



Instant Hypercube Routing

TON blockchains use smart routing mechanisms to ensure that transactions between any two blockchains will always be processed swiftly, regardless of the size of the system. The time needed to pass information between TON blockchains grows logarithmically with their number, so scaling to even millions of chains will allow them all to communicate at top speed.

See «Hypercube Routing» and «Instant Hypercube Routing», 2.1.4, 2.4.19, 2.4.20.



Proof-of-Stake Approach

TON uses a Proof-of-Stake approach in which processing nodes («validators») deposit stakes to guarantee their dependability and reach consensus through a variant of the Byzantine Fault Tolerant protocol. This allows TON to focus the computing power of its nodes on handling transactions and smart contracts, further increasing speed and efficiency.

See «Proof-Of-Stake Approach», 2.1.16, 2.6.



2-D Distributed Ledgers

TON can «grow» new valid blocks on top of any blocks that were proven to be incorrect to avoid unnecessary forks. This self-healing mechanism saves resources and guarantees that valid transactions will not be discarded due to unrelated errors.

See «Account chains», 2.1.1, 2.1.17.

