ENS Cross Chain Integration Strategy

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Devcon Bogota
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My Name is ...

- https://matoken.eth.limo
- https://matoken.eth.link
- https://matoken.eth.xyz
- https://opensea.io/matoken.eth
- https://etherscan.io/address/matoken.eth
- https://app.poap.xyz/scan/matoken.eth
01. Cross chain examples in the wild
02. Under the hood
03. What’s next
1. Cross chain examples in the wild
You claimed your username!

inouemakoto.cb.id

Add profile details

Done
cb.id

You claimed your username!

Add profile details

Done
cb.id

You claimed your username!

inouemakoto.cb.id

Add profile details

Done

inouemakoto.cb.id

Dev at ENS

matoken.eth.limo

makoto@ens.domains

0 Followers 0 Following

Manage profile Details

Crypto NFTs Activity

Your wallet is empty

Assets Transactions Community Settings
Get a Free Subdomain Name

Register a free ENS Subdomain on Optimism L2 and use it everywhere including L1 Ethereum.

Search: ecc.eth

FREE
Mint Price

Register →
With EIP3668, you can already move storage off-chain today. While it isn’t fully trustless, it scales extremely well.

For example, you could create an infinite number of `@ensdomains` for free.

You can even use `@googlesheets` as your source-of-truth.

ENS but all the data is stored on Google Sheets.
Integrated libraries, apps and wallets

- ethers.js (v5.6.2)
- web3.py (v6)
- web3j (v4.9.3)
- wagmi
- useDapp
What’s common across these examples?

- Storage Agnostic (DBMS, Polygon, Optimism, etc) = No or little gas fee
- Names available on L1 = No need to switch networks to lookup names
- Trust NOT minimised
2. Under the hood (CCIP-read + Wildcard)

https://docs.ens.domains/dapp-developer-guide/ens-l2-offchain
ENS Architecture recap

- 2 requests model
- Swappabe resolver
CCIP-read (EIP 3668)
Secure Offchain data retrieval

- 3 request model
  - Revert, Request, Verify
CCIP-read
Step 1: Revert

```
function resolve(bytes calldata name, bytes calldata data) external override view returns(bytes memory)
    bytes memory callData = abi.encodeWithSelector(IResolverService.resolve.selector, name, data);
    string[] memory urls = new string[](1);
    urls[0] = url:
    revert OffchainLookup(
        address(this),
        urls,
        callData,
        OffchainResolver.resolveWithProof.selector,
        callData
    );
```
CCIP-read
Step 2: Request

- @chainlink/ccip-read-server
- query
- construct a proof
CCIP-read

Step 3: Verify

function resolveWithProof(bytes calldata response, bytes calldata extraData) external view returns(bytes memory result) {
    (address signer, bytes memory result) = SignatureVerifier.verify(extraData, response);
    require(
        signers[signer],
        "SignatureVerifier: Invalid signature");
    return result;
}
Wildcard Resolution (ENSIP 10)
For issuing subdomains

L2/Offchain

- .eth
- .matoken.eth
- *.matoken.eth

resolve("a.matoken.eth")
resolve("a.matoken.eth")
Considerations

- No Onchain events (for subdomains and records)
- Must protect signing keys
- Must host own gateway service
Ready to try?
https://github.com/ensdomains/offchain-resolver
3. What’s next?
Where we are right now

- [✔] Off chain data retrieval
- [✔] Basic libraries and wallets integrated
- [ ] Cross chain data deferral
- [ ] Trust minimised resolver
- [ ] ENS L2 Canonical registry
CCWDP (EIP-5559)

This EIP is not recommended for general use or implementation as it is likely to change.

EIP-5559: Cross Chain Write Deferral Protocol

The cross chain write deferral protocol provides a mechanism to defer the storage & resolution of mutations to off-chain handlers

<table>
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<th>Paul Gauvreau, Nick Johnson</th>
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Trust Minimised Resolver \(\Rightarrow\) Rollups

- Batch write L2 data to L1
- L2 State Verifiable on L1
  - Fraud Proof
  - Validity Proof
- Storage Validation
  - With Merkle Tree
L2 Resolver on Optimism Demo
https://youtu.be/9DdL7AQgXTM
ENS L2 Canonical registry and bridge

- Subdomain ENS NFT on L2
- Event aggregation (Dune, subgraph, etc)
- eg: Chain Specific Name Service as ENS subdomains
Thank you

https://docs.ens.domains/dapp-developer-guide/ens-l2-offchain

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2020 Oct
**State of the ENS**

**Talk 5 — On Top of the Mountain**  
1140

**State of the ENS**

**Talk**  Intermediate  
**GOVERNANCE & COORDINATION**

**Day 2 — Wed, Oct 12  16:30 - 17:00  30 Mins**

**Speakers**

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