libmdbx

successes, obstacles, goals & roadmap

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libmdbx | WTF ?

1. Works on Ethereum nodes and wide:
   - **Erigon** since 2021
   - Akula/Reth/Tempo since 2022
   - StarkWare since 2023

2. More +100500 на iOS/Android

3. Spinoff from LMDB в 2015

   within ReOpenLDAP for MegaFon

libmdbx | Achievements 2025

1. Reliability during development:
   - **>100M, was no data loss**
   - early GC cleanup
   - changed **20%** of the code

2. Success with **Erigon**

3. Rise of popularity in **Rust**

libmdbx | Barriers

1. High threshold of entry: 💬
   - emergently cumulative dissimilarity 💬
   - complicated & baffling
   - slow ≈ useless 💬
2. Huge state space 💬
3. Frozen database format 💬

libmdbx | Turnpoint

Was:

- fully open source development
- database format has frozen
- features and support for free

Become:

- open code, but not development
- more database formats
- sponsored features,
  support for untainted

libmdbx | Right now

1. Search with caching ⇨ .NET 💬
2. Removal by bunches ⇨ Erigon.tech 💬
3. Cloning transactions ⇨ Tempo.xyz 💬

libmdbx | Soon

1. Explicit defragmentation 💬
2. Nonsequential GC processing 💬
3. Subscription API 💬

libmdbx | Afterwards

1. Ability of multiple implementations 💬
2. New database format 💬

   ...replication based on ReOpenLDAP 💬
3. Movement towards **Mithril Database** 💬

Mithril ≈ New DB format

1. Merkle Tree + Patricia Trie 💬
2. Optional mmap and encryption 💬
3. Long keys, prefix compression, streaming blobs, data compression, element numbering...

libmdbx ⇨ Mithril DB

1. Continuous «seamlessly» development,
   Legacy databases support

2. New API with SWIG
   for bindings generation

3. Dual license, Custom features...

libmdbx | In touch!

- **to ask** ⇨ https://t.me/libmdbx
- **code** ⇨ https://sourcecraft.dev/dqdkfa
- **docs** ⇨ https://libmdbx.dqdkfa.ru

Thanks:

- **Erigon** for sponsorship
- CARTESIUS.agency for consultations
- to **you** & all **users** for interest