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# Release Info

| Release Date | Version No. | Description | Author |
| --- | --- | --- | --- |
|  | 0.1 | Proof of Concept | Matrix |
|  |  |  |  |

# **Abstract**

This document contains release notes for the new features in the first release of Matrix’s product.

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# **Concept**

## **Full Node**

Full node involves Bitcoin Wallet, Miner Node, the whole BlockChin database as well as Network Routing

## **Master Node**

We can consider master node as a full node with specified amount of deposits in its associated wallet.

## **GroupList**

This file provides information about the claimed computing power of nodes, as well as the grouping of 9 hosts used for testing.

# **Key Points**

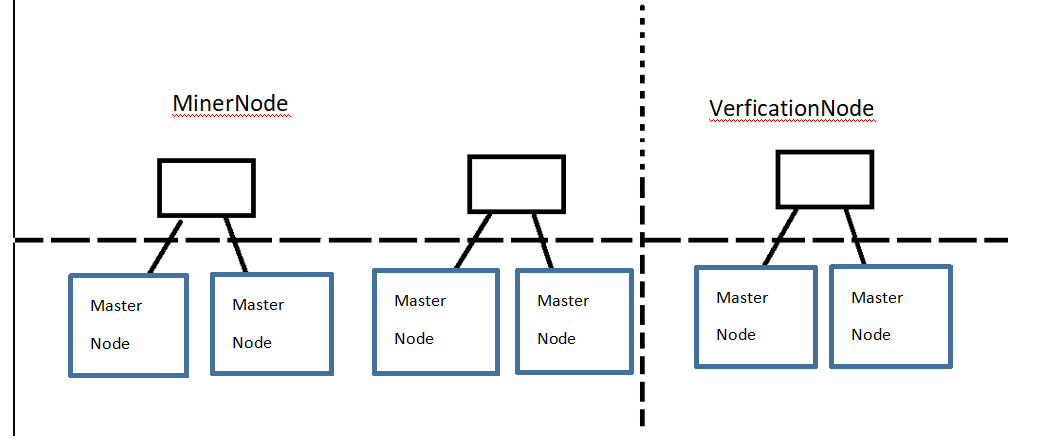
## Cryptography

We will replace **esdca** cryptographic method with National level cryptographic algorithms for cryptography.

## **P2P Connection**

We will introduce a P2P connection module to ensure that communication, [synchronization](http://dict.cn/synchronization) and collaboration could go well between those hosts, and new connections can be established via existing decision making capability.

## Communication

Figure 1 Network Chart

Once the hosts acting as master nodes starts, they will begin mining immediately, and add the IP and Computing Power information to the grouplist;

When new nodes joins the network, UDP connection will be established between nodes. In such case, if the number of nodes reaches a specified value in the network, they will be divided into different groups based on the number of nodes in the grouplist. Then, the election algorithm will run to determine which node will be miner node (a role for assigning tasks) or which one will be verification node (specifically for verification purpose).

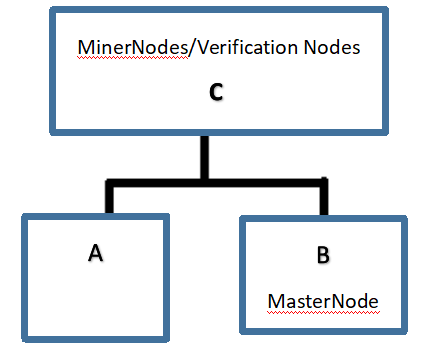


Figure 2 Node Levelling

After that, a [synchronization](http://dict.cn/synchronization) of chain information between miner/verification node and the other nodes will be performed, in order to keep the chain storage information of the current node consistent with that of miner node: a TCP connection will be created between the miner node and its child nodes, to synchronize all the information to the child nodes.

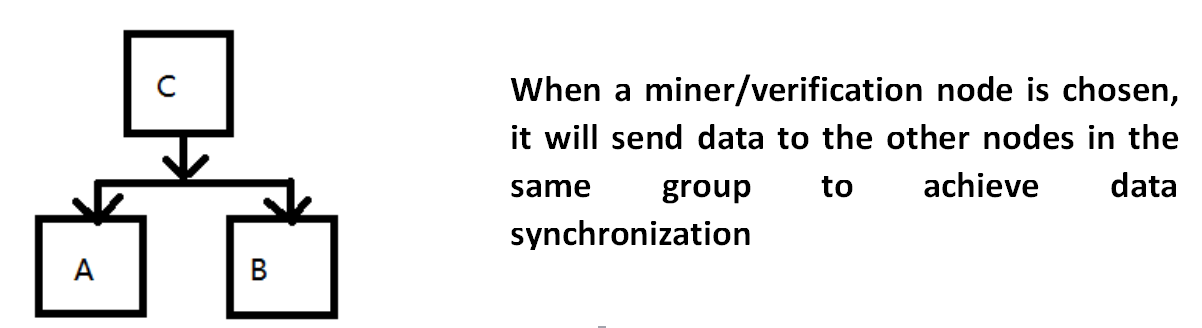


Figure 3 Block Information Synchronization

After mining is completed successfully, a broadcast will be send out throughout the communication network. The broadcast will send the information of new nodes by traversing the grouplist and establishing a TCP connection with each node. After the master node receives the information, the new blocks will be added into the block chain.

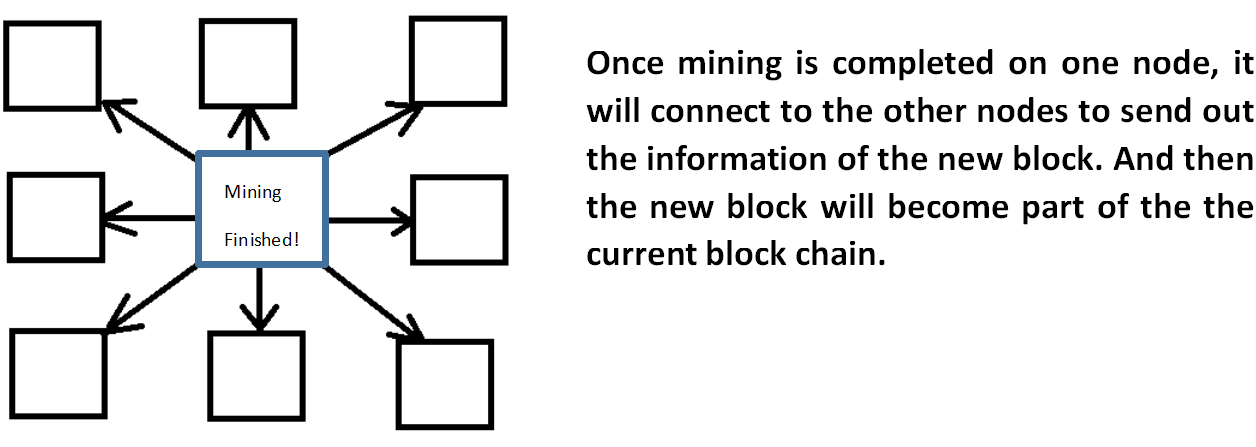


Figure 4 Broadcast upon new block generation