

## Data storage system in the Blockchain network

This method is understood to store information in the blockchain network based on transactions (Tx). For such purposes the decimal part of the unit or Token is used. The proposed model is ascending beginning with the first character of the encrypted message and moving it to the last place in the stack of transactions.

The example described below consists of (n) lines and 18 columns, the latter being proportional to the decimal of the token.

For an input message: "0123456789abcdefghijklmnopqrstuvwxy"

the output for the same after encryption with method:

AES CBC SHA256

Iv: automatic

password: "abc123"

produces the string:

"5Krrq0UICVAKsk/VoFsRiEm+DzKkEzSQmBJQoaBXbWUIiJh173hFK0ZX1NShC  
N9VIN9FbRudUcYksNEVmVygOybS64Zdrv97fUv4EDpCyTye1IPsHbOSiOj/XZq7  
kOwcvdYyMGTQasvgwkH+0cQn1NNi3rZTx86Vea5yoa0XUNBi06qsN0W6G/Kbn  
kctRNHV/v2cild5Az0XPl9+TiU3QO6XKPx4STJMPkgVgqVROrJpWlMgqy2MXwd4  
RteL1uxV+oe7Ef1QHKapeMEiZiCwCFGjITHURbqyV43lllQuNEdoIB3d8dVYoL9x  
G3jdazXw0oeJum4aBt7Hlsu2/MmlbQ"

This string has a length of 342 characters, the method is to replace each character by its value expressed in decimal form.

Example: "5Krrq0UICVAKsk/VoF"

conversion to Dec: 53 75 114 114 113 30 85 73 67 86 65 75 115 107 47 86 111 70

Indexing format:

Index the characters ascending from right to left in rows of 18 characters (18 decimals) in blocks of 3 rows:

0	1	0	0	1	1	0	0	0	0	0	0	0	1	1	1	0	0
7	1	8	4	0	1	7	6	8	6	7	8	3	1	1	1	7	5
0	1	6	7	7	5	5	5	6	7	3	5	0	3	4	4	5	3

This example occupies a row length of 18 decimals, therefore to transfer or store the data of the previous example we use 3 transactions of:

0.010011000000011100  
0.718401768678311175  
0.016775556735034453

Token's

to store the encrypted message of the initial example we divide the message length (M) by the decimal of the token assigned to the smart contract.

Example:

$$342/18 = 19 * 3 = 57$$

being the number of rows per data block to be indexed is 3. For the case of the previous example we would occupy 57 Tx or transactions to store said message. You can increase the storage capacity based on the decimal of the token or using only hexadecimal input values such as those produced by the message Hash.

Example:

sha512  
"6ca13d52ca70c883e0f0bb101e425a89e8624de51db2d2392593af6a84118090"

This format only accepts 16 unique characters, being lowercase letters and whole numbers without signs or punctuations.

For this example we use decimal 18 and only two rows per storage block:

"6ca13d52ca70c883e0"

for this type of coding we assign a numerical value to each character, being:

1=01 6=06 a=11  
2=02 7=07 b=12  
3=03 8=08 c=13  
4=04 9=09 d=14  
5=05 0=10 e=15  
f=16

by substitution the previous example is:

06 13 11 01 03 14 05 02 13 11 07 00 13 08 08 03 15 00

indexed in the transaction is:

0 1 0 0 0 1 1 0 1 1 0 0 1 0 0 1 1 0  
0 5 3 8 8 3 0 7 1 3 2 5 4 3 1 1 3 6

This example occupies a row length of 18 decimals, therefore to transfer or store the data of the previous example we use 2 transactions of:

0.010001101100100110

0.053883071325431136

Token's

To store all the Hash string (64 characters) we use 7.11 transactions. Being the unusable decimal part filled with zeros (00).

Note:

The implementation software of the above with proprietary encryption method focused on a secure messaging system for mobile devices will be available in the coming days once it is reviewed.

for more information visit:

<http://io-exchange.com>

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