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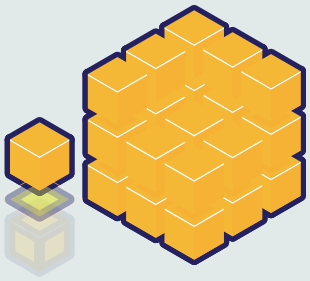
Tips on Bitcoin transaction confirmation and miners

Helpful terms



Block

A block has an average of 3000 transactions. Blocks in a blockchain are chained together in order, just like a train.

Miner

Miners are computers, not humans! Millions of miners around the world perform complex mathematical calculations, hoping to confirm the block as soon as possible.

Memory pool

Thousands of transactions in memory pool are waiting to be confirmed. The miners select high reward transactions from the mining pool for broadcasting.

Broadcasting

Miners perform mathematical calculations to confirm a block. Only the first miner who successfully solve the block can be rewarded.

Sending fees (Mining fees)

In a transaction, the sender must pay an appropriate amount of sending fees to reward the miner.

Confirmation number

After the miner successfully has broadcast the latest block, all transactions in that block will receive 1 confirmation.

How long will I receive Bitcoins?

Waiting time depends on
- How congested the blockchain is
- Amount of the sending fee

A higher sending fee encourages the miners to confirm your transaction

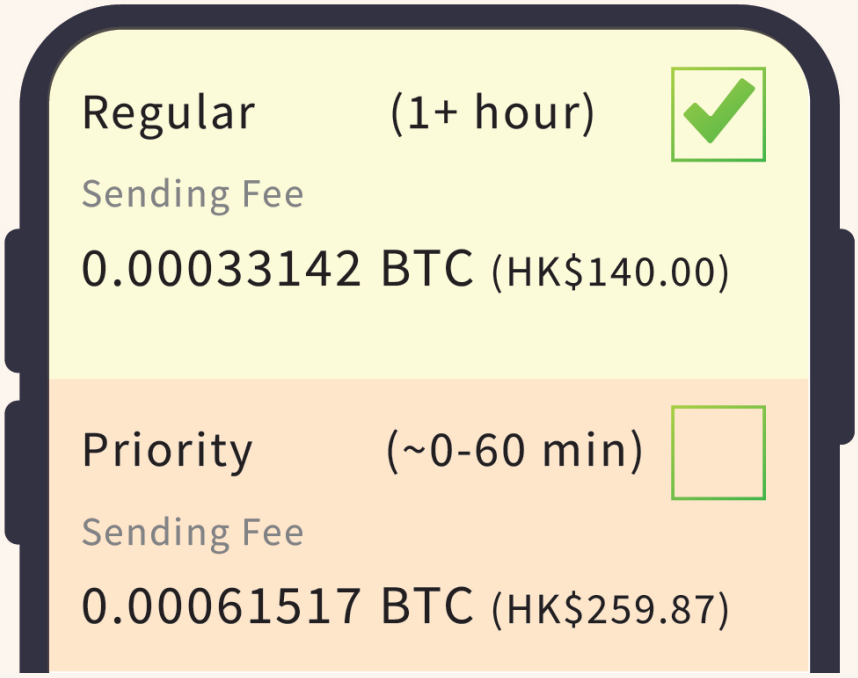
Even you paid a high sending fee, you still need to wait for the next block, which takes about 10 minutes on average

Working principle of transaction confirmation

Electricity is consumed when confirming your transaction, so you must pay appropriate fees as my reward.

The wallet will automatically calculate the sending fee for miners as reward.

Some wallets allow users to customize the sending fee, and list the corresponding required time.



Bitcoin transaction records are open and transparent, you can use Bitcoin Browser to view the latest transaction records, such as blockchain.com or blockchair.com


Memory Pool
Unconfirmed transactions will be in waiting for miners to broadcast in the memory pool.
There is limited space in the block, and you have to pay a higher fee to take this train.
I have to take the train in this block, so I will pay high cost.
I'm not in a hurry, I will pay a cheaper fare to take the train for the next few blocks.

I paid 0.0024 BTC as sending fee

Transaction A

I paid 0.0033 BTC as sending fee

Transaction B

I will let transaction B to get in the train first, because transaction A takes up too much space.

Hash 4d8db20aa27c5e1e2a82eb222f696e336d6477fd25039a94534...

34r9sKyvzYffmtHwZAwQBTQEE3UvSTaZL1	0.05820165 BTC
34r9sKyvzYffmtHwZAwQBTQEE3UvSTaZL1	0.04079082 BTC
34r9sKyvzYffmtHwZAwQBTQEE3UvSTaZL1	0.03567417 BTC
34r9sKyvzYffmtHwZAwQBTQEE3UvSTaZL1	0.03551779 BTC
34r9sKyvzYffmtHwZAwQBTQEE3UvSTaZL1	0.02164403 BTC
34r9sKyvzYffmtHwZAwQBTQEE3UvSTaZL1	0.02065368 BTC
34r9sKyvzYffmtHwZAwQBTQEE3UvSTaZL1	0.02044280 BTC
34r9sKyvzYffmtHwZAwQBTQEE3UvSTaZL1	0.01967230 BTC

Fee 0.00240486 BTC
(165.967 sat/B - 74.988 sat/WU - 1449 bytes)

Miners will consider the sending fee (sat), Also consider the size of theydata (byte). The unit of miner fee is sat / byte.

sat = fare (sending fee)
byte = baggage size (data size)

Transaction A

Fee 0.00240486 BTC
(165.967 sat/B - 74.988 sat/WU - 1449 bytes)

Hash 182387454b29dacf8748d35ee046955f091bc953106da1e6c4bf...

1H892g8KLpBywigA2mU1DjwSLvfTNBBtrS	0.00091805 BTC

Fee 0.00033674 BTC
(176.304 sat/B - 44.076 sat/WU - 191 bytes)

Transaction B

Fee 0.00033674 BTC
(176.304 sat/B - 44.076 sat/WU - 191 bytes)

Although transaction A paid a higher sendingtiee, its data size is too large and it will occupy more space in block. The fee of transaction A is 165.967 sat/B, while the fee of transaction B is 176.304 sat/B. Therefore, the miners will confirm transaction B first.

I paid a high fare for this train, and it has been more than 10 minutes. Why the train still don't depart?

10 minutes is only the average time, it can be fast or slow. There are two shifts of train a minute if it is fast, and just one shift every three hours if it is slow.

Check the time required for the train to depart in the past
(Average time required for a blockto build)

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One Satoshi Education Limited
Third Designed and printed in May 2023. Third Edition