ERC-3668

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

DevCon South Asia, Nov 13, 2024

Linea

Arthur

Product Manager @ Linea
Verax Core Contributor

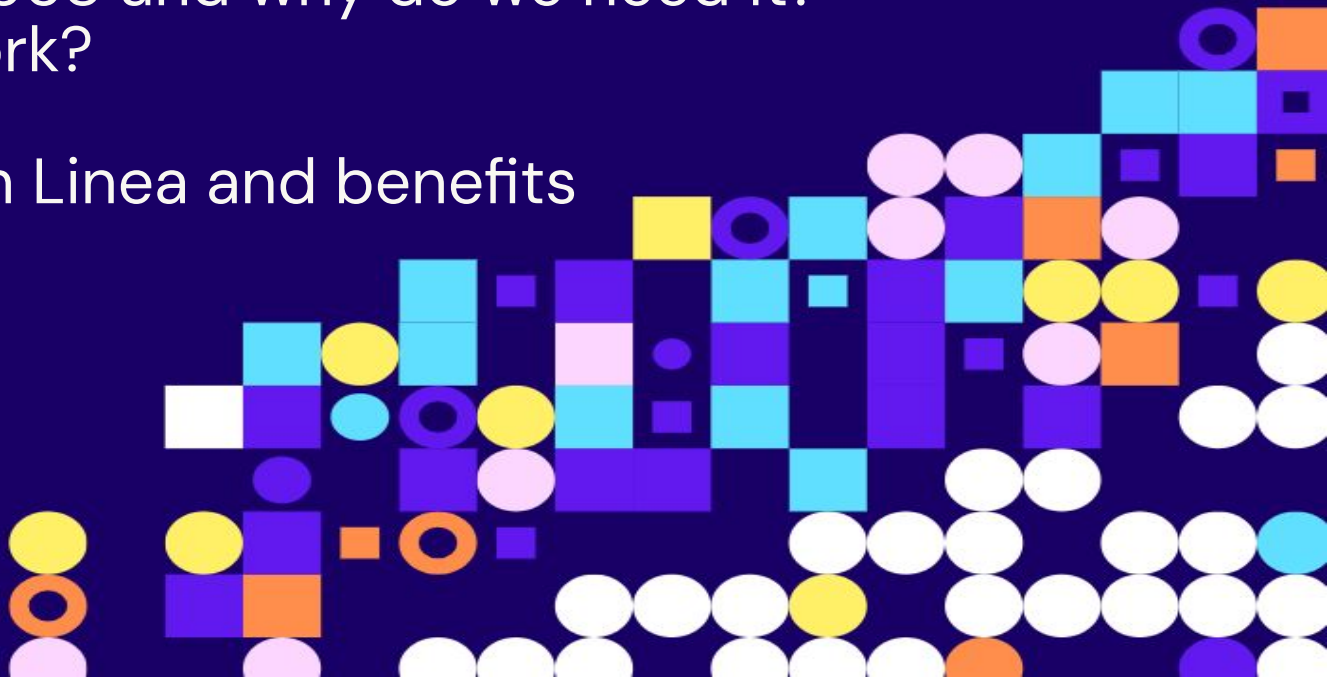
@goinfrexeth

@goinfrex

Linea

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:

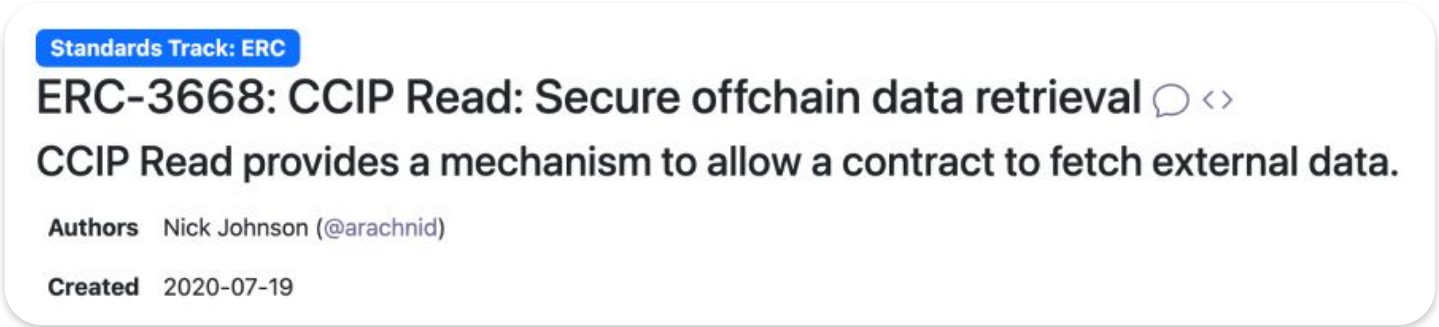
- Cross-chain bridges
- Oracle
- Coprocessors…

Linea

Why did we need another solution?

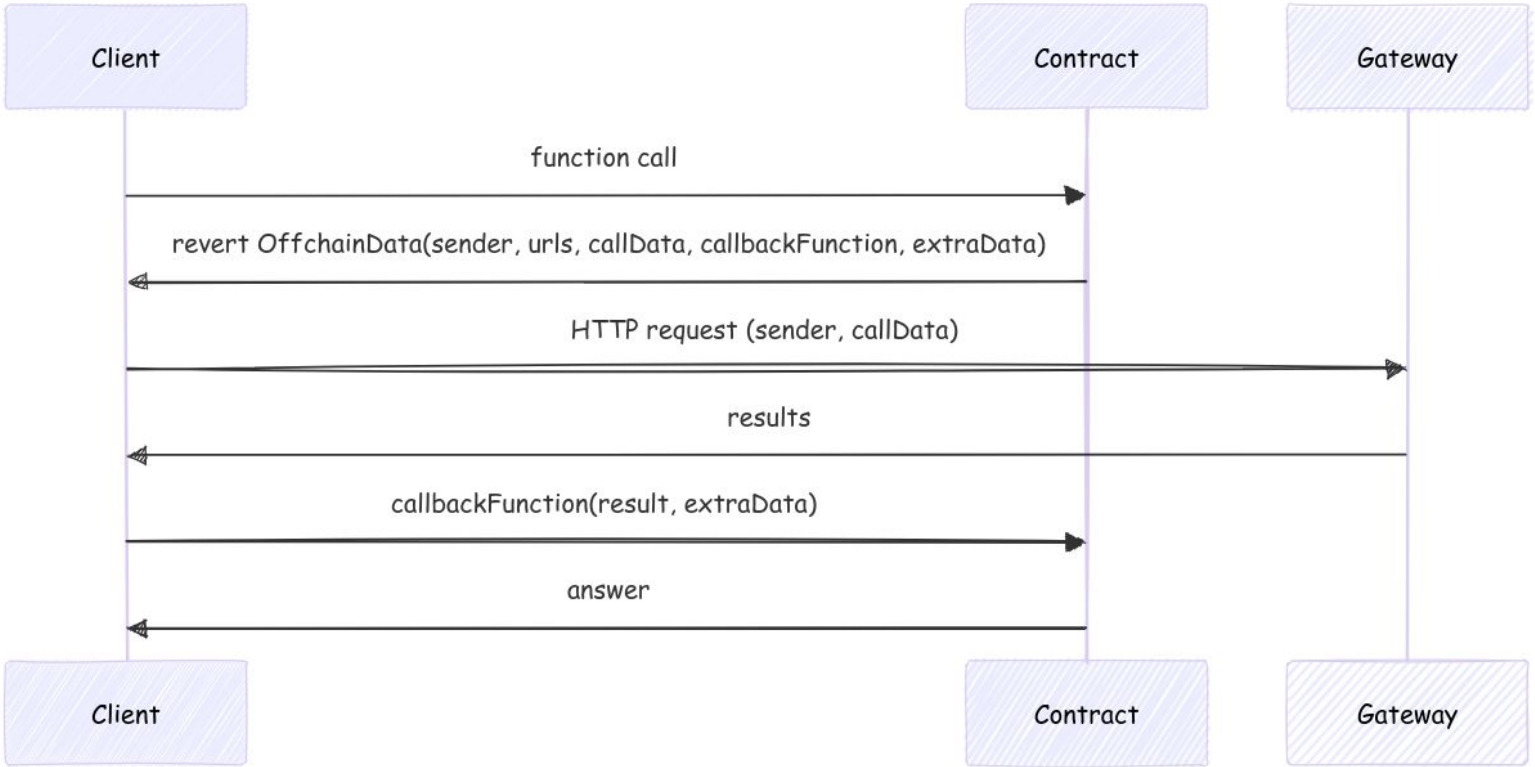
ERC-3668 (aka CCIP-read) is a standard proposed by the ENS team (nick.eth). Contrary to previous solutions, ERC-3668 does not:

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



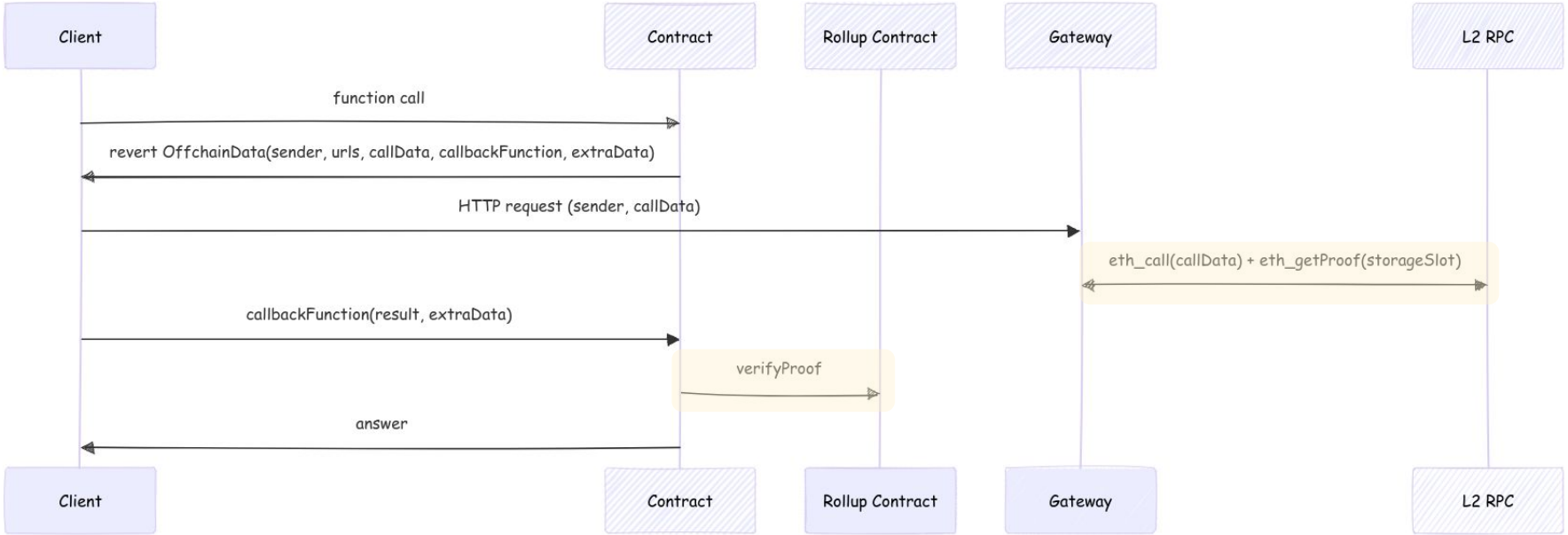
Linea

How does it work?



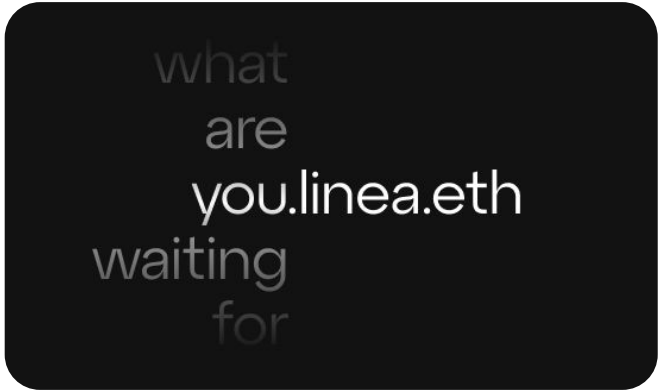
But, don’t we have to trust the gateway?

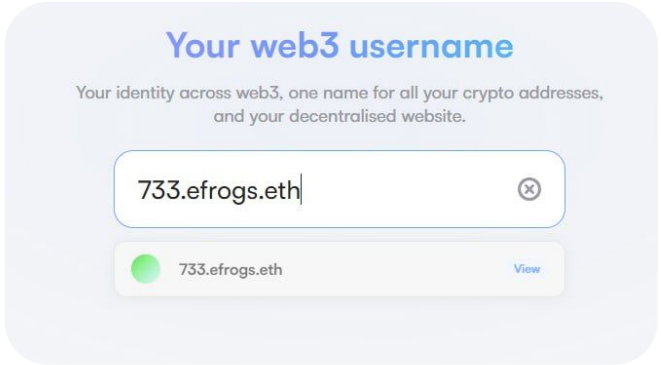
Not if the gateway give a proof of the data it provides.
L2s post their state on L1, which means you can verify L2 storage proof on L1!



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



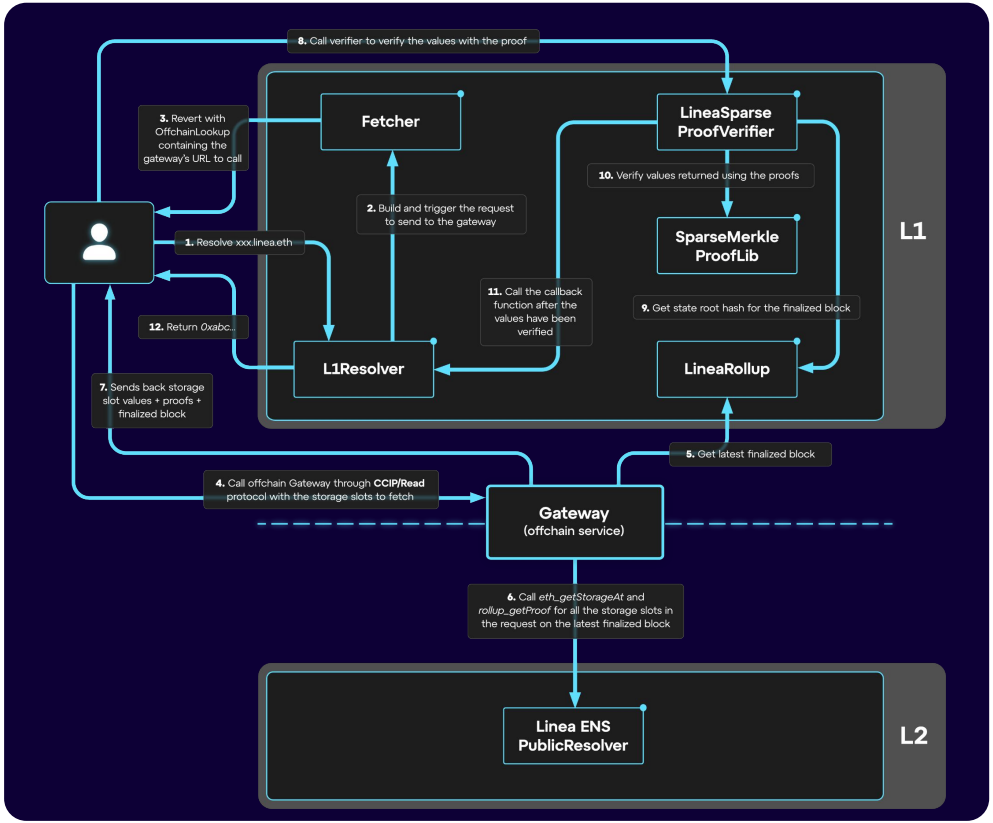


Linea

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

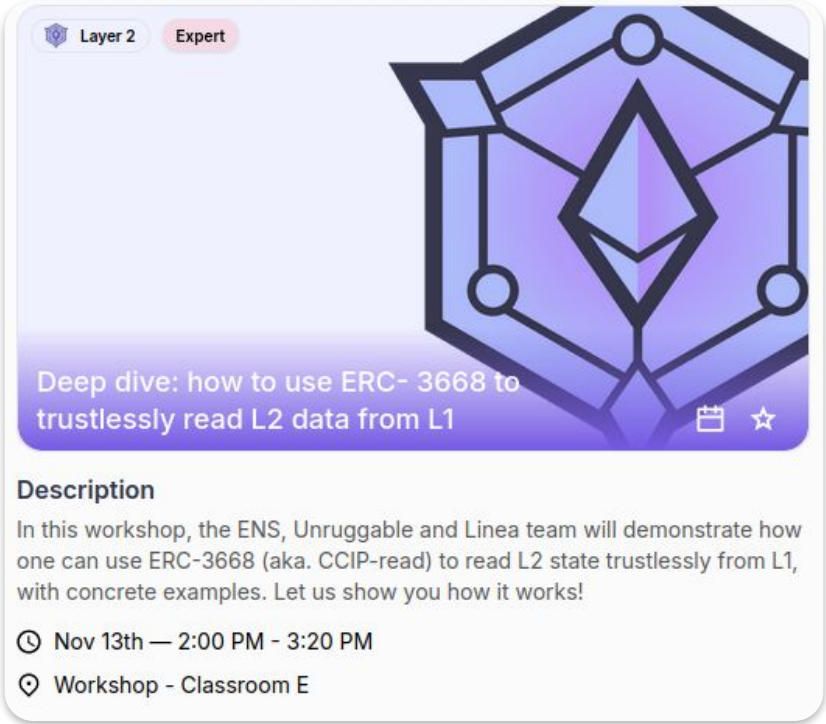


Summarizing the benefits

- **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
- docs.linea.build
- github.com/Consensys/linea-ens/
- gateway-docs.unruggable.com
- Join our workshop this afternoon!



Thank you!