**How computational power is saved in the lightning network?**

In 2021, an alternate cryptocurrency is going to be introduced which is known as the **new bitcoin (nBTC)**. This cryptocurrency is based on the **Proof of Stake (PoS)** consensus algorithm and is capable of supporting the protocol of the **lightning network**. These features make the new Bitcoin (nBTC) capable of creating a faster and more responsive network. This network implements lightning networks during the transaction processes to make the transactions faster and more efficient. Also, this network does not need high **computational power** to accomplish the transactions. Thus, the new Bitcoin instantly supports all the **microtransactions** with a minimum network fee. It also focuses on utilizing multiple security deposits to incentivize the participants and users to follow the rules & regulations of the realized lightning network-based system.

Lightning networks introduce various new layers in the blockchain of Bitcoin to enable participants or users to generate various payment channels between any two people or parties. These payment channels are created on those extra layers. Because these payment channels are created between only two people or parties, that’s why these payment channels could exist as long as we require. With the emergence of these payment channels, all of the transactions will be instant and the required fee will also be enormously low.

**Problems with the Bitcoin approach for microtransactions**

The Bitcoin approach is not appropriate for microtransactions because when we want to pay with bitcoins for microtransactions, we have to face two problems, first problem is that the transaction fee frequently changes in the microtransactions. The second problem is that the Bitcoin approach consumes more time for the confirmation of the payments because it needs at least 6 block confirmations that consume approx. 60 minutes, which is practically not affordable for both buyer and seller. Thus, the Bitcoin approach seems to be unrealistic for the micros transactions because the Bitcoin approach takes a huge time to accomplish the microtransactions due to a large amount of block confirmation processes. Thus, in this situation, the lightning network comes into the picture. This lightning network efficiently accomplishes these microtransactions instantly by saving money and time for both parties. The processing of the transactions in lightning networks is totally different from the standard transaction of the blockchain-enabled Bitcoin approach.

**Need for lightning networks**

Most of the microtransactions are made by small users with limited resources. That’s why small users are looking for an efficient network system that reduces unnecessary transaction time and fees. Lightning networks efficiently support these microtransactions because these networks do not require an enormous amount of mining equipment and high-power electricity. In this way, the lightning networks efficiently reduce high computational power by offering instant and fast transactions.

**Process of transactions in lightning networks**

The lightning network channel provides a mechanism of transaction between two people or parties. By using these channels, people could efficiently receive and send payments to each other. The transactions are recorded on a **multi-signature wallet**. This wallet could be accessed by both people or parties with their respective **private keys**. They both allow for depositing a certain amount in this multi-signature wallet. The recorded transactions are further validated based on the multi-signature smart contract. When both people or parties agree to close the payment channel then the deposit amount will be transferred to the main net through that bitcoin transaction. For calculating the validation fee in the lightning network, two kinds of fees are considered within the lightning networks. The first is a base fee and the second fee is based on used liquidity. The lightning network is different from blockchain as in the lightning network we have to find out the payment route. This payment route is suggested by the receiver.

**Invoices in lightning networks**

The invoices of the lightning network are also protected by **digital signatures**. If anyone tries to modify the invoices of the lightning network, this signature will be invalidated. Thus, the invoices for the lightning networks are extremely useful and flexible. Because these invoices offer much more required meta-information about the payment than the conventional Bitcoin address. It also enables users or participants to be more confident about where, how, and when a payment is processed in the lightning networks.