We are excited to announce that Flashbots is successfully running a block builder inside an SGX enclave, a trusted execution environment (TEE) developed by Intel. The SGX block builder is now live on the Ethereum Sepolia testnet, and soon on mainnet!

Our previous work on running Geth inside SGX demonstrated the technical feasibility of this approach. Now, we've made the next step towards block building inside encrypted enclaves, and want to share our key learnings and challenges, as well as the all the code and tooling for running a block builder inside SGX.

Implementing block building inside encrypted enclaves brings us one step closer toward transaction confidentiality and decentralization of the block building role.

Running a block building algorithm inside an enclave ensures that block builders, as well other infrastructure providers, can no longer see the contents of user transactions, and run verifiable block construction algorithms on them, ensuring economically efficient blocks without compromising on user privacy.

Looking to the future, builders inside SGX can make blocks that are provably valid and truthfully report their bid size, possibly obviating the need for mev-boost relays.

Furthermore, it is an important step toward curbing the risks of exclusive orderflow by allowing transactions to be private yet accessible to all block builders operating inside enclaves.

The full post with all the technical details is live here:

writings.flashbots.net – 3 Mar 23

Block Building inside SGX | Flashbots

We are excited to announce that Flashbots is running a block builder inside an SGX enclave, and open-sourcing all the components.