SynComm

Synthetic Assets for a Real World

Types of Nodes:

Light Nodes V Full Nodes V Validator Nodes

At this early stage, to secure the network, SynComm will operate more as a non-custodial platform rather that a purely decentralized platform. The nodal hierarchy will consist of

Light nodes, as in wallets or IOT devices in the form of Hardware Oracles,

Full nodes receive and broadcast transactions to the network but do not participate in the consensus process, they can be “promoted” or “delegated” to a Validator Node by being in the top 20 most staked full nodes. Full nodes represent the majority of nodes on the SynComm Chain they do not join the consensus process and produce blocks, they take retain a full copy of the SynComm blockchain, propagate the chain state and receive transactions (from oracles & light clients) and broadcast them to all other nodes including Validator nodes.

Validator Nodes are responsible for committing new blocks to the blockchain and participate in the consensus protocol by signing blocks that contain cryptographic signatures signed by each validator's private key. The validator nodes are automatically reassigned every day based on their staked position.

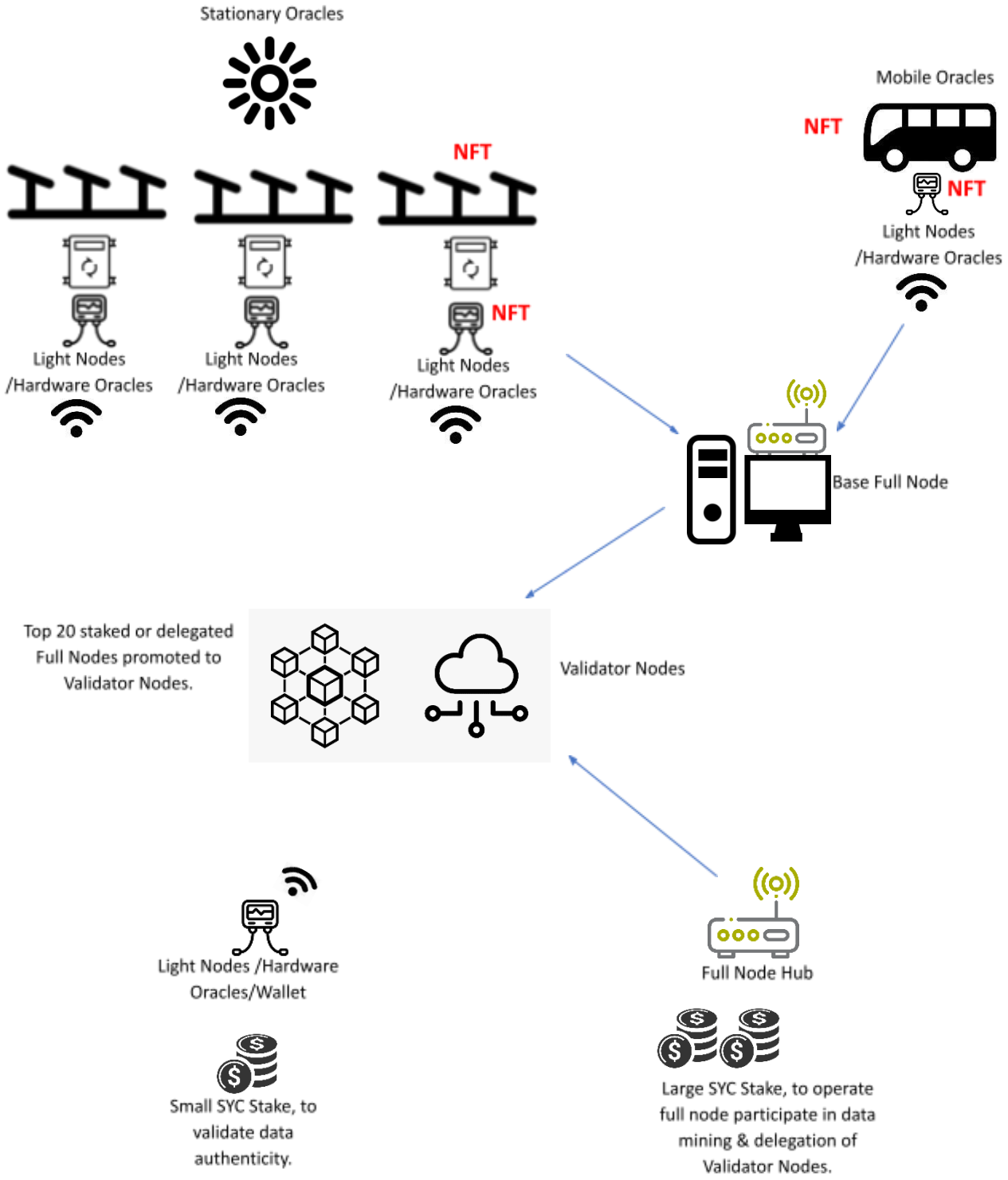
Validator nodes enforce all the rules of the blockchain and are responsible for verifying and relaying the transactions and blocks on the network. Because of the trustless environment (the open internet) and the nature of a blockchain, each validator node needs to download and verify every single block, and therefore every single transaction in each block. a light client only references a trusted full node’s copy of the blockchain. This means that light nodes can transact on the blockchain without downloading an entire copy of the blockchain, or requiring large amounts of processing power, permanent internet connection or large amounts of memory.

Full nodes especially in mobile applications with limited power and internet connectivity is not a practical option, because there are many environments

where the assets to which these nodes are attached do not have that kind of memory or processing power (that is the reason why a full node is best left to service providers, miners and developers). Downloading and verifying the whole chain of blocks takes time and resources, using an SSD is now required to fully synchronize most public blockchains, an HDD cannot keep up with the needed input/output operations per second. Most hardware oracles especially in mobile applications are going to use light nodes, because they verify transactions using a method called simplified payment verification (SPV), which allows a node to verify if a transaction has been included in a block, without having to download the entire blockchain. Most hardware oracles will be light nodes with smaller volume staking wallets, as most mobile devices do not have enough memory to run a full node.
When running a light node, your view of the blockchain is entirely dependent on your peers, without any validation of the blocks you receive from them. It is generally recommended to run a full node as the main hub due to peer dependence described above. However as most light nodes will be attached to the network via a networked full node (see image below) these can therefore be considered as reliable peers, and as such can be hardcoded as reserved peers in your light node. Reserved peers take precedent over normal peers for sending transactions, new blocks etc. This will boost your reliability as you know you have a trusted reserved peer but can always fall back on your normal peers.

We believe that utilizing a decentralized mainnet (i.e., Ethereum) as a Layer 1 and running DApps on highly scalable DPoS sidechains provides the best of both worlds.

light node edge gateway connection.



If false data received from light node, its stake is forfeit and no further data mining can occur, until it is reloaded.