

Golem DB Workshop

Use the blockchain as your database - explore Golem DB to seamlessly store and retrieve your app's data without dependence on standard databases or providers

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Agenda

Agend of the workshop

1. Presentation
 - Architecture
 - JSON-RPC API and their extension
 - SDKs
 - Access to DBChain(s)
2. Workshop task - own work on sample application
3. Flow of top-up L3 account

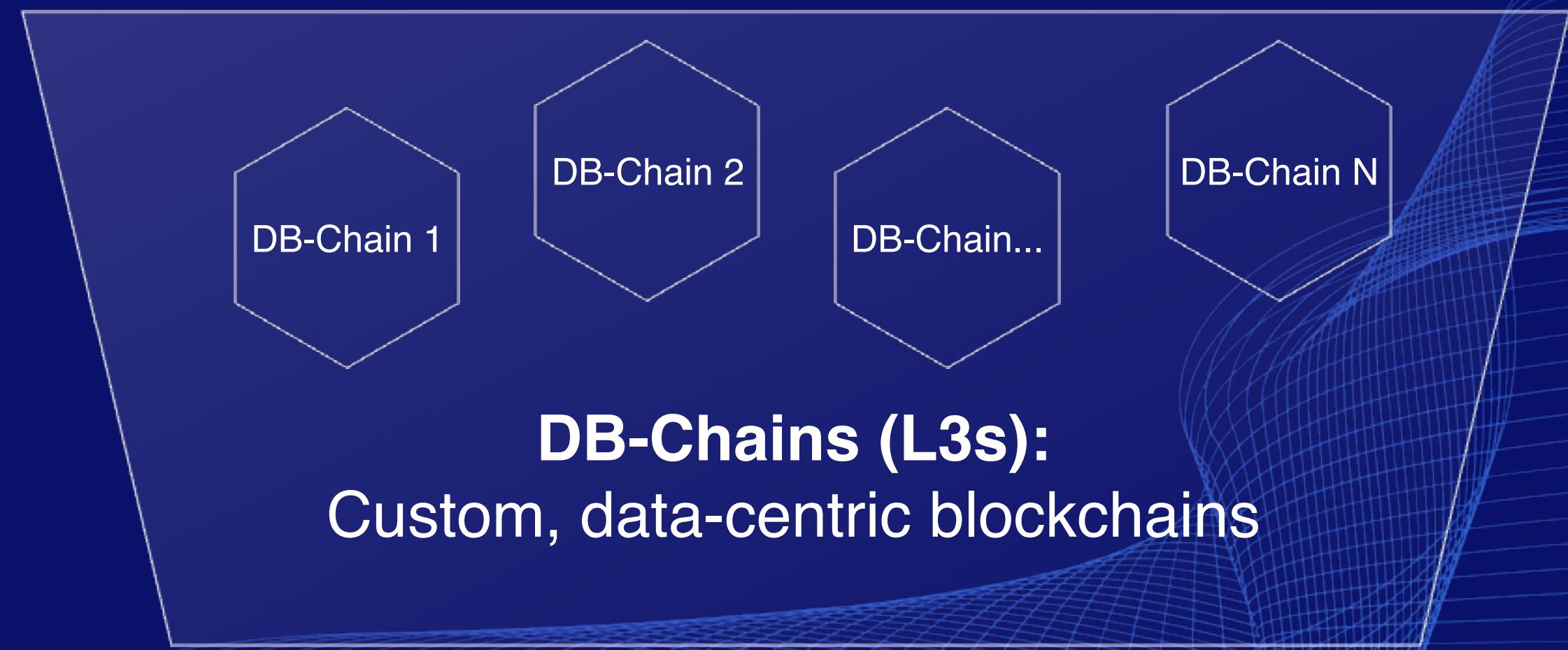
Your feedbacks after are more than welcome!

<https://docs.google.com/forms/d/e/1FAIpQLSedCgtm5Vp896teCRyfkQM5IEFxSF3jH8POQKvrm7accCRvw/viewform>

General idea

High level architecture

- L1 - Ethereum (security)
- L2 - Golem DB (coordination)
- L3 - DBChain (DB on chain)



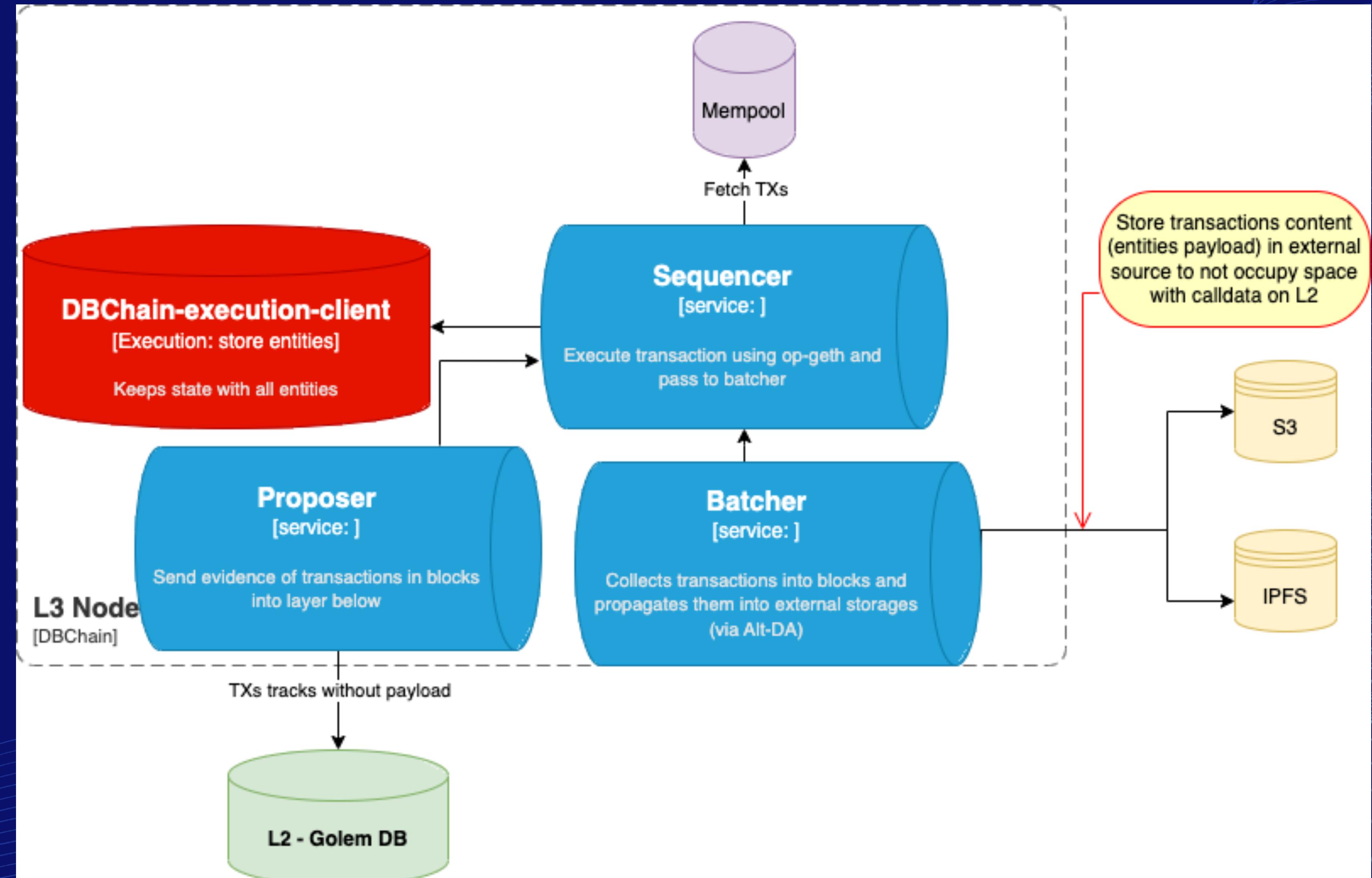
Golem DB (L2):
Coordination & anchoring

Ethereum (L1):
Security & finality

Architecture

In a bit more details

- Execution service
- Batcher
- Proposer
- Sequencer
- DA Layer (out of L2! - no calldata)



Architecture

Entities in the storage

- We save unstructured payloads (entity)
- Entity has a few metadata which plays very important role
- Annotations (text and numeric) - <key, value> pairs useful for querying data
- BTL (Block-to-leave) - expiration time for entity
- Note! Price of storage is mainly combination of entity size and BTL

JSON-RPC API

Golem DB extensions

- Golem DB use well-known web3 JSON-RPC API for seamless integration
 - Store, remove and update entities in DB are done via sending regular transaction i.e. `eth_sendRawTransaction`
 - What is specific is the addressee -
0x00060138453
 - And ‘data’ field of Tx - which requires specific json object encoded with RLP
 - More about it in our Docs in **DEVELOPMENT** section

JSON-RPC API

Golem DB extensions

- Read operations are realised through our API extensions (our endpoints)
- golembase_getStorageValue - get value of single entity by its hash
- golembase_getEntityMetaData - get entity's metadata (BTL, annotations)
- golembase_queryEntities - query entities by their annotations
- More about it: <https://docs.golem-base.io/dev/json-rpc-api/#querying-entities>

SDKs

Golem DB SDKs

- TypeScript SDK
- Python SDK
- Rust SDK
- CLI (for local DBChain)
- You can find examples of all SDKs in section **GETTING-STARTED** in our Docs

SDKs

Hello World!

- git clone git@github.com:krzysiekfonal/golemdb-workshop.git
- <https://github.com/krzysiekfonal/golemdb-workshop>
- cd samples/<python || ts>
- Python: pip install golem-base-sdk
TS: bun install
- Python: python hello_world.py
TS: bun run index.ts

Access to DBChain (L3)

Various way to work with DBChains

- Using just existing, publicly accessible DBChain (public RPC node) e.g. our Kaolin, ETHWarsaw
- Running own RPC node synchronised with existing DBChain
- Running own local DBChain (dev mode)
- Run own local op-geth client from sources
- More info and instruction you can find in GUIDES section in our Docs

Task: Fill the gap in simple app

Workshop task

Extra prizes

- 3 x Web3Pi devices
<https://www.web3pi.io/>
- We will choose the projects under a few criteria (all at once):
 - > Active ones
 - > Valuable feedbacks
 - > Nice extensions to the task
 - > Surprising solution



Resources

You might need them while working on a task

- Docs - <https://docs.golem-base.io/>
- Workshop repo - <https://github.com/krzysiekfona/golemdb-workshop>
- GolemDB on ETHWarsaw - <https://event.golemdb.io/>
- Event chain (L3) dashboard - <https://ethwarsaw.holesky.golemdb.io/>
- Event chain explorer - <https://explorer.ethwarsaw.holesky.golemdb.io/>
- Golem DB (L2) dashboard - <https://l2.holesky.golem-base.io/>
- Golem DB repo - <https://github.com/Golem-Base/golembase-op-geth>

Capture the flag

Bridge funds from L1 to L3

Hackathon!!!

We invite you to our Hackathon

- Today evening (6pm) Hackathon starts
- Golem DB is one of the sponsors
- As you know already the stuff we warmly invite you to take part if you want to do more on Golem DB
- Especially we welcome own ideas
- There will be nice prizes
- <https://event.golemdb.io/>

Rewards at ETHWarsaw

Hackathon Rewards



1st Place — \$3,000

2nd Place — \$2,000

3rd Place — \$1,000

Additional Rewards

Golem Ecosystem Fund: Up to \$50,000
for selected projects

Other Participants

Web3 Pi Devices: 5 units for top teams

GLM Tokens: 10,000 GLM token pool

Vanity.Market: 50 vouchers for generating
your vanity address



Thank you
for your attention!