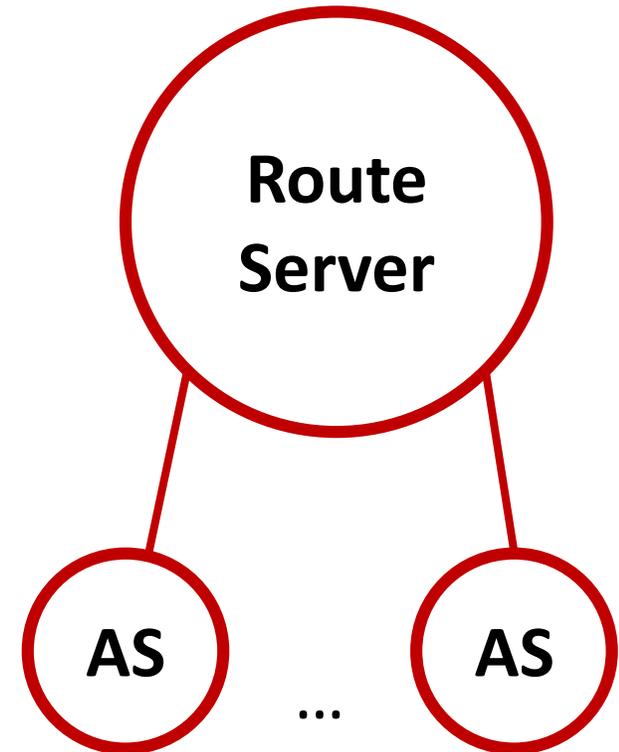
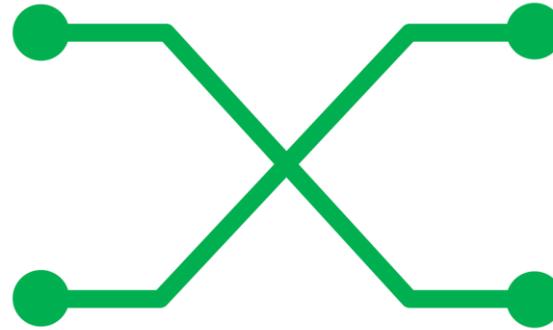


RPKI Deployment with IXPs

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Internet Exchange Points interconnect ...



The problem of outsourcing security?

- Route servers are vital at IXPs
- IXP members send BGP updates to route server
- Route server distributes BGP update to members

If you care about Internet security

1. Either you deploy route origin validation++ on your own
If you don't do, you cannot verify the route server stream ...
2. Or you trust the route server
Then you benefit from origin validation by route server

Four options how IXPs get (not) involved into RPKI

Do nothing

Provide
RPKI Cache

Tagging

Filtering

draft-ietf-sidrops-
route-server-rpki-light

Validation, tagging, and filtering of invalids – cool stuff!



Legacy route server (as of Oct 20, 2017)

757 v4 peers, 614 v6 peers

opt-out filtering

Falcon route server

201 v4 peers, 160 v6 peers

opt-in filtering



Route server

111 peers

filtering

Cache server, validation, tagging, and
opt-out filtering of invalids (to come) – cool stuff!



“Currently we only tag routes based on (IRR and) RPKI Validation, but we had a survey with our members and they voted to enable route filtering by default on ‘invalid ROA’ and ‘IRR not found’ states. We plan to deploy filtering by default by the end of the year.” [Arnaud Fenieux, 2017]

Validation, tagging



NAP Ecuador

Public caches @



Considering RPKI in the future



Thanks!

Randy Bush, Arnaud Fenioux, Aris Lambrianidis, Carlos Marcelo
Martinez Cagnazzo, Tim Bruijnzeels, ...

November 14, 2017:

One more RPKI implementation available

RPKI Prefix Origin Validation
merged into FRR master branch,
based on RTRlib, more see
<https://rtrlib.realmv6.org/>
<https://github.com/FRRouting/frr/>