

2.3.3.1.2.3 Mining Node

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Mining nodes^{1) 2)} are full nodes or lightweight nodes within the node network that attempt to prove they have worked and completed the required challenge before anyone else to create a block of transactions (see [proof of work \(PoW\)](#)). To complete the task, mining nodes perform either as [full archival nodes](#), or receive data from other [full nodes](#) on the node network to obtain the current state of the blockchain and parameters required to describe the next block.

Mining nodes employ hardware components (i.e., [CPUs](#), [GPUs](#) or [ASICs](#)) to solve a cryptographic problem. The first mining node to complete the task broadcasts the results to the node network for verification by [full nodes](#). Once consensus is achieved on the determination that the solution to the problem is correct and the solution is the first to be posted, the mining node is granted the right to add a block to the existing blockchain.

As a reward for performing the work, mining nodes are given a preset number of tokens (i.e., coins), as well as the transaction fees associated with the block of transactions. The preset reward is often referred to as a *coinbase* or a *coinbase transaction*. The reward (i.e., coinbase) is usually the first transaction in the block and free.^{3),4)}

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Not all DIDs use “mining” as originally defined in Bitcoin as [Proof of Work \(PoW\)](#). This means other DID implementations (i.e., [iota](#)) may not require a full blockchain Ledger to verify a transactions validity.

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

³⁾

“Blockchain Nodes: An In-Depth Guide”, <https://nodes.com/>

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Osita Chibuike, 21 May 2018, Legobox, <https://dev.to/legobox/how-to-setup-an-ethereum-node-41a7>

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