

Reliable node infrastructure is a vital part of any blockchain ecosystem. It is impractical to assume that the majority of web and mobile decentralized applications will run their own nodes to access the power of a given blockchain. Current applications depend on centralized relay node solutions that require a significant amount of trust and end up being a sunk cost in fees over the course of time. Pocket Network is a set of smart contracts built on Ethereum that incentivize any individual to run full nodes and relay transactions for any cryptocurrency.

## PROTOCOL LAYER

At the protocol layer, Pocket Network incentivizes individuals to run full nodes for any cryptocurrency by earning the native protocol token (POKT). A Pocket Relay Node must register in the directory contract and list the supported cryptocurrencies, endpoint, path and port. A Pocket Relay Node must also stake POKT to participate in the network, and their relays are throttled proportionally by the amount of POKT they have staked.

While Pocket network has no fees, developers using the protocol pay to access relay node services through inflation. Pocket Network utilizes a continuous token model where service providers in the network (Relay nodes) claim a static amount of mint per relay completed. This means that the amount of POKT minted over the course of the life of the protocol is infinite. To access relay node services, developers must stake POKT to send relays in their application.

This staking and minting mechanism allows for the protocol to have better UX for developers. They do not have to worry about extensive fees. Developers just have to stake some POKT if their app begins growing.

Pocket Network is also blockchain agnostic. Pocket Relay Nodes must run geth or parity to participate in the protocol - This ensures they stay honest and can collect their mint. They can also run full nodes for any other cryptocurrency and relay those transactions.

## MIDDLEWARE LAYER

The vision for Pocket Network is to make it as easy as possible to create applications that use cryptocurrency, particularly for mobile. As a result, above the protocol layer the team will build an open source mobile iOS and Android SDK. These SDK's will be built with a plugin system in mind - since it is infeasible for the team to support every cryptocurrency, the aim is to make it as simple as possible to add your own.

This way, developers will have easy access to the infrastructure provided by the Pocket Network. There will be a well defined set of interfaces in the mobile SDK's that developers will have to adhere to. This includes methods like `createWallet()`, `createTransaction()`, `signTransaction()` and `sendTransaction()`. The networking of accessing Relay Nodes will be taken care of, and the developer can focus on building their mobile application that leverages whichever cryptocurrency they wish.

The Relay Node software is also part of the middleware layer. This includes easy creation of a REST API endpoint to receive and relay transactions sent by the mobile SDK's. It will be a simple npm install and run on a server of your choice.