

2.3.3.1.2.1 Authority Node

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The [node_network](#) traditionally join a network and perform tasks without anyone or anything granting permission to join the Node Network. Having permissionless access to a Node Network is one of the original guiding principles that is integral to the decentralized nature of DIDOs¹⁾.

Note:

Unfortunately, there are drawbacks to this approach; solutions involving a level of centralization for granting permission can provide benefits like increased speed. **<todo #nick:2020-05-13>Not sure I interpreted and fixed this correctly. The way it was written made no sense. Are we saying that solutions based on consensus are inherently slower than those which centralize the permission granting process? I would think that reaching consensus is inherently a slow complicated process because who in the end declares that consensus has been reached? are the algorithms listed here used in place of a centralized authority? </todo>**Consensus algorithms include [delegated_proof_of_stake_dpos](#), [delegated_byzantine](#), [proof_of_authority_poa](#) and others.

Networks making use of [proof_of_authority_poa](#) Networks define a fixed number of **Authority Nodes**. The number of Nodes and associated PoA designation is voted on by the PoA community or defined by the development team. Authority Nodes are similar to [Full Nodes](#) and can create and validate blocks. All other Nodes in the Node Network run as [Lightweight Nodes](#), depending on broadcasted data to participate in the blockchain.²⁾

[Iota](#) refers to Authority Nodes as **Permanodes** ([definition](#)) because they keep all transaction data even after [snapshots](#) are made (concept introduced by Iota³⁾)

¹⁾ S. Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System," 24 May 2009. [Online]. Available: <https://bitcoin.org/bitcoin.pdf>.

²⁾ "Blockchain Nodes: An In-Depth Guide", <https://nodes.com/>

³⁾ "Full node vs permanode", Helmar, 5 January 2018, <https://iota.stackexchange.com/questions/782/full-node-vs-permanode/783>

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