26 July 2024

IETF 120 ACME Session

This session is being recorded

Internet Engineering Task Force

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Note Well

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Definitive information is in the documents listed below and other IETF BCPs. For advice, please talk to WG chairs or ADs:

- BCP 9 (Internet Standards Process)
- BCP 25 (Working Group processes)
- BCP 25 (Anti-Harassment Procedures)
- BCP 54 (Code of Conduct)
- BCP 78 (Copyright)
- BCP 79 (Patents, Participation)
- https://www.ietf.org/privacy-policy/(Privacy Policy)

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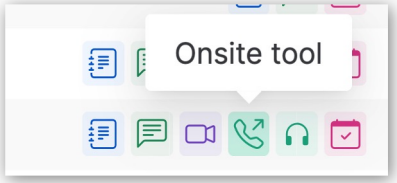
IETF 120 Meeting Tips

In-person participants

- Make sure to sign into the session via Datatracker or the QR Code in this session.
- Use Meetecho (usually the “Meetecho lite”) client to:
  - join the mic queue
  - participate in shows of hands
- *Keep audio and video off if not using the onsite version.*



Remote participants

- Make sure your audio and video are off unless you are chairing or presenting during a session.
- Use of a headset is strongly recommended.

Resources for IETF 120 Vancouver

- Agenda
  https://datatracker.ietf.org/meeting/agenda
- Meetecho and other information:
  https://www.ietf.org/how/meetings/preparation
- If you need technical assistance, see the Reporting Issues page:
  http://www.ietf.org/how/meetings/issues/

Agenda

Agenda

- Technical difficulties, Agenda bashing, etc – 5 minutes
- Document Status – Chairs – 10 minutes

- DTN Node ID Validation – Sipos – 15 minutes
- ACME Renewal Information – Gable – 15 minutes
- ACME Profiles – Gable – 15 minutes

Document Status

Document Status (1/3)

- No new RFCs since September ☹️
- ACME Renewal Information
  - Version -04 published at the end of May
  - Have presentation in this session

Document Status (2/3)

- ACME DTN Node ID
  - No new version since IETF 119
  - Has been stuck for ages waiting for dtn-bpv7-admin-iana
  - We may have good news on that…

- ACME Onion – no new version since before IETF 119
- ACME Device Attest – no new version since before IETF 119
- ACME Scoped DNS Challenges - ditto

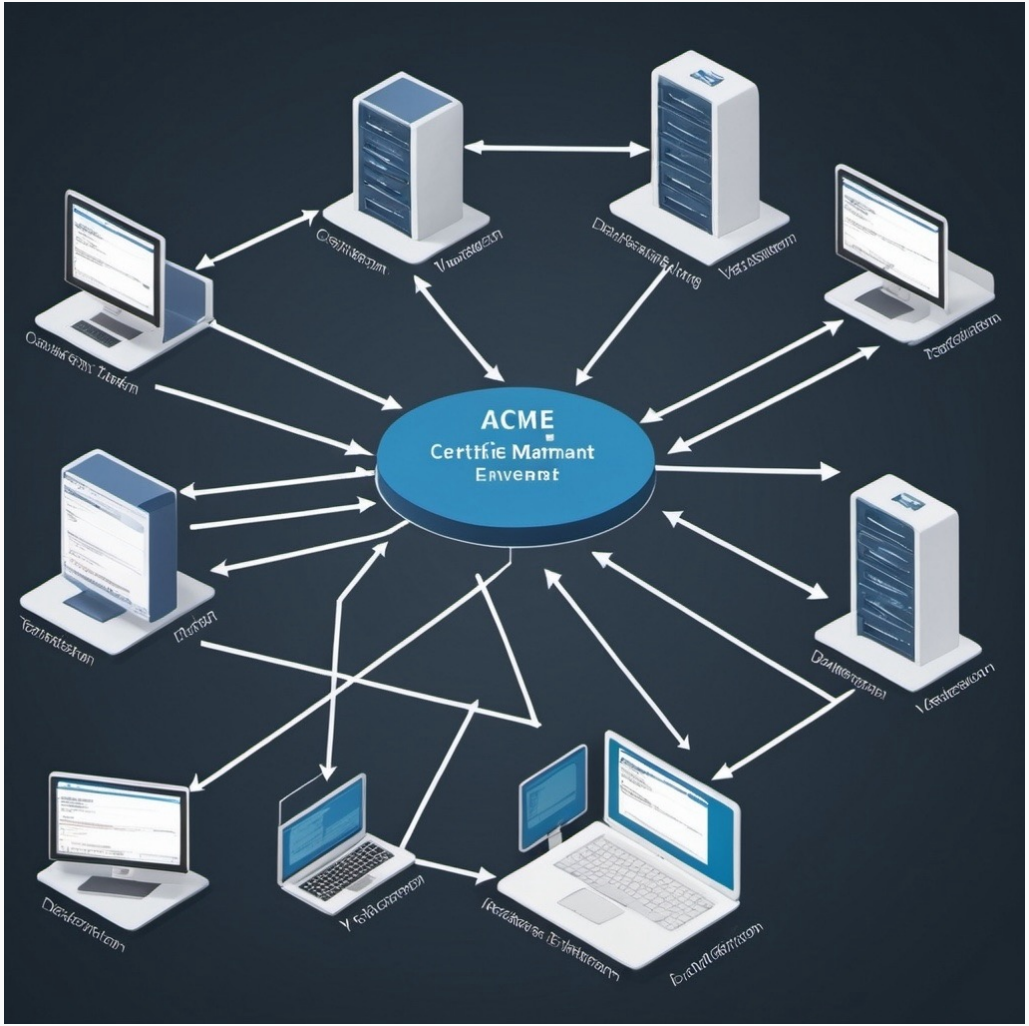
Document Status (3/3)

- ACME Integrations
  - Has been in the RFC Editor queue for 377 days.
  - Waiting for draft-ietf-anima-brski-cloud
    - In state **AD Evaluation::Revised I-D Needed** for 189 days.
  - Waiting for draft-ietf-lamps-rfc7030-csrattrs
    - In state **Revised I-D Needed - Issue raised by WGLC** for 16 days.
  - Some common authors on these three documents.
- ACME-Client hasn't been updated in a year – dead?

Presentations w/o slides

ACME - DTN Node Id

- Brian Sipos



Presentations with slides

ACME Renewal Information

draft-ietf-acme-ari-04

Aaron Gable, Let’s Encrypt
IETF 120, 2024-07-26

Since IETF 119

- Draft -04 published as described at IETF 119
- No changes since then

- 10+ client implementations
  - lego, tailscale, certify the web, caddy, certmagic, acmez, eggsampler, acme4j, win-acme, ansible, acmecert, posh-acme
- 3+ server implementations
  - 2+ more promised in Bugzilla incident reports

Open Questions

- Servers reject new-order requests for many reasons.
- Should “because you specified a predecessor which is already replaced” be uniquely recognizable?

- Working Group Last Call?

Proposal: ACME Profiles

draft-aaron-acme-profiles-00 eventually

Aaron Gable, Let’s Encrypt
IETF 120, 2024-07-26

The Problem

- new-order has few knobs:
  - `notBefore`
  - `notAfter`
  - `identifiers`
- finalize CSR is unwieldy
  - Too late
  - Too untrusted
  - Too fine-grained
  - Difficult for clients to manipulate

The Solution

- “Profiles” – CA-curated collections of certificate attributes

- Pros:
  - Simple for clients to implement
  - Simple for site operators to configure

- Cons:
  - No dynamic profile negotiation

Concrete Proposal

- Augment the directory:

```
GET /directory HTTP/1.1

{
  "newAccount": "https://api.example.ca/acme/new-account",
  "meta": {
    "profiles": {
      "legacy": "The same profile you know and love",
      "modern": "https://example.ca/profiles#tls-server"
    }
  },
  ...,
}
```

Concrete Proposal

- Augment the order object:

```
POST /acme/new-order HTTP/1.1

{
  "protected": base64url(...),
  "payload": base64url({
    "profile": "modern",
    "identifiers": [{"type": "dns", "value": "example.org"}],
  }),
  "signature": "H6ZXtGjTZyUnPeKn...wEA4TklBdh3e454g"
}
```

Status

- Already implemented by Let's Encrypt / Boulder
- Profile controls:
  - Validity period
  - Inclusion of Common Name
  - Inclusion of Subject Key ID
  - Inclusion of TLS Client Auth EKU
  - Inclusion of keyEncipherment KU (for RSA certs)
- Next steps:
  - Control lifetime of ACME order / authorization objects
  - Client implementations
  - Standardization

AOB