draft-ietf-stir-certificates-ocsp
draft-peterson-stir-ocsp-staple
draft-peterson-stir-certs-shortlived
(etc)

IETF 116 (Yokohama)

STIR WG

Jon
Freshness for STIR certs

• Freshness is different for STIR certs than regular PKI certs
  – This is due to TNAuthList
    • Not so much for SPCs, really, but for TNs
  – The problem is the inherent dynamism of number assignment
    • Relying parties want to know if a cert is still valid for a number right now

• We’re looking at a couple of approaches
  – OCSP and short-lived certs seem to be favored
  – But there are a lot of subvariants here...
Jack Richard’s Summary

• Options in play
  – Existing by-ref using the AIA extension
    • Already documented in RFC8226
  – OCSP without stapling
    • draft-ietf-stir-certificates-ocsp
  – OCSP with stapling
    • draft-peterson-stir-ocsp-staple
  – Short-lived without stapling
    • draft-peterson-stir-certs-shortlived (expired)
  – Short-lived certs with “stapling”
    • As yet not really documented (more in a moment)
Why so many?

• All of these have very similar properties, with fairly minor trade-offs between them
  – Mostly about how cacheable certs are, and whether you pay the cost for freshness on the originating or terminating side
• Some work more “out of the box” than others
  – RFC8226 AIA works for some use cases
  – We’re extending OCSP (for single TN queries)
    • And then extending PASSporT to carry the staple
  – Short lived works with no extension provided you don’t mind the latency/caching problem
    • “Stapling” would entail pushing the cert and its chain, making PASSporTs bigger, but making caching largely irrelevant
• Narrowing down to a single solution still seems premature (to me)
Stapling – for more than OCSP?

• Current draft defines a way to carry an OCSP staple in the PASSporT
  – New “stpl” element in PASSporT payload
  – Alternative would be a separate SIP header, but:
    • Then you need a correlation function for multiple PASSporTs
    • And what about out of band?

• Jack has argued to extend this idea to short-lived
  – Basically, push the short-lived cert, potentially even for a single TN, in/with the PASSporT
Discussion

• (we need more)
Next steps

• (If not overcome by events in discussion)
• My proposal:
  – Advance OCSP baseline (it’s close to done)
    • I understand some other SDOs are incorporating it
  – Adopt/advance shortlived draft
    • Probably downplay ACME – delegate certs will come from various
  – Generalize stapling draft to apply to more than just OCSP
    • For shortlived, potentially via x5c and some way to carry certs