Challenges and Lessons Learned in deploying RFC6492, 8181 and 8183

Provisioning, Publication, ID key exchanges

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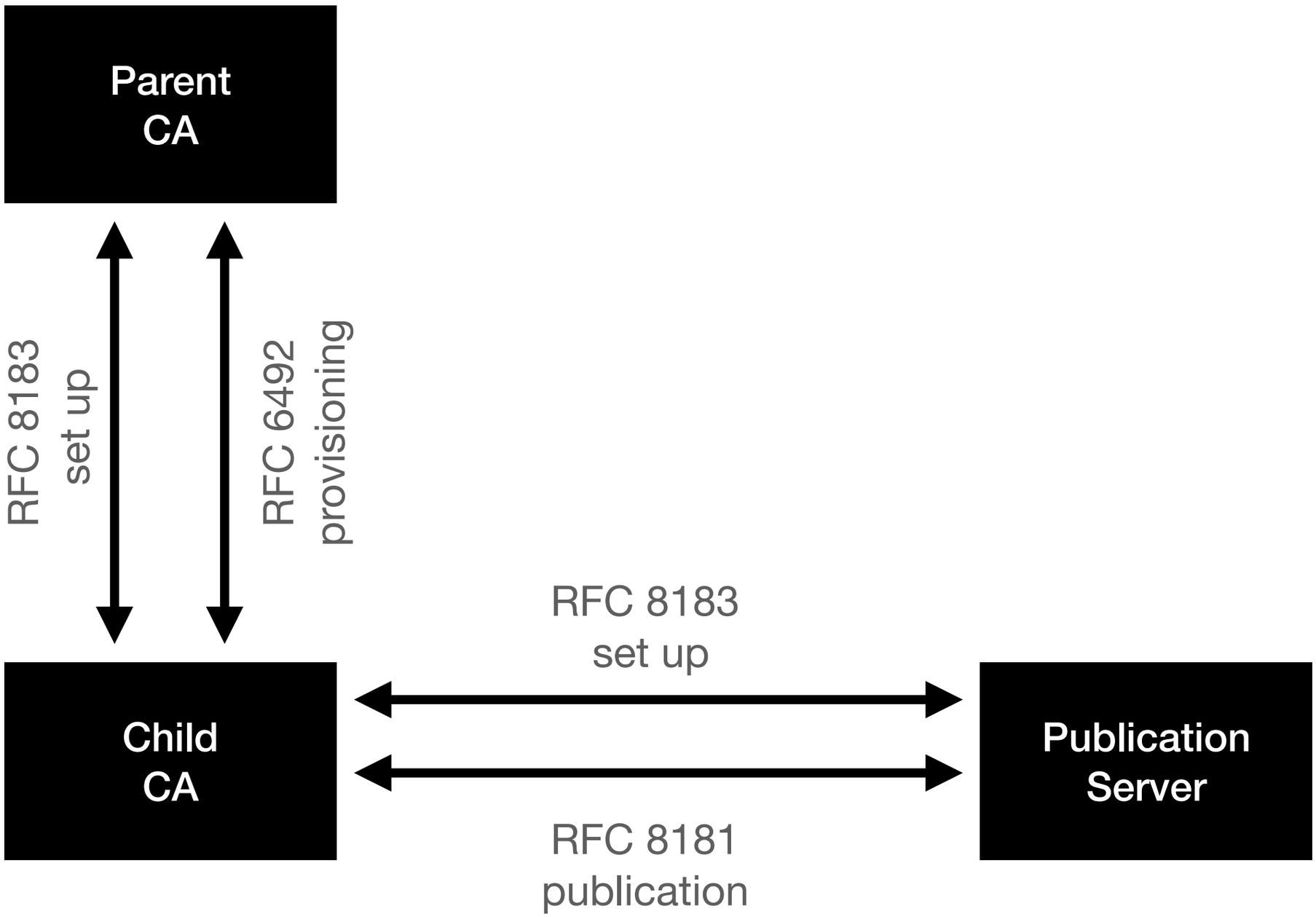
Before we start...

- Thank you for RFC 6492, 8181 and 8183!
- At least 6 CA implementations, 1000+ instances
- At least 4 Publication Server implementations, 50+ instances

Before we start...



Anything Missing?

After a few years of implementation and operational experience..

- Some things are missing
- Other things can be improved
- Urgency varies

General Protocol - Messages

- Interop issues because of loose Cert / CMS specs
- Replay protection can be improved
- Identity Key roll at scale (>1000 delegated child CAs)
- Signing Algorithm for messages roll?

General Protocol - Control

- Error messages
- Rate limiting
- Other?

Publication Protocol

- Server side content verification?
    - Types?
    - Syntax?
    - Consistency (manifest, crl, all objects?)
    - Consider the risk of server errors..
- Quota
- Server notifications? Re-sync?

Provisioning Protocol

- Resources safe to use?
  - When will my certificate with new resources be published?
  - When will a resource be removed?
    - Server notification push?
- Algorithm Agility? (RFC 6916)
  - Separate trees? How does a child know?
- Other?

Requirements

- Graceful protocol negotiation
- No flag day, but allow new / extended where supported
- Stay close to current protocol where possible
- One new version with many fixes?
- Or support incremental features?
- Other?

Proposal

- Write document and ask for adoption. Focus:
  - problem statement
  - requirements
  - priorities

- Explore solutions for most urgent issue(s): ID key rolls and possibly message replay

draft-timbru-sidrops-rpki-publication-v2-00 is not that document..