RPKI MIRO: Monitoring and Inspection of RPKI Objects

Andreas Reuter  Matthias Währisch  Thomas Schmidt

Freie Universität Berlin

andreas.reuter@fu-berlin.de  m.waehlisch@fu-berlin.de
schmidt@informatik.haw-hamburg.de

sidr@IETF93

July 24, 2015
### Motivation

#### Monitoring

- Detects infrastructure problems
- Detects misconfiguration
- Detects misbehaving RPKI authorities
- Increases trust in RPKI

#### Existing tools

- Not tailored specifically towards distributed monitoring
- Offer limited inspection of non-ROA objects
RPKI MIRO: Monitoring and Inspection of RPKI Objects

Two components

- Validator: Easy to use, CLI interface, allows distributed monitoring
- Browser: GUI based web application, allows detailed inspection of RPKI objects

Increased transparency for CA’s and RPKI users
Validator

# timestamp
# objects
# valid
# invalid
# errors
# warnings

Export
.json, SQL db, Java Object
rpsl, csv, ...

Fetching → Validation → Statistics → Export

Trust Anchor
Browser

RPKI Repository Browser

Certificate

Validation: PASSED
Status: Valid
Errors: None
Warnings: None
Subject: CN=ripe-ncc-ta
SKI: E8552B1F0D1A4F7E404C0D8E568001EBC163FC3
Issuer: CN=ripe-ncc-ta
AKI: None
SerialNbr: 130
Filename: ripe-ncc-ta.cer
Location: rsync://rpki.realmv6.org/ripe-ncc-ta.cer
EE: true
CA: true
TA: true

Public Key: Sun RSA public key, 2048 bits
modulus: 26417507841944242023527534996358018749945254465391
0511479452302959240212737092620202221474514889609908659247
32806945016677640541986593069727230714421279466031341685
166409002087950160233703787867831315060569072921211992
57827117574668036446454787057915902534590123376765292900395820
3280184532123479566389125746205756765781591909716232
6274886728296134060659925754413131544488539192704599
public exponent: 65537

ASID download
Current state

- View .cer and .roa in tree structure, .mft and .crl coupled to resource certificate
- Filter for specific objects
- View basic statistics

Possible future work

- Aggregate Views: Hosted vs. delegated, visualized prefix map, ...
- User configurable event-based alarms
- More meaningful object names in tree-view

What would you like to see?
## Find out more

- Code is on github: [https://github.com/rpki-miro](https://github.com/rpki-miro)
- MIT licensed

## Feedback

- Any feedback is highly appreciated
- After session, or to [andreas.reuter@fu-berlin.de](mailto:andreas.reuter@fu-berlin.de)