



RIPE NCC

RIPE NETWORK COORDINATION CENTRE

RIPE NCC RPKI Update Q4

Ties de Kock | RIPE 83 | 23 November 2021

RPKI Roadmap Q4 2021



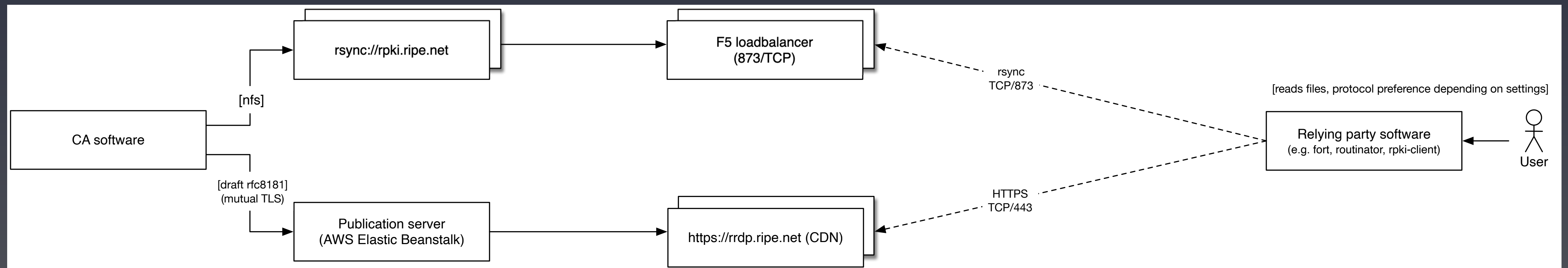
- Penetration test report
- Source code review report
- New Hardware Security Module (HSM)
- Scaling up the RPKI repositories
- Monitoring and alerting

Scaling up the RPKI repositories



Previous deployment:

- Single instance on AWS Elastic Beanstalk
- Publish to this single instance from CA software
- Relying parties fetch the full repository after a restart

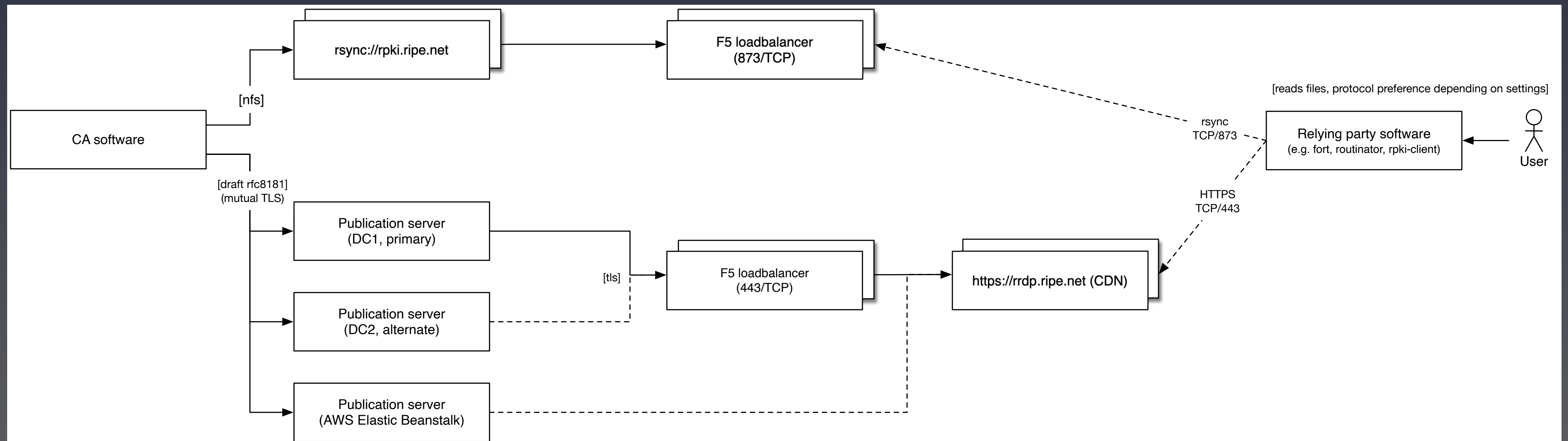


Scaling up the RPKI repositories



Current deployment:

- Publication to multiple publication server instances
- Redundant on-premise RRDP repository
- AWS environment available as warm standby



Monitoring and alerting



- Priorities:
 - P1/P2: 24/7 paging
 - P3/P4: chat channel
- Alerting channels:
 - Notification, followed by SMS, followed by call unless acknowledged
 - Chat channel
- Alerts:
 - 46 P1, 36 P2, 25 P3, 21 P4 alerts defined
 - Many triggers do not occur, not even in historic data
 - Continuous process: adjust priority or alert after false positives/negatives

Example alerts






 Alertmanager BOT 11:01



[FIRING: 1] RpkIClientObjectWarning (P1, [REDACTED])

 Graph

```
rpki-client found 2 expired_manifest errors (30m) in rpki-[REDACTED]
rpki-client found 2 sustained expired_manifest errors for object in rpki-[REDACTED]
from [REDACTED] rpki_client (30m).
rpki-client found 2 expired_manifest errors (30m) in rpki-[REDACTED]
rpki-client found 2 sustained expired_manifest errors for object in rpki-[REDACTED]
from [REDACTED] rpki_client_rrdp (30m).
```

[^ Show less](#)

13:57   

 
+1 (844) 234-6449 >

Text Message
Yesterday 17:17

[Prometheus]: [FIRING:1]
RoutinatorDropInROAsComparedTo
24H production P1
([REDACTED]).ripe.net:rout <https://eu.opsg.in/a/t/ripenc/> [REDACTED]

Metrics



Areas:

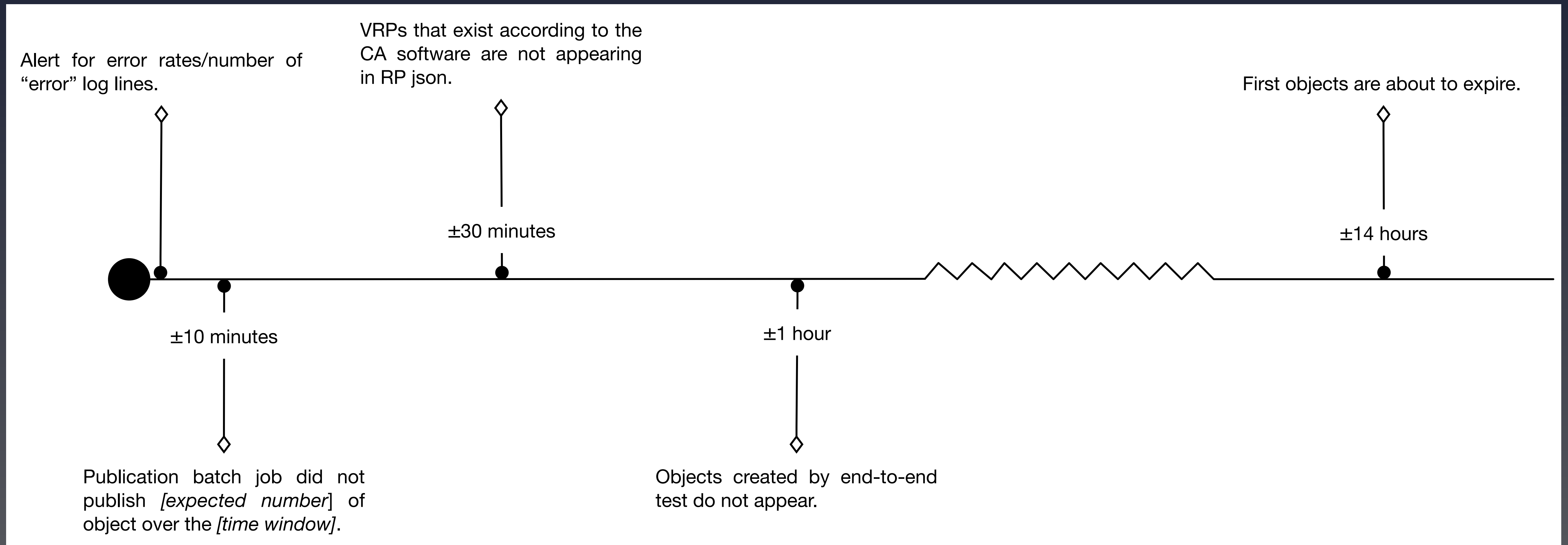
- Certification Authority (CA) software
- Repository content
- Results

Methods:

- In-application metrics
- External monitoring tools:
 - Testbed with validators
 - Specific monitoring tools
- Smoke and end-to-end tests

Applied to both the staging and production environment

Case study: CA software stops working





Questions



For further information
(security reports, roadmaps, etc):

ripe.net/rpki