Future of DAS - Berlinterop

R&D Session at Forschungsingenieurtagung – June 2025

Duration: 1:30 hr
Moderator: Francesco D'Amato (@fradamt)
Note taker: TBA

Agenda

- [10 mins] (Francesco) Overview of current design and things to improve:
  - getBlobs requires all blobs
  - inefficient column propagation
  - all blobs in the mempool
  - supernode reconstruction requirement
- [40 mins] (Csaba, Leo, Raul) EL mempool short term future: sharded when and how?
- [40 mins] (Csaba, Francesco, Raul) Improving propagation, cell gossip

Pre-reads

1. EL mempool:
   - A new design for DAS and Sharded Blob Mempools (https://ethresear.ch/t/a-new-design-for-das-and-sharded-blob-mempools/22537)
   - Is data available in the EL mempool? (https://ethresear.ch/t/is-data-available-in-the-el-mempool/22329)
   - Cell staging + sparse blobpool (https://efdn.notion.site/Cell-staging-sparse-blobpool-200d989555418022b42ef9f4ad36745d)
   - Horizontal vs vertical mempool sharding (https://notes.ethereum.org/@dankrad/BkJMU8d0R)

2. Improving propagation:
    - Doubling the blob count with Gossipsub 2.0 (https://ethresear.ch/t/doubling-the-blob-count-with-gossipsub-v2-0/21893/6)
    - Cell staging + sparse blobpool (https://efdn.notion.site/Cell-staging-sparse-blobpool-200d989555418022b42ef9f4ad36745d)
    - Improving column propagation with cell centric erasure/network coding (https://ethresear.ch/t/improving-column-propagation-with-cell-centric-erasure-network-coding/22298)
    - Accelerating blob scaling with FullDASv2 (with getBlobs, mempool encoding, and possibly RLC) (https://ethresear.ch/t/accelerating-blob-scaling-with-fulldasv2-with-getblobs-mempool-encoding-and-possibly-rlc/22477)
    - FullDAS: towards massive scalability with 32MB blocks and beyond (https://ethresear.ch/t/fulldas-towards-massive-scalability-with-32mb-blocks-and-beyond/19529)
    - PPPT: Fighting the GossipSub Overhead with Push-Pull Phase Transition (https://ethresear.ch/t/pppt-fighting-the-gossipsub-overhead-with-push-pull-phase-transition/22118)
    - Improve PeerDAS network by chunking columns (https://notes.ethereum.org/@pop/peerdas-chunking-columns)

Notes

To be added after session.