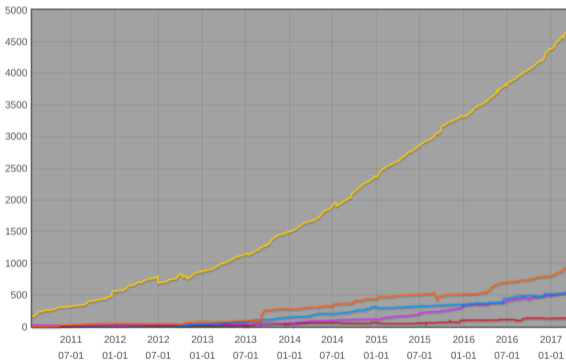
- ▶ Resource Public Key Infrastructure
- ▶ **Securing Internet routing**
- ▶ Opt-in
- ▶ Route Origin Authorizations (ROAs)
- ▶ Route Origin Validation (ROV)
- ▶ Hosted RPKI - RIRs



# ROA stats

Number of ROAs  AfriNIC  APNIC  ARIN  LACNIC  RIPE NCC

This graph shows the total number of valid Route Origin Authorisation (ROA) objects created by the holders of a certificate



Source: <http://certification-stats.ripe.net>



# ROV

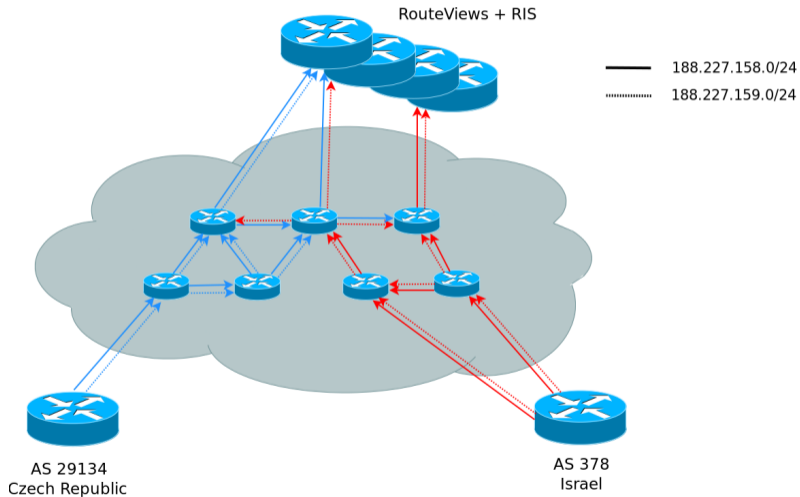
- ▶ Route Origin Validation
- ▶ Possible results are: Valid, Not-found, Invalid
- ▶ What to do with Valid?: Let them pass. Increase preference?
- ▶ What to do with Invalid?: De-prefer? Drop?

But there are questions:

- ▶ Are there autonomous systems that validate ROAs?
- ▶ What are the odds that an invalid route is discarded or de-preferred?



# The Experiment



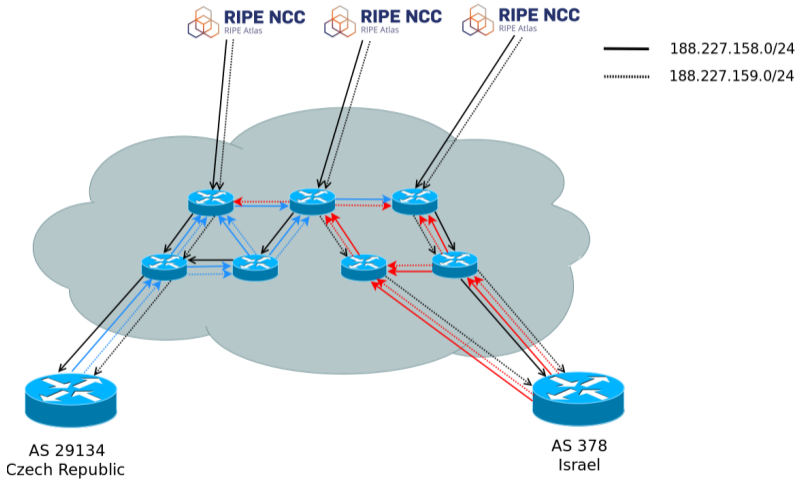
## The results



- ▶ Available paths towards the beacons: 373 (186+187)
- ▶ Path differences: 5
- ▶ ASNs with ROV-based route filtering:
  - ▶ 8 possibilities
  - ▶ 2 confirmed so far: AS3130, AS59715



# Use RIPE Atlas



## More results



- ▶ Probes utilized: 5397
- ▶ Identical paths: 5358 (99.2%)
- ▶ Path differences: 27 (0.5%)
- ▶ Inverted differences: 9
- ▶ ASNs with ROV-based route filtering:
  - ▶ 17 possible ASN
  - ▶ 6 likely: AS6057, AS8283, AS11815, AS46309, AS9304, AS8211
  - ▶ 3 confirmed so far: AS3130, AS59715, AS1200





Thank you!

Questions?

