Open and federated identities with ID4me

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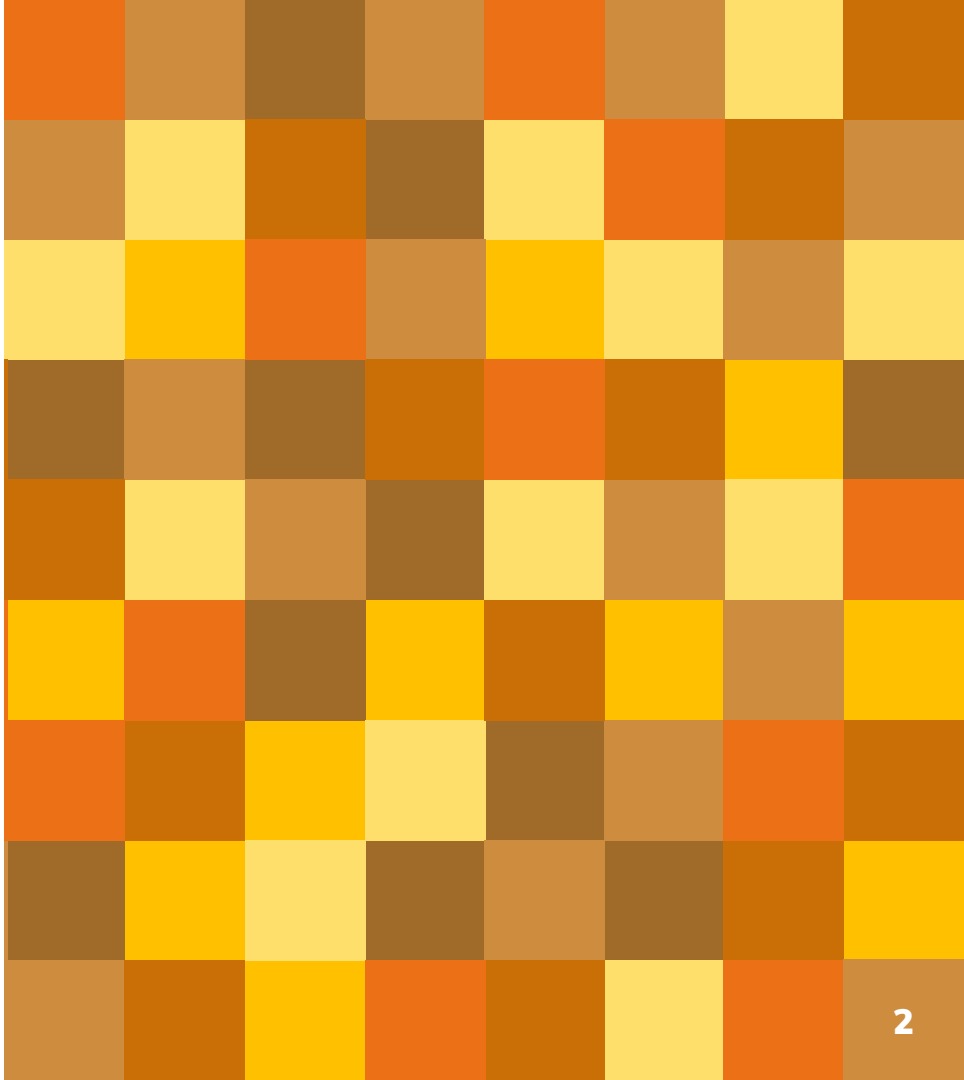
1.

The problem



Our online identity, today

The big Internet platforms already create an «online identity» for us

They track us across multiple services and sell us for targeted advertising

Meanwhile, we are stuck with a thousand accounts

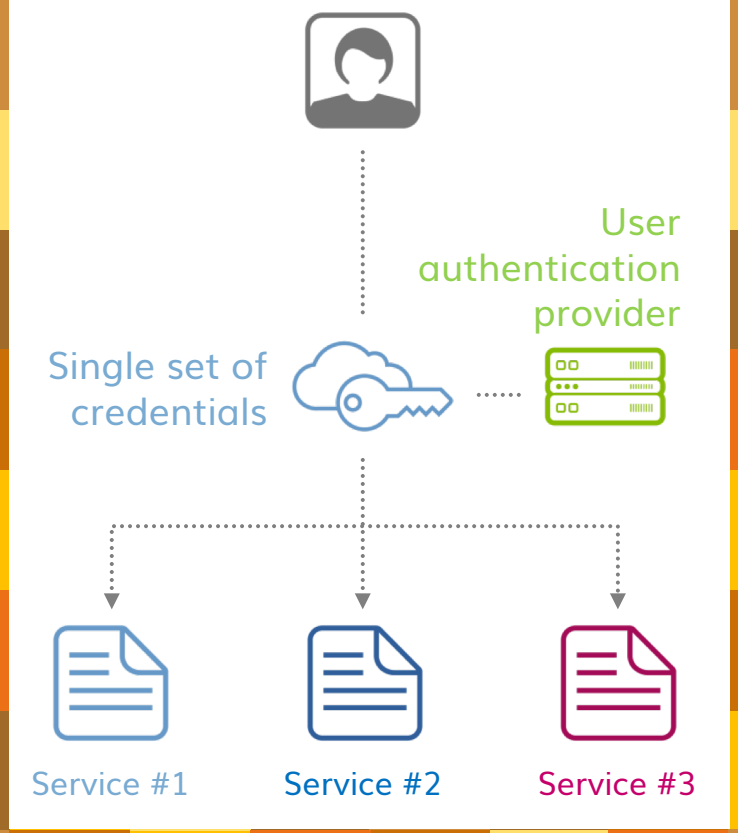
- Insecure, inconvenient etc.

The solution: Single sign-on

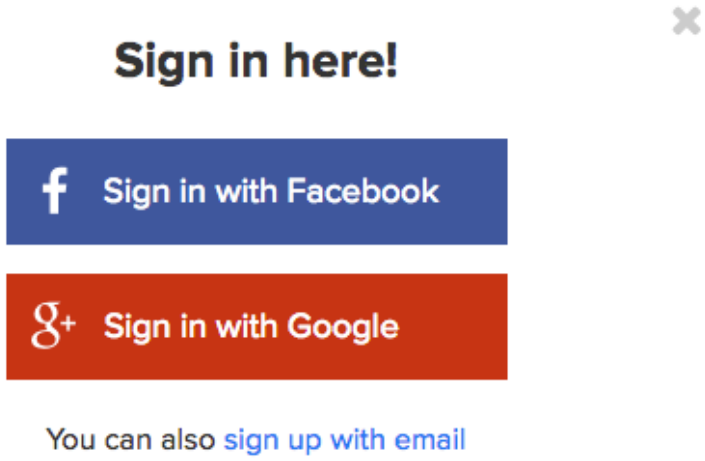
SSO = A single set of credentials that can be used on all existing online services

Requires an online service acting as user authentication provider

(must be trusted by everyone)



But of course, the big OTTs already thought of this!



Proprietary SSO gaining ground

Very convenient and ubiquitous

Average Internet users like it a lot

But

No interoperability + fragmentation => concentration

Clients have to implement each of them

Users cannot choose their provider

Makes tracking straightforward

GRAND HOTEL
TRENTO

Accedi gratuitamente, con uno dei tuoi profili social. Se non ne possiedi uno, scorri la pagina fino in fondo ed usa il pulsante "Registrati"

Facebook Login

Google+ Login

Twitter Login

Instagram Login

Yahoo! Login

Linkedin Login

Foursquare Login

Windows Live Login

*We need **openness** and **federation!***

Advantages of SSO

- You only need to remember and secure one set of credentials
- Any additional security mechanisms can be implemented just once by a specialized party
- You can have an easy way to control the sharing of your information and keep it updated
- You don't need to register for new websites, just identify yourself

Advantages of public federated SSO

- Why can't your online identity work like your email address?
- You only need one account to interoperate with everyone
- You get to choose and even change your provider (possibly one that does not sell you out)
- You can keep your identifier if you buy a piece of the namespace

*But **federation** needs a*
discovery mechanism…

What do we miss?

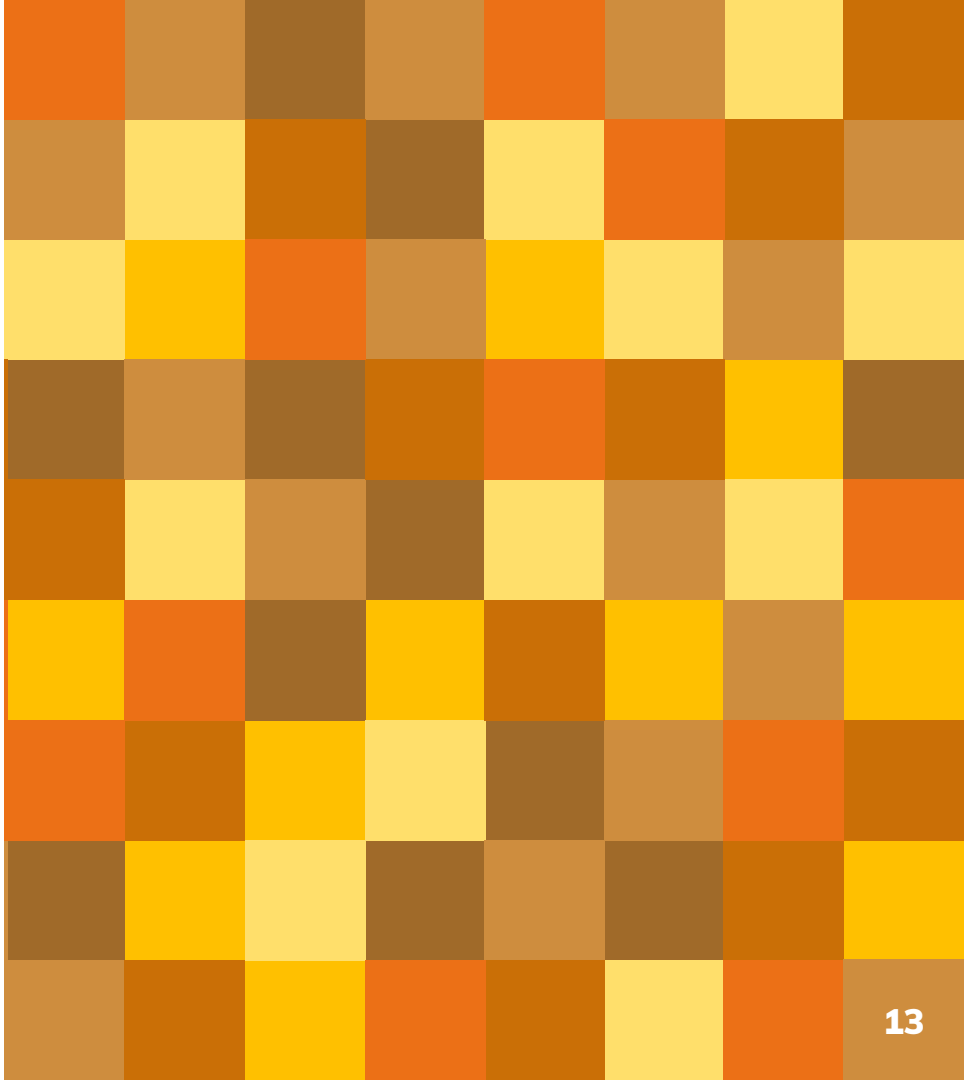
We already have federated identity management and authorization protocols

- OpenID Connect / Oauth 2.0
- Though not normally deployed in a truly federated way (at most, used for a federation with a single identity provider)

We miss a place to keep the directory of all existing identities, and a protocol for looking identities up into it

2.

Where do we keep a public directory for identities?



Why not standard OpenID Connect?

OpenID Connect already has an optional discovery mechanism

- It is based on WebFinger, which is based on HTTPS
- Only accepts URIs as identifiers, with email addresses as a special case

But it requires you to deploy a web server and a WebPKI certificate on each and every domain that you want to use for identifiers

Why not blockchain?

We want to be (and we are) blockchain-ready

However, we wanted something that is:

- easily available to any developer and user
- immediately deployable on a mass scale

Otherwise:

- it will be too late to compete with Facebook etc.
- too few people will be able to develop applications and services

It's the DNS!

Why the DNS?

It is an open, public standard with many free implementations

It is widely available to everyone everywhere

It has been working reliably for 30+ years

It is secure (with DNSSEC)

It can scale effectively to any amount of traffic

It is regulated to prevent capture

It is decentralized and federated

The DNS provides the namespace

In the real world, people use «natural» names which are neither unique nor uniform nor easily parsable

So you need a namespace to name identities uniquely on a global scale, while distributing its management… but it's the same problem that was already solved for host names 35 years ago

The DNS provides the namespace (2)

- Using the DNS, you can assign human-readable identifiers to identities in a naturally federated namespace
- Users are already familiar with DNS-like strings
- You can even use email addresses if you wish
- Or you can encourage people to get their personal domain name and own a piece of the namespace

The DNS provides the discovery scheme

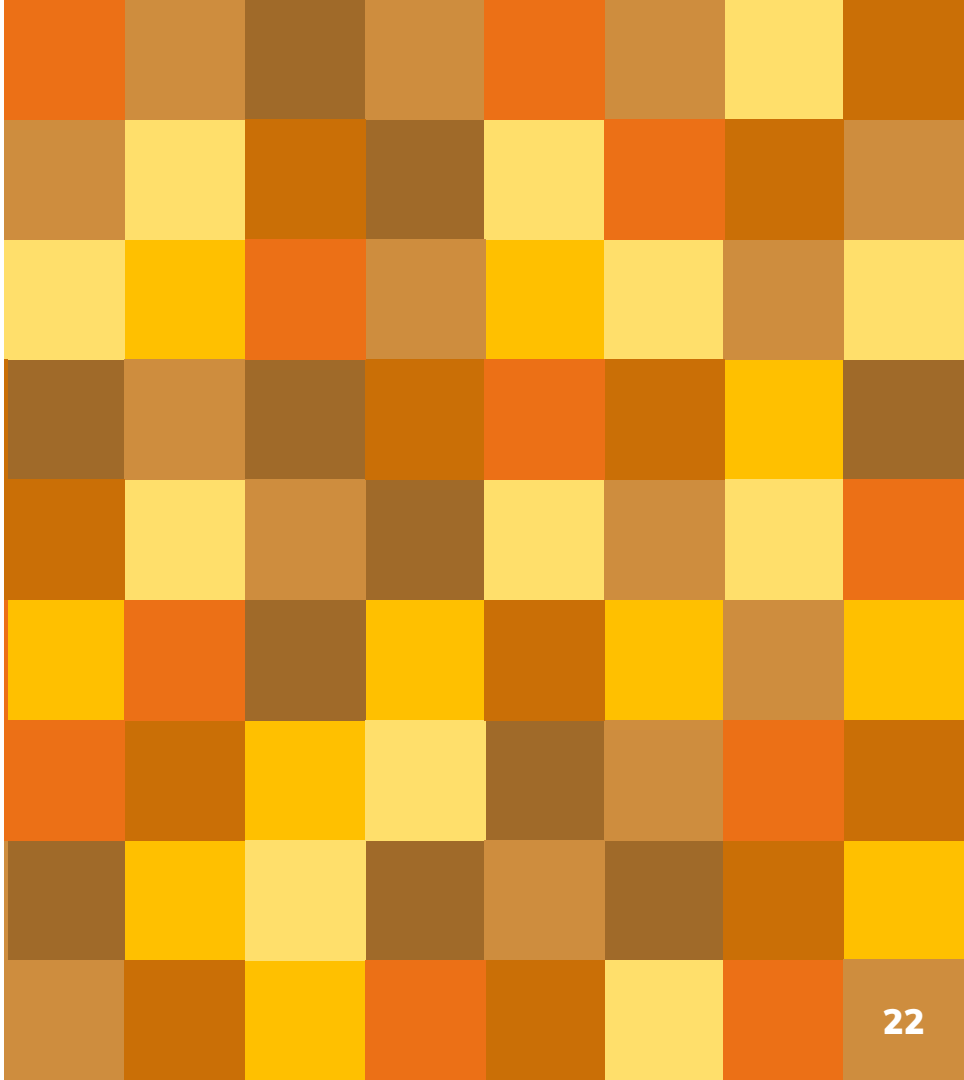
- We just need a pointer to know who is responsible for an identifier
- Again, same problem already solved for email 35 years ago
- We use a TXT record, rather than a new RRtype
  - So we are not adding straw onto the camel's back
- Two Internet drafts independently submitted

<identifier> = *any valid hostname*
in a domain that you control

_openid.<identifier>
TXT
v=OID1;iss=<issuer>;clp=<claims_provider>

3.

The ID4me project

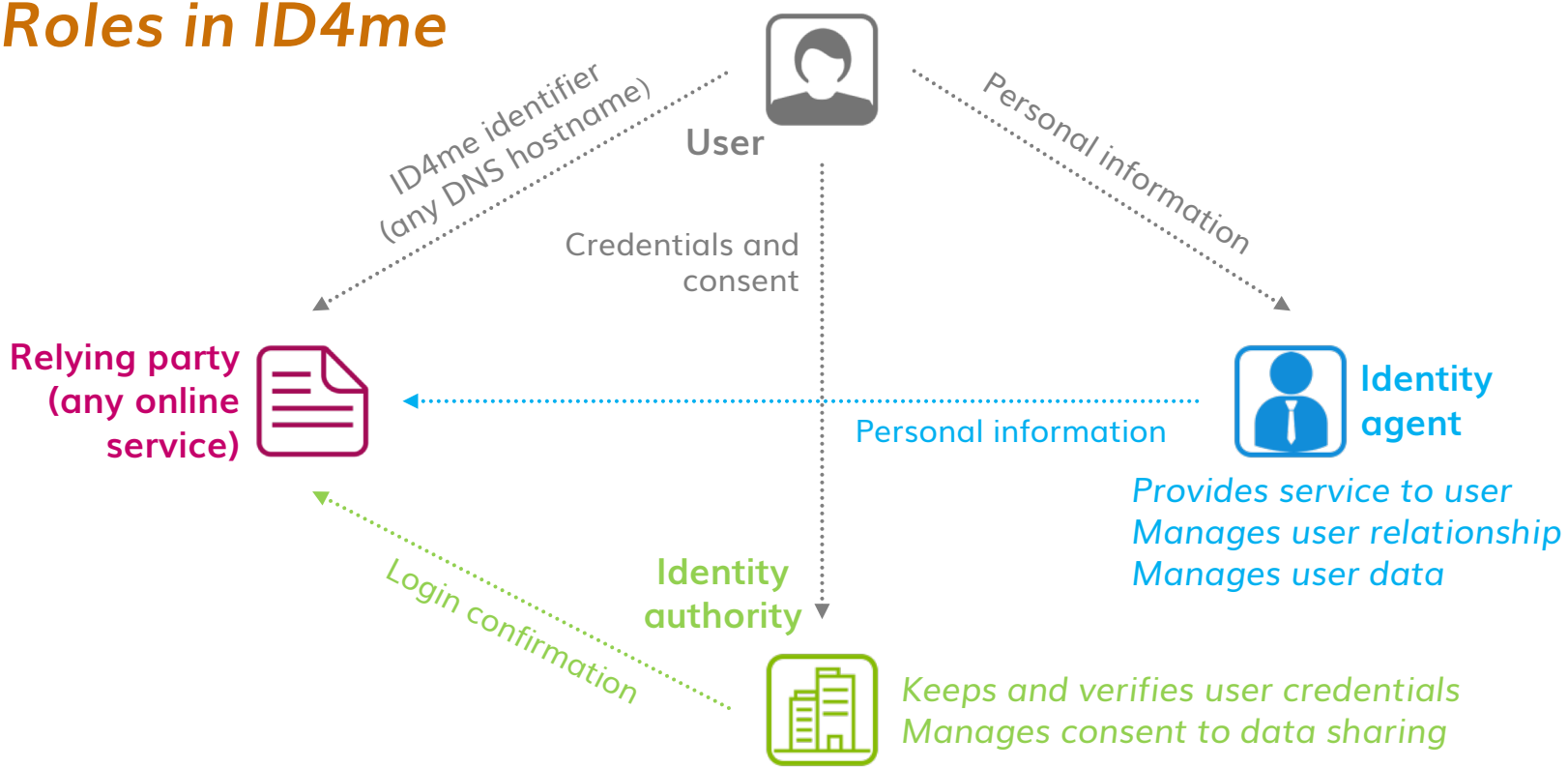


ID4me

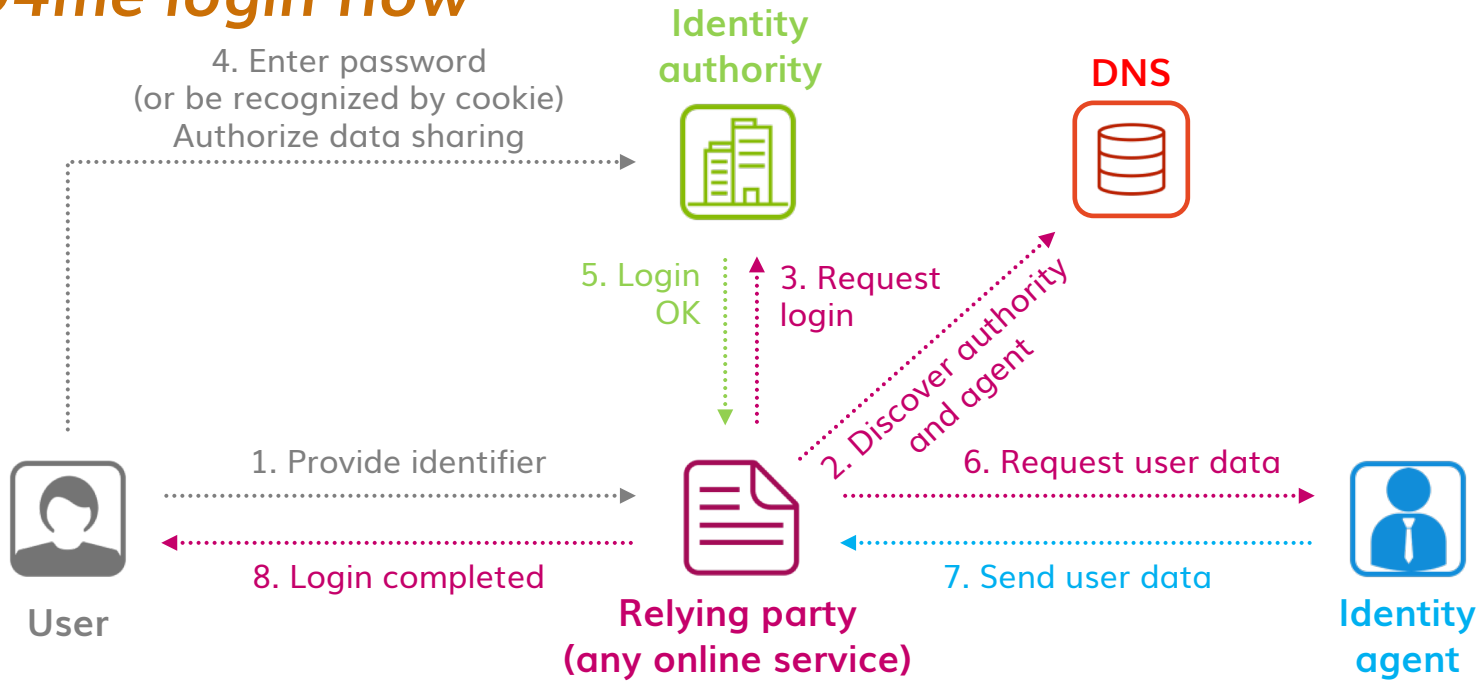
A set of open, patent-free standards

A non-profit consortium for promotion

Roles in ID4me



ID4me login flow



Status

- Website, public specifications, APIs released
- Several testbeds up and running
- Several authentication plugins available
- First ID4me service (Denic ID) being launched
- Optional verified identities under development
- Started up the international non-profit
  - 27 members and counting

Coming next

- Cloudfest Hackathon project to develop a free «server» (agent + authority) implementation
- Standard extensions to provide and manage «strong», verified identities
- A public directory for operator reputation
  - A problem for every federation…

https://id4me.org/

Information, specs, code…

Thanks!

Any questions?

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