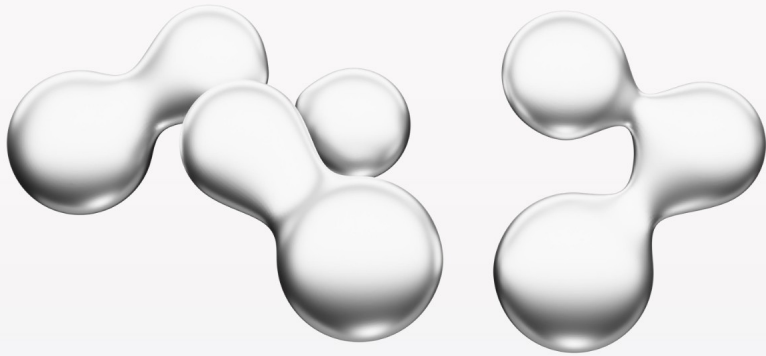


Blockdaemon cuts wrong head votes by 40% with mump2p



Blockdaemon connected 2,185 mainnet validators (69.9k ETH) to Optimum's mump2p network. Blocks now reach its nodes 366 ms earlier than on public gossip.

–39.7%

Wrong head votes vs pre-mump2p baseline

366 ms

Earlier average block arrival

3.4×

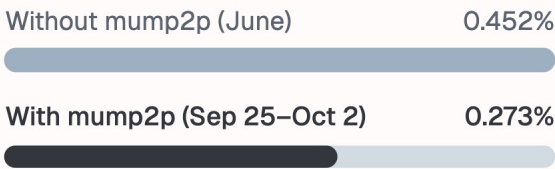
Tighter block propagation spread

92%

Of blocks seen first on mump2p

WRONG HEAD VOTES

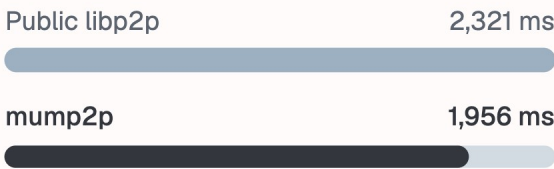
Down 39.7%



Share of attestation duties

BLOCK ARRIVAL

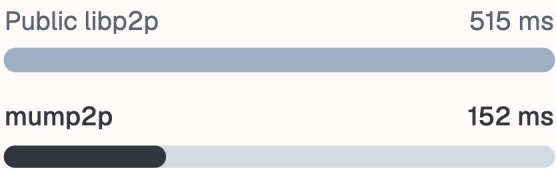
366 ms sooner



Average arrival time in the slot

PROPAGATION SPREAD

3.4× tighter



Block propagation spread

THE CHALLENGE

Late blocks cost rewards

The head vote is the most time-critical part of an attestation. A validator must vote for the most recent block, and that vote must be included in the next slot to count. The majority of recoverable wrong head votes have the same cause: the right block had not arrived when the vote was due. Blockdaemon already ran above 99% accuracy, so the remaining losses came down to network speed.

THE SOLUTION

A gateway beside the client

An Optimum gateway connects each of Blockdaemon's consensus clients to mump2p, a peer-to-peer protocol that uses Random Linear Network Coding to speed up the traffic that earns rewards: blocks and attestations. Blocks reach the validator sooner and its votes go out faster, leaving more of the slot to attest to the right head. The gateway does not replace libp2p; it adds a fast lane alongside native gossip.

“We were already running above 99% head-vote accuracy, so we didn’t expect much room to improve. mump2p found it anyway, cutting our wrong head votes by nearly 40% without any changes to our validator setup.”

DAN SPINA, ETH INFRA LEAD, BLOCKDAEMON