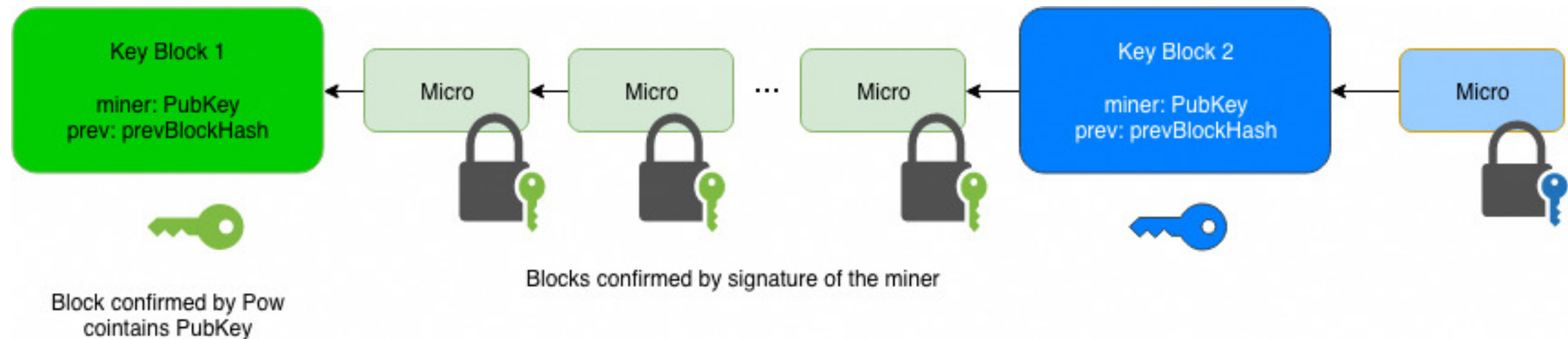


Bitcoin NG @ Æternity Explained

2018 Roma network



Chain structure

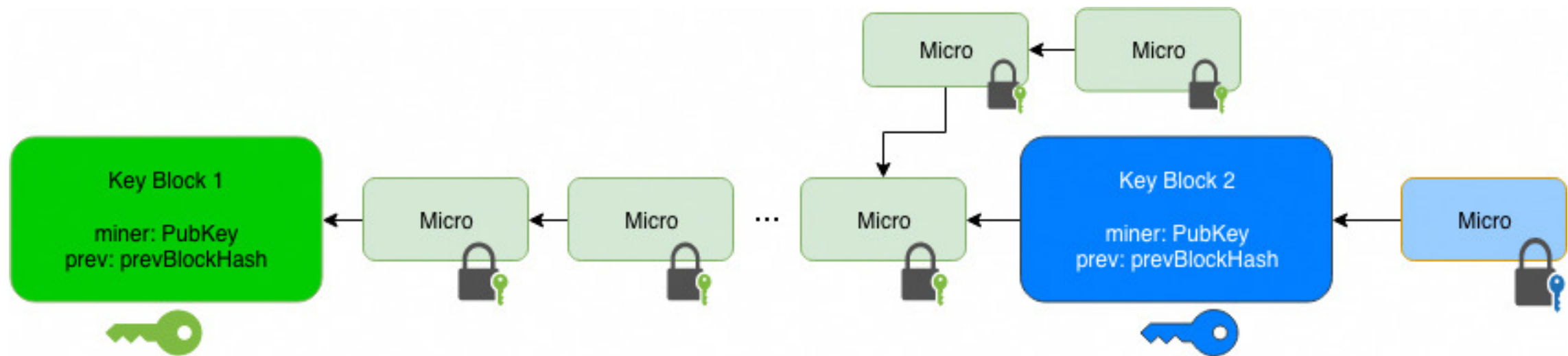


Only Key Blocks require Proof-of-Work

Micro Blocks are signed by the miner of Key Block

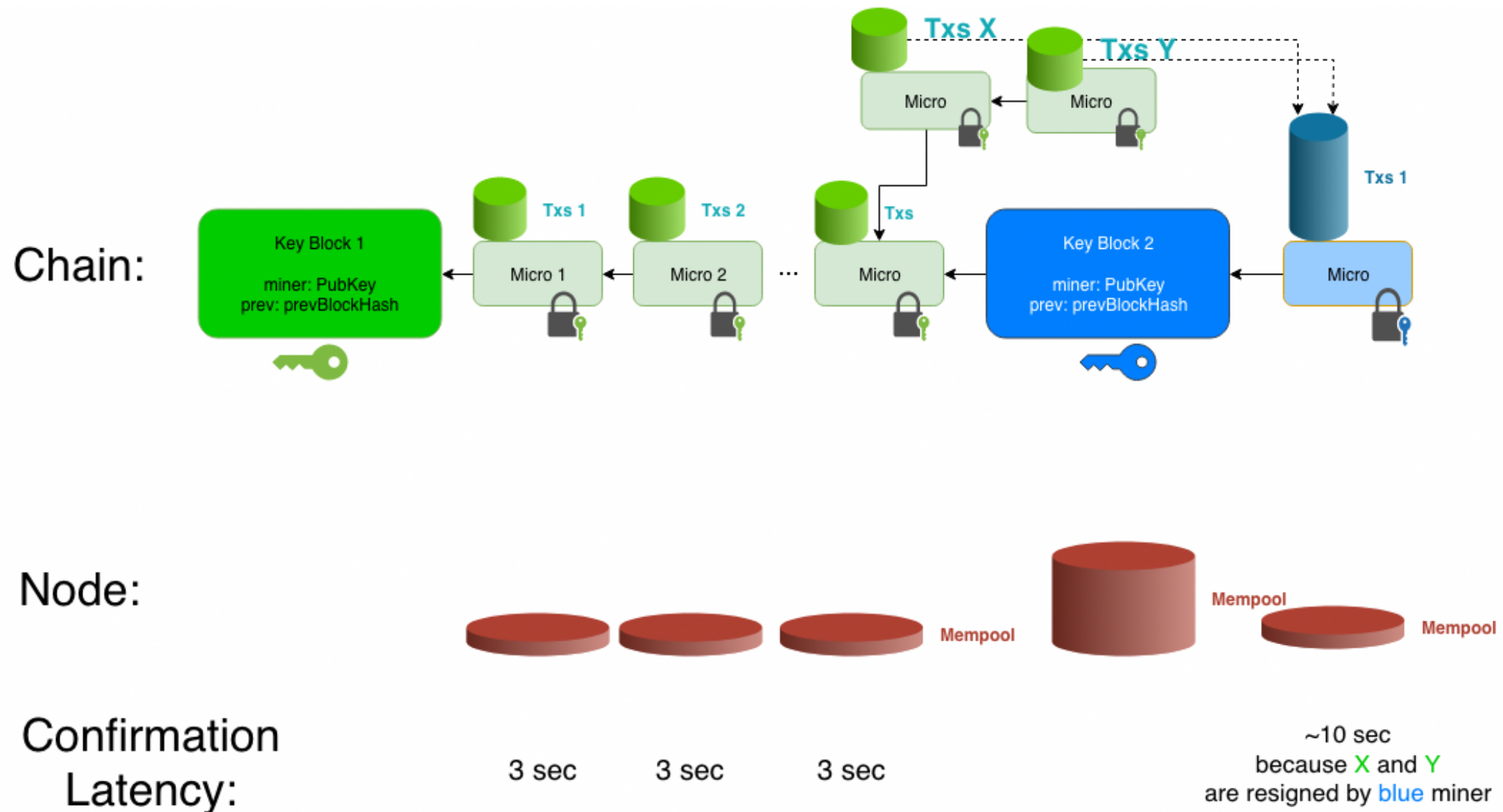
Signing is fast and cheap, so latency is very low
(set to 3 seconds to prevent spam)

Real chain structure - GOOD



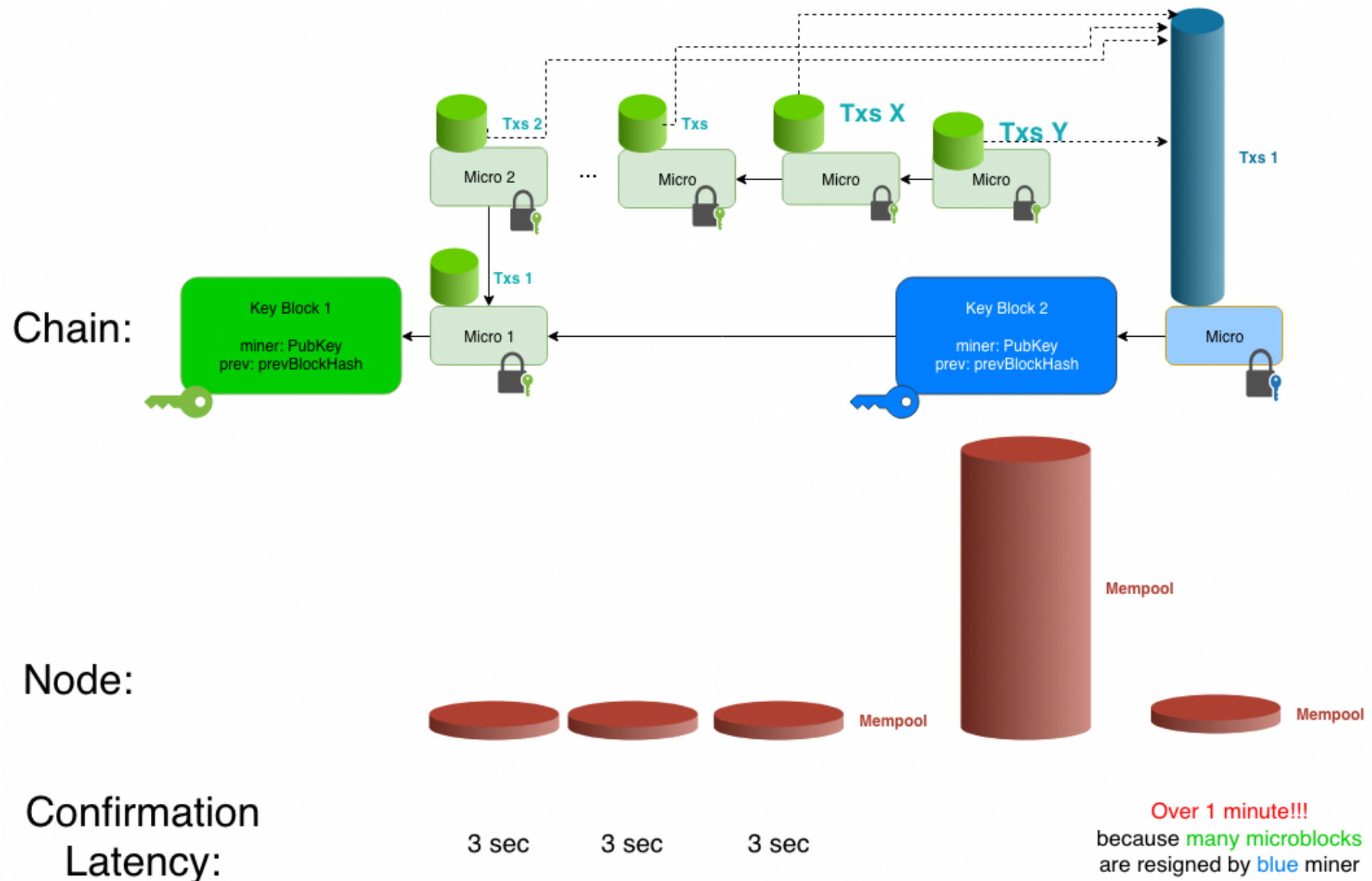
Due to network delay the next miner is not following the latest micro block
When it is 1-2 missing blocks it is OK!

Real chain structure - GOOD



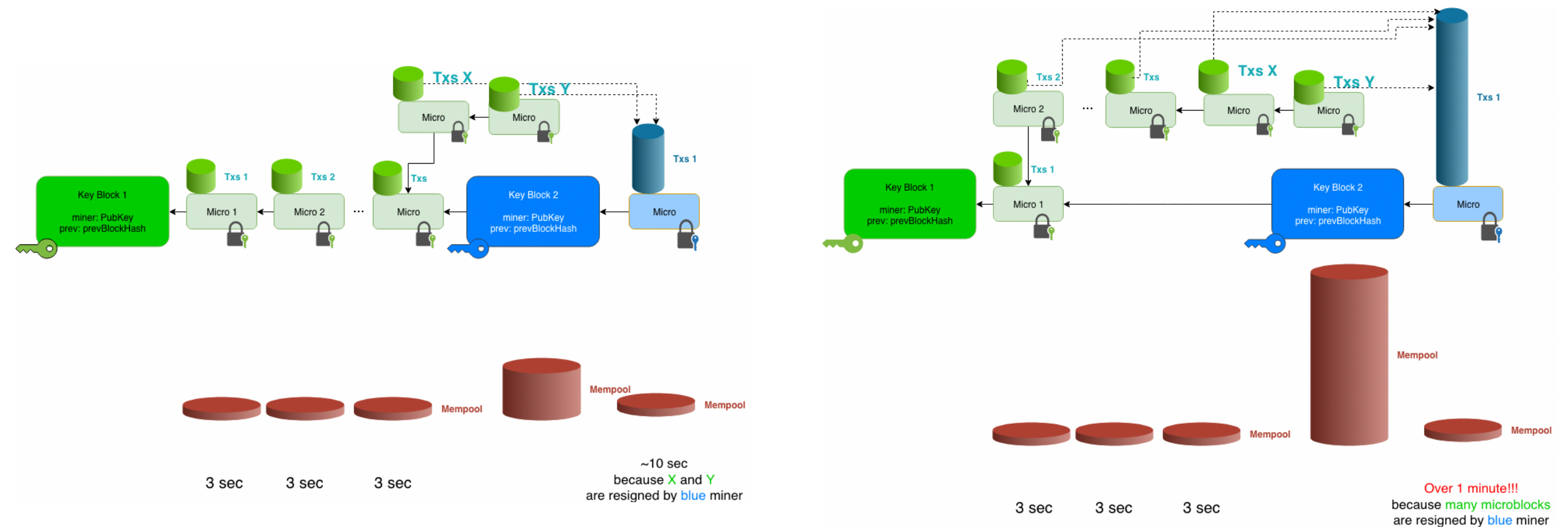
Discarded blocks' transactions (X and Y) are resigned by new miner

Real chain structure - BAD!



The new miner doesn't follow the chain of micro blocks and mines on very old one
Mempool grows, latency is not practical anymore!

Good vs Bad



Longer chain of micro blocks is discarded,
because key block prev hash points to old micro block

Proposal 0

- Produce Micro Blocks!
- It is Proposal Zero, as it should be already in. It's part of protocol and reference implementation!

Proposal 1

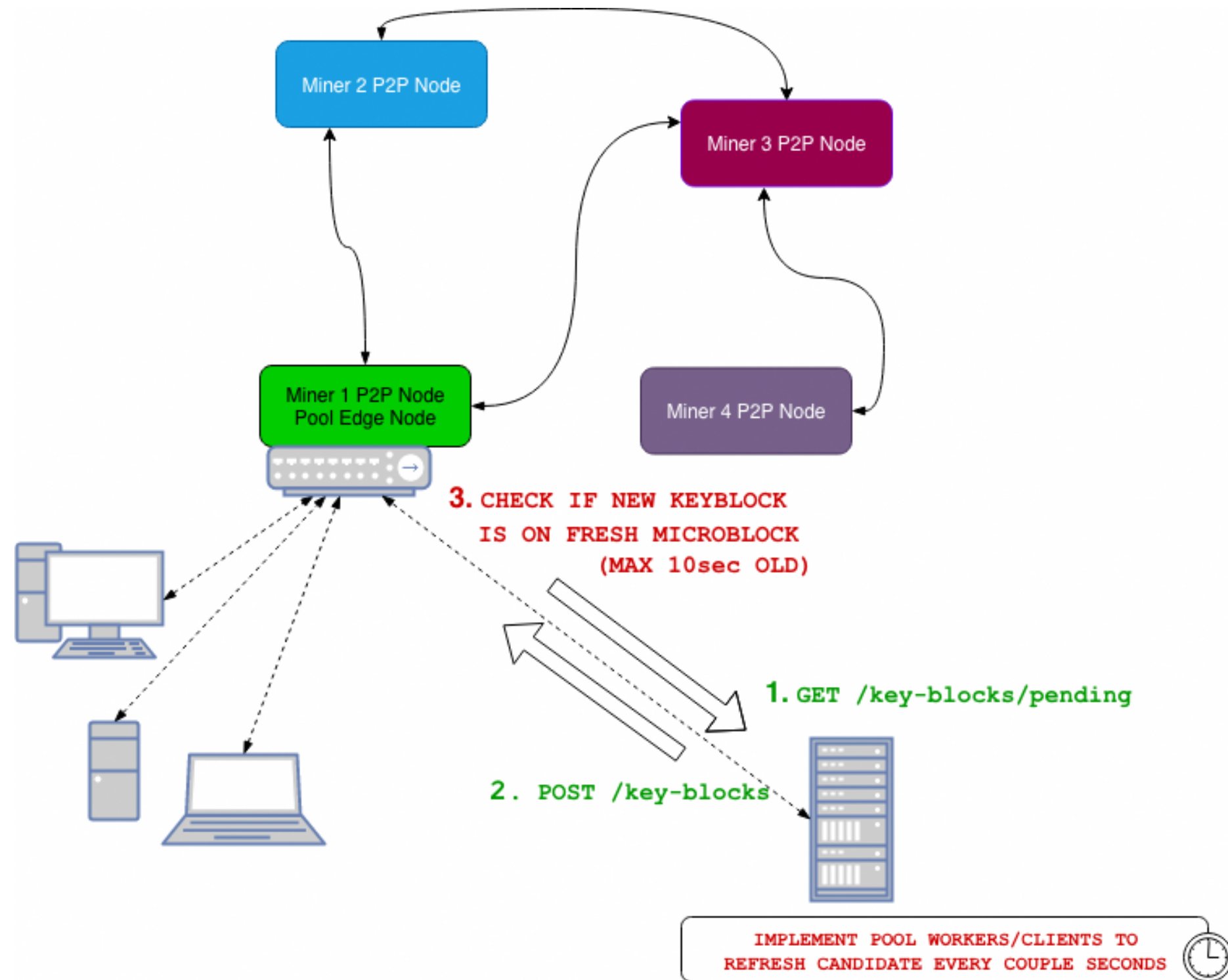
- Follow the latest micro block you receive
- Keep your network well connected
- Otherwise latency grows and network is not attractive for users

Proposal 2

- Update to POST **/key-blocks** API
- The API shall reject key blocks following microblocks older than ~10 seconds (so it let skip 3-4 microblocks)
- <http://aeternity.com/epoch-api-docs/?config=https://raw.githubusercontent.com/aeternity/epoch/master/apps/aehttp/priv/swagger.json#/internal/PostKeyBlock>

Proposal 2 - p2p diagram

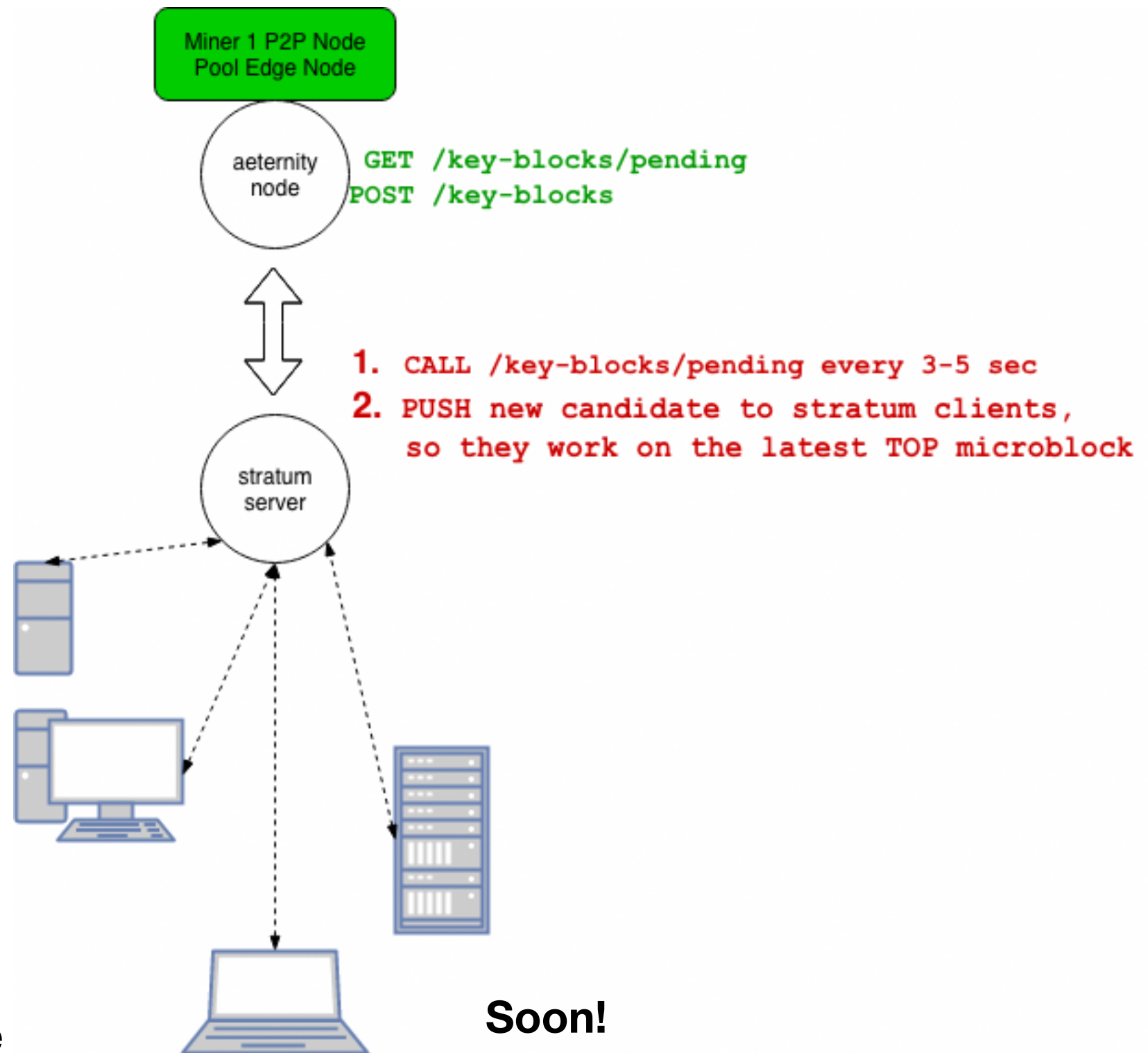
Green node is pool node in AE p2p network



Required changes in red:

1. add "freshness" test for key blocks
2. to avoid useless work ask clients to refresh every 1-5 seconds

Proposal 2 - stratum case

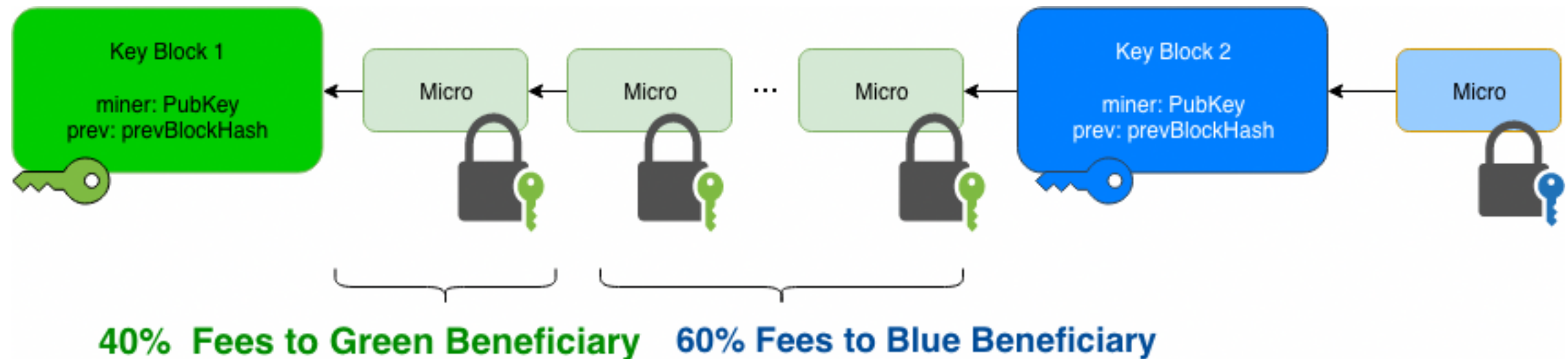


This is stratum implementation, probably used by pools.

Here, it's important then to refresh stratum server as often as possible and push new work to stratum clients

Soon!
Aeternity node will support stratum server implementation

Reminder and Proposal 3



Proposal 3 is to increase Blue miners benefits to 73%

Currently fees are too small, comparing to coinbase,
to incentivise mining on the latest micro blocks

Thank You!

