2.3.3.1 Full Node

return to Node Taxonomy

Full nodes keep a full copy of the blockchain transactions[1]. There can be any number of full nodes within the node network, all acting as redundant data sources. Some of the activities of a full node are maintaining consensus between other nodes, verification of transactions, and storing the ledger.

In many ways the full nodes' functionality is analogous to those of servers in decentralized networks. However, there is no centralized “truth” or final judge. Instead, the “truth” is determined by consensus among the full nodes. However, this consensus based methodology is not without its pitfalls. When more than 51% of the full nodes cannot reach consensus (i.e., agree with a transaction or a proposition), the proposed change is skipped. This can lead to a Hard Fork in the ledger and the opposing groups diverge, creating two or more chains [2]. Sometimes the 51% problem can be part of an orchestrated effort, referred to as a 51% attack [3]. The more nodes in the node network, the harder it is to successfully launch a 51% attack.

A well-known example of this kind of ledger divergence, leading to a hard fork, was the Bitcoin Cash Fork.[4]

Full node contains:

- 2.3.3.1.1 Pruned Node
- 2.3.3.1.2 Archival Node

1)
Osita Chibuike, 21 May 2018, Legobox, https://dev.to/legobox/how-to-setup-an-ethereum-node-41a7
2)
“Blockchain Nodes: An In-Depth Guide”, https://nodes.com/
3)
“51% Attack”, Jake Frankenfield, 6 May, 2019, https://www.investopedia.com/terms/1/51-attack.asp
4)
“Bitcoin Cash’s Scheduled Hard Fork Tripped Up By Software Bug”, Christine Kim, 15 May 2019, https://www.coindesk.com/bitcoin-cash-scheduled-hard-fork-tripped-up-by-software-bug