

Managing AnonCreds

with CHAPI & VC-API

2023-05-30

Digital Identity

LABORATORY



LABORATOIRE

d'identité numérique

Technologies used

- [did:web method](#)
- [did:web AnonCreds method](#)
- [anoncreds-rs library](#)
- [AnonCreds specification](#)
- [CL Signature suite](#)
- [Uniresolver utility](#)
- [CHAPI protocol](#)
- [anoncreds-w3c-mapping utility](#)
- [VC Data Model standard](#)
- [VC-API specification](#)
- [VP Request specification](#)

But why?

Interoperability is a key factor in building a digital ID ecosystem. Demonstrating interoperability between different frameworks is a great way to attest that these frameworks are of great design.

This demonstration will showcase the adaptive design of the W3C VC Data Model and the modularity/portability of the new AnonCreds library.

Some terminology

Issue: The action of an issuer cryptographically signing a credential

Derive: The action of a holder selecting claims across multiple credentials to join in a presentation

Present: The action of a holder responding to a presentation request with a derived presentation

Verify: The action of a verifier validating the proofs attached to a set of presented claims

What is CHAPI?

The CHAPI (Credential Handler API) is a browser API aimed at handling credentials within a browser across multiple origins. In this demonstration, we will use CHAPI to select and communicate with our browser wallet to store and present credentials.

- <https://w3c-ccg.github.io/credential-handler-api/>

What is the VC-API?

The VC-API (Verifiable Credential API) is a specification aimed at managing Verifiable Credential's lifecycle through a set of API definitions. In this demonstration, we will use the VC-API spec to issue, derive and verify credentials & presentations leveraging the anoncreds-rs library.

- <https://w3c-ccg.github.io/vc-api/>

The DID:WEB method

Using the uniresolver, we will explore how to use the did:web method to publish our AnonCreds objects.

- <https://w3c-ccg.github.io/did-method-web/>
- <https://dev.uniresolver.io/>
- <https://hyperledger.github.io/anoncreds-methods-registry/#didweb-anoncreds-method>

AnonCreds <-> VC

The magic behind this is a back and forth mapping between the AnonCreds Credential Data Model and the w3c Verifiable Credential Data Model. We can see the VC as a vehicle to carry the required data and proofs to present and verify claims with the anoncreds-rs library.

- <https://github.com/andrewwhitehead/anoncreds-w3c-mapping>
- <https://github.com/hyperledger/anoncreds-rs>

