

# ERC-3668

built-in, trust-minimized L2 to L1 data retrieval

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Linea<sup>•</sup>





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# Agenda

1. What is ERC-3668 and why do we need it?
2. How does it work?
3. Use cases
4. Integration with Linea and benefits



# How can chains access external data?

Natively a chain cannot access data from the outside world, on the web or other chains. But there are protocols that solves those problems:

- Cross-chain bridges
- Oracle
- Coprocessors...

# Why did we need another solution?

ERC-3668 (aka CCIP-read) is a standard proposed by the ENS team (nick.eth). Contrary to previous solutions, ERC-3668 does not:

- require to send transaction onchain (and have someone pay the gas cost)
- can avoid to introduce dependencies to external protocols and additional trust assumptions

Standards Track: ERC

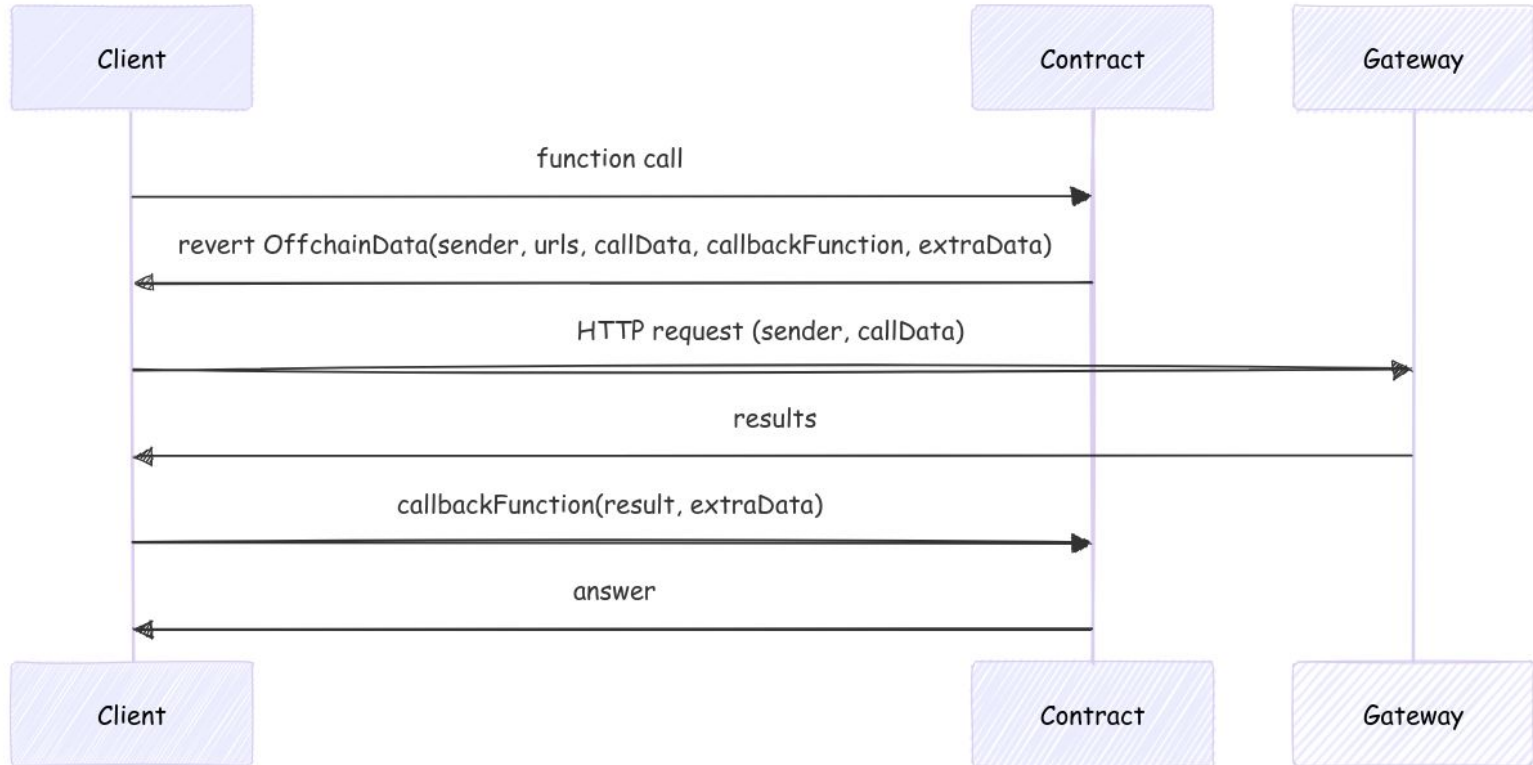
**ERC-3668: CCIP Read: Secure offchain data retrieval**  

CCIP Read provides a mechanism to allow a contract to fetch external data.

**Authors** Nick Johnson (@arachnid)

**Created** 2020-07-19

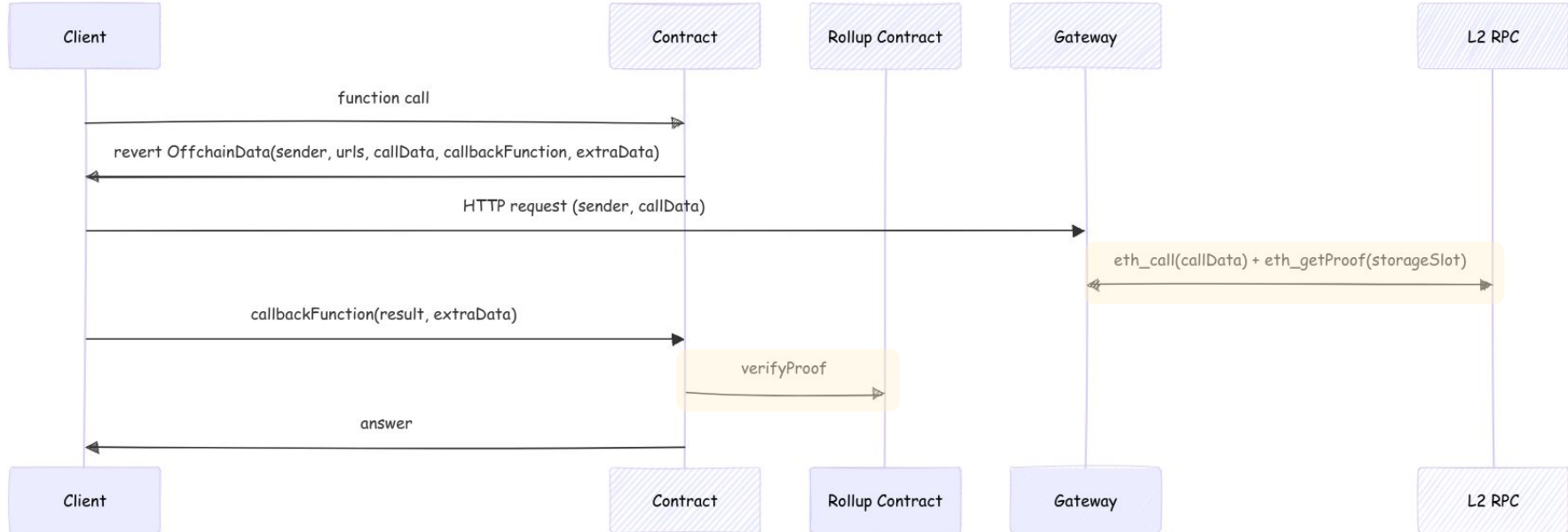
# How does it work?



# But, don't we have to trust the gateway?

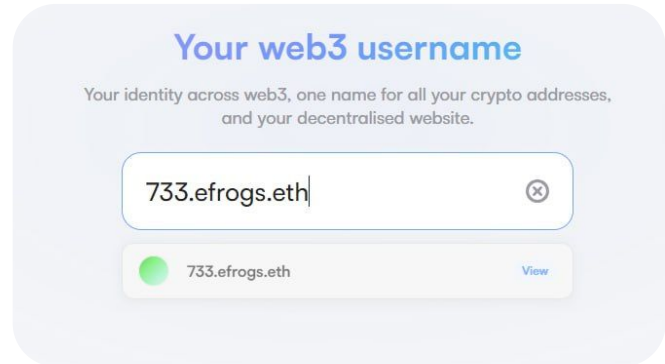
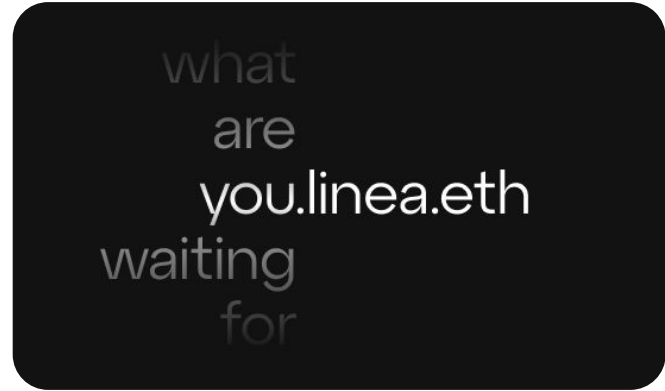
Not if the gateway give a proof of the data it provides.

L2s post their state on L1, which means you can verify L2 storage proof on L1!



# That's cool, but what can we do with it?

- Have ENS names managed on L2 while staying compatible with ENS
- Execute L1 transactions based on DAO votes on L2
- Gate airdrop / NFT mints etc. based on attestations on L2 or offchain data

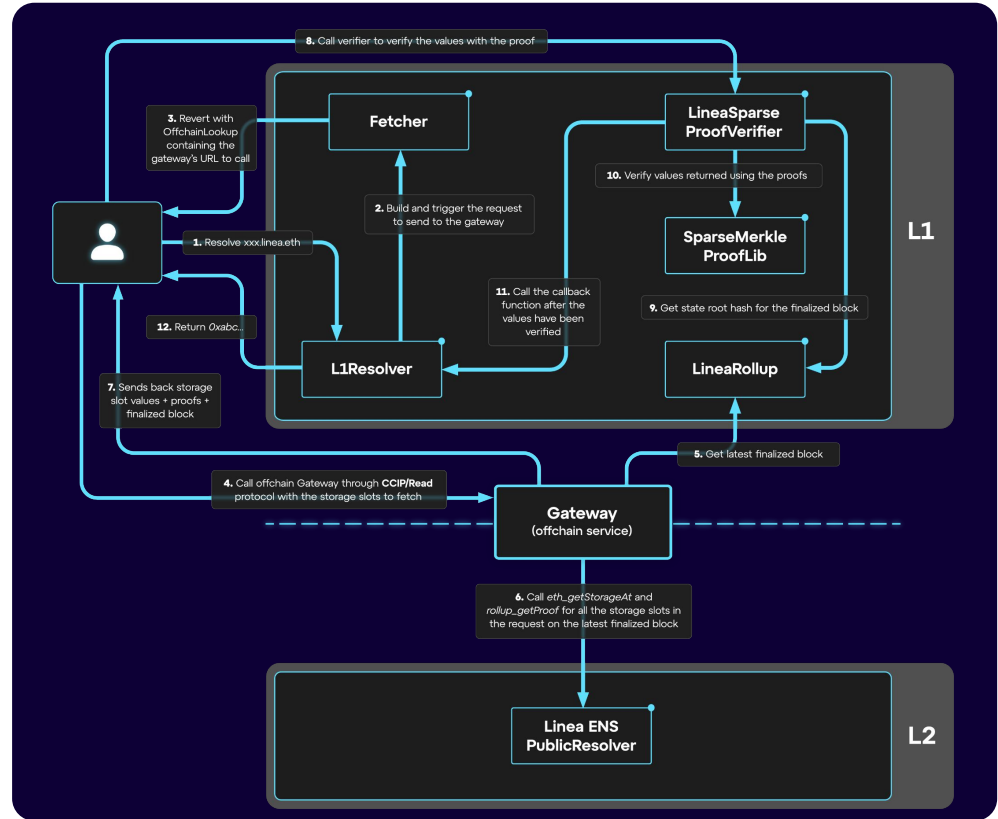




# Do I need to implement all of that? It seems complicated

Linea has implemented and open-sourced the full stack that let you build on ERC-3668 easily

Framework like Unruggable further simplify implementation and works across chains




# Summarizing the benefits

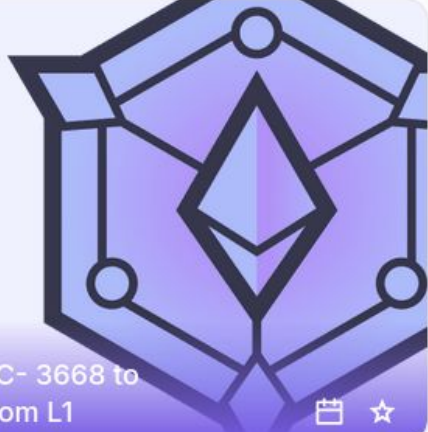
- **Efficient:** L2 data retrieval does not require any transaction on L1
- **Secure** by Linea zero-knowledge proof
- **No dependencies** to external protocols, no additional trust assumption
- **Minimal development overhead:**
  - already integrated on client libraries
  - audited open-source smart-contract
  - no hosting required if you use Linea public gateway

# How do I get started?



- [eips.ethereum.org/EIPS/eip-3668](https://eips.ethereum.org/EIPS/eip-3668)
- [docs.linea.build](https://docs.linea.build)
- [github.com/Consensys/linea-ens/](https://github.com/Consensys/linea-ens/)
- [gateway-docs.unruggable.com](https://gateway-docs.unruggable.com)
- Join our workshop this afternoon!

 Layer 2

Expert





Deep dive: how to use ERC- 3668 to trustlessly read L2 data from L1

**Description**

In this workshop, the ENS, Unruggable and Linea team will demonstrate how one can use ERC-3668 (aka. CCIP-read) to read L2 state trustlessly from L1, with concrete examples. Let us show you how it works!

 Nov 13th — 2:00 PM - 3:20 PM

 Workshop - Classroom E

Thank you!

