



OPEN
Chain



EXPLORER & WALLET USER GUIDE

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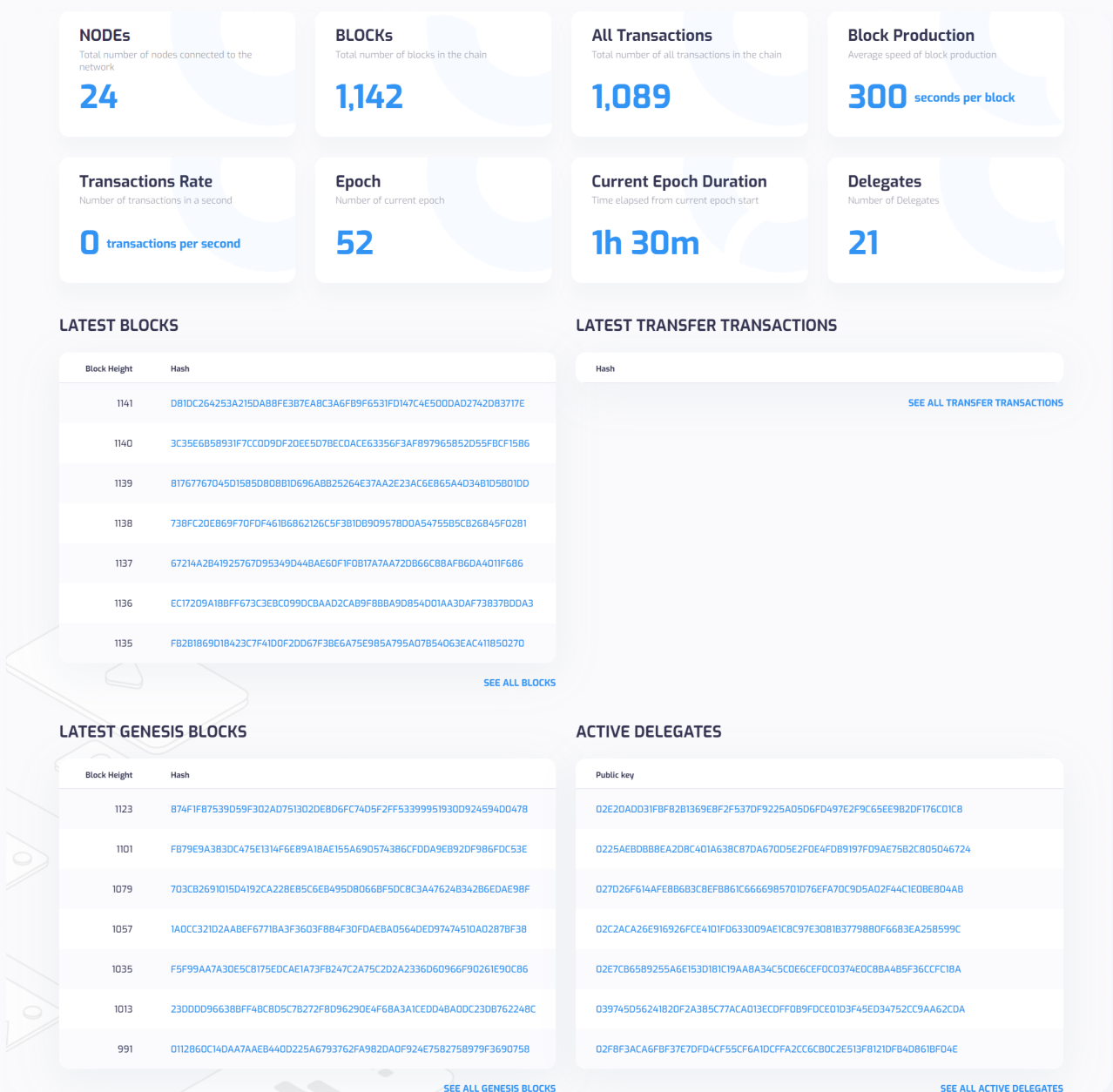
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OPEN CHAIN EXPLORER

OPEN Chain Explorer is a web application that allows viewing OPEN Chain status and statistics. Chain explorer can be found at explorer.openfuture.io



Below you can see the description of each field on Explorer page:

- **Nodes** — number of active nodes in the network
- **Blocks** — number of blocks generated by the network
- **All Transactions** — total number of transactions in the network

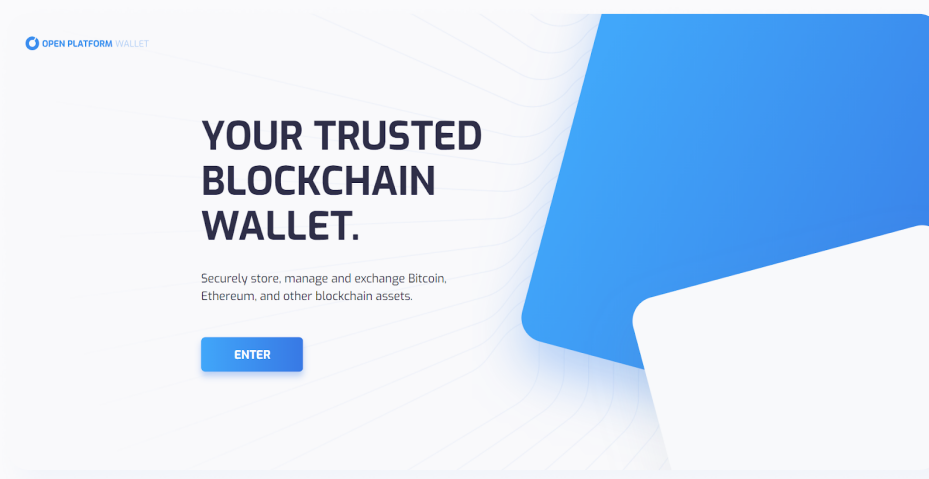
- **Block Production** — average block creation velocity in the network
- **Transactions Rate** — average transactions number per second in the network
- **Epoch** — number of current epoch
- **Current Epoch Duration** — time elapsed since current epoch start
- **Delegates** — number of active delegates producing blocks
- **Latest Blocks List** — list of latest blocks created in the network
- **Latest Transfer Transactions** — list of latest transfer transactions in the network
- **Latest Genesis Blocks** — list of latest genesis blocs in the network
- **Active Delegates** — list of active delegates in the current epoch
- **Block Information**
 - Delegate address
 - Amount
 - Previous block's hash
 - Block's hash
 - Date
 - Epoch
 - Transactions
 - Created by
 - Signature
- **Genesis Block Information**
 - Block height
 - Previous block's hash
 - Block's hash
 - Date
 - Epoch
 - Delegates
- **Active Delegate Information**
 - Address
 - Public key

OPEN CHAIN WALLET

OPEN Chain Wallet is a web application that allows interacting with the OPEN Chain (create wallet, transfer and receive OPEN tokens, delegating as an active delegate candidate and voting for active delegate candidates)

OPEN WALLET START PAGE

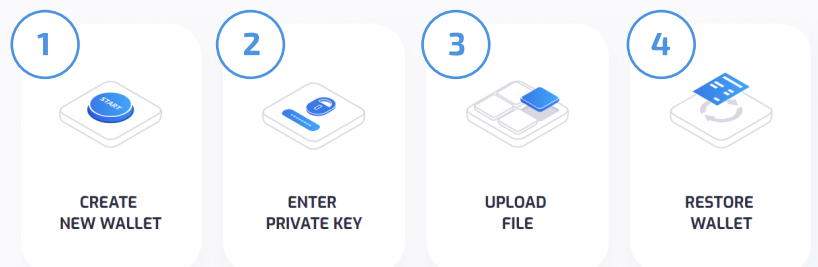
To access OPEN wallet go to localhost:8080 after running the OPEN node.



Press **"ENTER"** to go to login options.

Below you can see the description of each field on Explorer page:

- 1 Create a new wallet;
- 2 Enter the wallet using the wallet's private key;
- 3 Enter the wallet using the wallet's file;
- 4 Restore the wallet using the wallet's seed phrase;

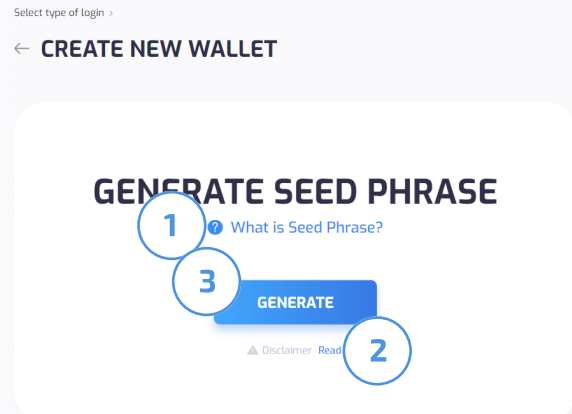


CREATING NEW OPEN WALLET

To create a new OPEN Wallet select **"CREATE NEW WALLET"** option at Start Page

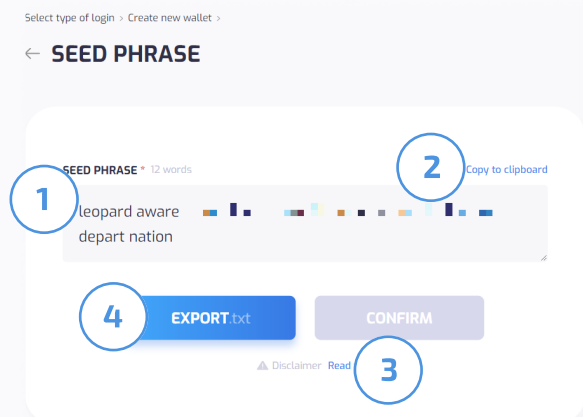
If you are not familiar with the seed phrase conception

- 1 "What is Seed Phrase" to read more about it;
- 2 "Read" to read Seed Phrase disclaimer text;
- 3 "Generate" to generate a seed phrase for your wallet;



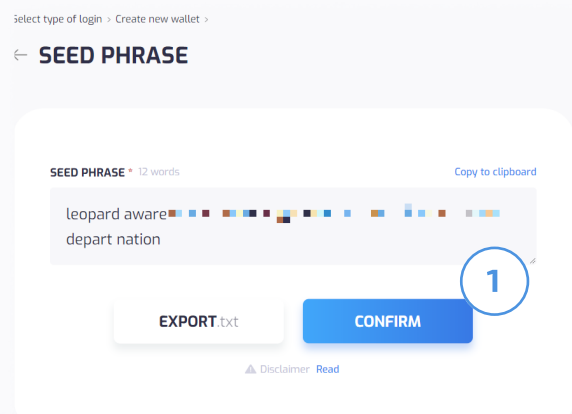
After seed phrase generation you can see your

- 1 Seed phrase;
- 2 Copy it to the clipboard;
- 3 Enter the wallet using the wallet's file;
- 4 Restore the wallet using the wallet's seed phrase;



Press 1 **"CONFIRM"** when you have securely stored the seed phrase and ready to finish wallet creation.

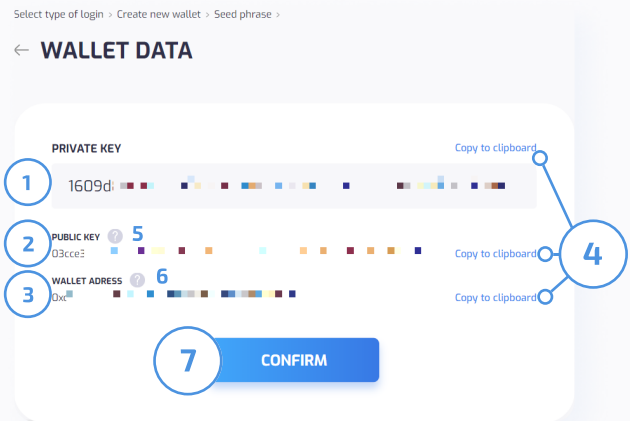
Once you press 1 **"CONFIRM"** you will be redirected to a wallet data page.



On the wallet data page, you can see

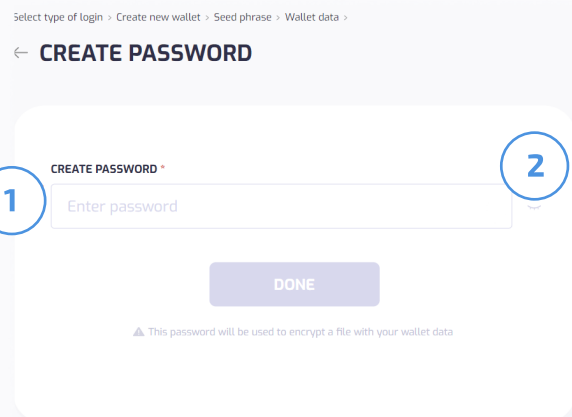
- 1 Wallet's private key;
- 2 Wallet's public key;
- 3 Wallet's address;
- 4 Copy this information to the clipboard
- 5 Read more about public key
- 6 Read more about wallet address

Once you reviewed wallet data information press **7 "CONFIRM"** to proceed to a wallet file creation.

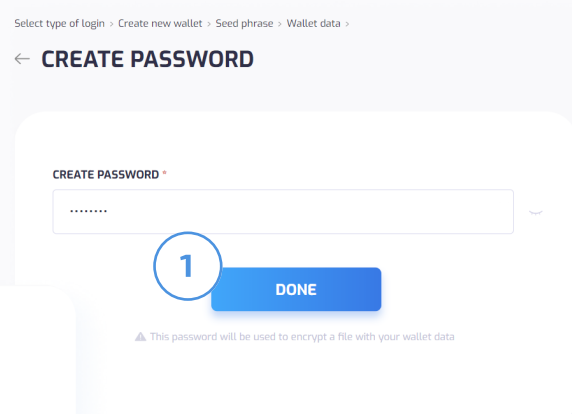


At this step, you will be asked to create a password to protect the wallet data file. Enter file password to "Create password" field **1**.

Press the "show password" button **2** to see the password you've entered.



Press **1 "DONE"** to complete the wallet creation and download the wallet data file to your computer.



WALLET REGISTRATION IS COMPLETE!

I understand that my funds are securely held by this device, not by the company, and I will store the file with the keys in a safe place

COMPLETE!

LOGIN TO OPEN WALLET USING PRIVATE KEY

To log in to OPEN wallet using a private key enter your wallet's private key to the **"PRIVATE KEY"** field **1**.

Press the "show key" button **2** to see the private key you've entered.

Press the "show key" button **1** to see the private key you've entered.

Press **2** **"CONFIRM"** to access your wallet's dashboard.

Select type of login >

← **ENTER PRIVATE KEY**

1

PRIVATE KEY *

Private Key

2

CONFIRM

Select type of login >

← **ENTER PRIVATE KEY**

PRIVATE KEY *

.....

1

2 **CONFIRM**

LOGIN TO OPEN WALLET USING WALLET DATA FILE

Press **1** **"SELECT FILE"** to select the wallet data file path and upload it to the wallet page.

Select type of login >

← **UPLOAD FILE**

1

SELECT FILE *

Select file

ENTER PASSWORD *

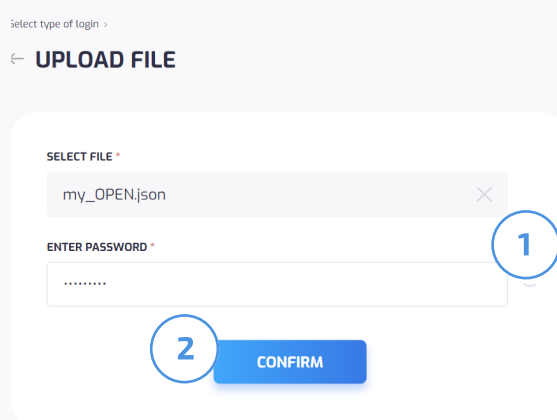
Enter password

CONFIRM

Enter wallet data file password to **"ENTER PASSWORD"** field.

Press the "show password" button **1** to see the password you've entered.

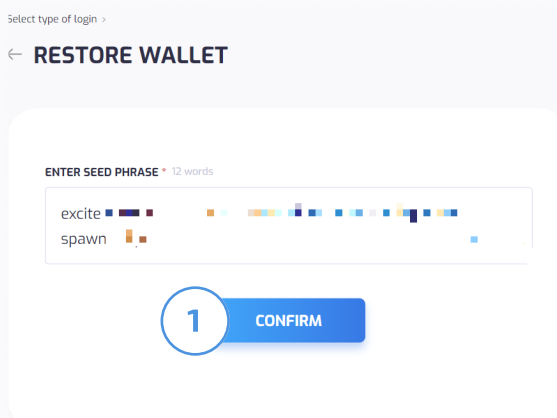
Press **2 "CONFIRM"** to access your wallet's dashboard.



RESTORING OPEN WALLET USING SEED PHRASE

Enter your wallet's seed phrase to restore the wallet in **"ENTER SEED PHRASE"** field and press **1 "CONFIRM"**.

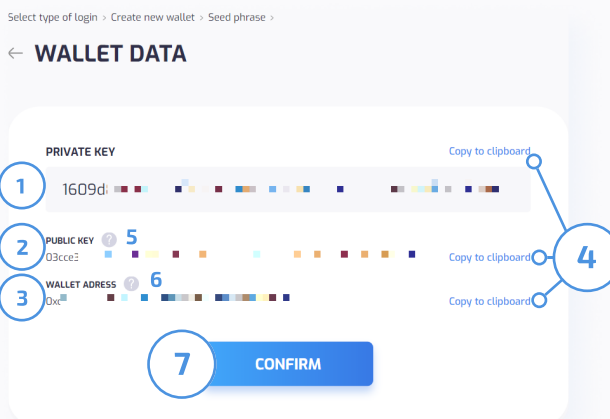
Once you press **1 "CONFIRM"** you will be redirected to a wallet data page.



On the wallet data page, you can see

- 1** Wallet's private key;
- 2** Wallet's public key;
- 3** Wallet's address;
- 4** Copy this information to the clipboard
- 5** Read more about public key
- 6** Read more about wallet address

Once you reviewed wallet data information press **7 "CONFIRM"** to proceed to a wallet file creation.



At this step, you will be asked to create a password to protect the wallet data file. Enter file password to "Create password" field 1.

Press the "show password" button 2 to see the password you've entered.

Press 1 "DONE" to complete the wallet creation and download the wallet data file to your computer.

Select type of login > Create new wallet > Seed phrase > Wallet data >

← CREATE PASSWORD

Select type of login > Create new wallet > Seed phrase > Wallet data >

← CREATE PASSWORD

WALLET DASHBOARD

WALLET BALANCE
1528 OPEN

WALLET ADDRESS
0x51c5311f25206de4a9c6e...
Copy to clipboard

DELEGATES

Rank	Address	Amount of votes
1	0x51c5311f25206de4a9c6e...	0
2	0x51c5311f25206de4a9c6e...	0
3	0x51c5311f25206de4a9c6e...	0
4	0x51c5311f25206de4a9c6e...	0

LAST TRANSACTIONS

Hash	From	To	Date	Amount OPEN	Fee OPEN
9a09499e18148c0be9e6da...	0x51c5311f25206de4a9c6e...	Contract: 0x40DE67aE0C29...	2019-02-21, 14:10:26 UTC	12	28
4ce31d98d47d044e6162f09...	0x51c5311f25206de4a9c6e...	Smart contract deploy	2019-02-21, 14:06:46 UTC	0	10
d683699cd8727b39e40b...	0x51c5311f25206de4a9c6e...	Smart contract deploy	2019-02-21, 14:05:55 UTC	0	28
ab93ca93df4ba63a59bb67...	0x51c5311f25206de4a9c6e...	0xadDC3d36F96CaaF256...	2019-02-21, 14:02:54 UTC	10	1
94a2be55f1f73e7fa0eb7b6f...	0x51c5311f25206de4a9c6e...	0x3ecB577F110a7Caa7B8d...	2019-02-21, 14:02:39 UTC	120	1
f627d4da526b11aee9043fd...	0x51c5311f25206de4a9c6e...	0x3ecB577F110a7Caa7B8d...	2019-02-21, 14:02:21 UTC	50	0

Buttons: Create transaction, Vote, View all delegates, View All Transactions

After log in to OPEN Wallet you will see the Wallet dashboard that contains following:

- 1 Dashboard menu section;
- 2 Wallet menu section;
- 3 Delegates menu section;
- 4 Log out button
- 5 Wallet info section
- 6 Last transactions section
- 7 Wallet balance
- 8 Wallet address
- 9 Copy to the clipboard option
- 10 Create transaction
- 11 View all transactions
- 12 Delegates section and vote button
- 13 View all delegates

TRANSACTIONS TABLE

OPEN PLATFORM WALLET | DASHBOARD | WALLET | DELEGATES | 1528 OPEN

WALLET BALANCE
1528 OPEN

WALLET ADDRESS
0x51c5311f25206de4a9c6ecAa1Bc2Be257BD...
[Copy to clipboard](#)

DELEGATES
[Vote](#)

Rank	Address	Amount of votes
1	0x51c5311f25206de4a9c6e...	0
2	0x51c5311f25206de4a9c6e...	0
3	0x51c5311f25206de4a9c6e...	0
4	0x51c5311f25206de4a9c6e...	0

[View all delegates](#)

LAST TRANSACTIONS
[Create transaction](#)

Hash	From	To	Date	Amount OPEN	Fee OPEN
1 9a09499e18148c0be9e5da...	2 0x51c5311f25206de4a...	3 Contract: 0x400E67aE0C25...	2019-02-21, 14:10:26 UTC	12	28
4ce31d98d47a044e6162f09...	0x51c5311f25206de4a...	4 Smart contract deploy	2019-02-21, 14:06:46 UTC	0	10
d683699d7d8727b39d40b...	0x51c5311f25206de4a9c6...	Smart contract deploy	2019-02-21, 14:05:55 UTC	0	28
ab93ca93df4ba63a59bb67...	0x51c5311f25206de4a9c6...	0xadDC3d36f96CaaF256...	2019-02-21, 14:02:54 UTC	10	1
94a2be55f1f73e71a0eb7b6f...	0x51c5311f25206de4a9c6...	0x3ecB577F110a7Caaa78Bd...	2019-02-21, 14:02:39 UTC	120	1
f627d4da526b1aee9043fd...	0x51c5311f25206de4a9c6...	0x3ecB577F110a7Caaa78Bd...	2019-02-21, 14:02:21 UTC	50	0

[View All Transactions](#)

- 1 Blue-coloured hash — transaction is executed successfully ;
- 2 Red-coloured hash — transaction failed, transaction may fail in case the lack of sum necessary for the contract execution;
- 3 If transaction is intended for the contract execution, "Contract x" (where x — is the contract address) will be displayed in the field "Contract";
- 4 If the transaction is intended for the contract deploy, "Smart Contract Deploy" will be displayed in the field "TO";

WALLET MENU

The screenshot displays the 'WALLET' menu of the 'OPEN PLATFORM'. It features two main sections: 'CREATE TRANSACTION' (marked with a blue circle 1) and 'LAST TRANSACTIONS' (marked with a blue circle 2).

CREATE TRANSACTION Section:

- FROM:** A text field containing the address `0x51c531f25206de4a9c6ecAa1Bc28e257f`.
- TO:** A text field labeled 'Wallet Address'.
- DATA:** A text field labeled 'Data' with an 'ESTIMATE' button next to it.
- AMOUNT *:** A text field labeled 'Amount'.
- FEE *:** A text field labeled 'Fee'.
- CONFIRM:** A button at the bottom of the form.

LAST TRANSACTIONS Section:

Hash	From	To	Date	Amount OPEN	Fee OPEN
9a09499e18148c0be9e6da...	0x51c531f25206de4a9c6...	Contract: 0x400E67aE0C25...	2019-02-21, 14:10:26 UTC	12	28
4ce31d98d47a044e6162f09...	0x51c531f25206de4a9c6...	Smart contract deploy	2019-02-21, 14:06:46 UTC	0	10
d683699d7d8727b39d40b...	0x51c531f25206de4a9c6...	Smart contract deploy	2019-02-21, 14:05:55 UTC	0	28
ab93ca93d4ba63a59bb67...	0x51c531f25206de4a9c6...	0xadDC3d036f96CaaF256...	2019-02-21, 14:02:54 UTC	10	1
94a2be55f173e7fa0eb7b6f...	0x51c531f25206de4a9c6...	0x3ecB577F110a7Caa7B8d...	2019-02-21, 14:02:39 UTC	120	1
f627d4da526b1aee9043fd...	0x51c531f25206de4a9c6...	0x3ecB577F110a7Caa7B8d...	2019-02-21, 14:02:21 UTC	50	0

Wallet menu contains the following blocks:

- 1 Create transaction menu;
- 2 Last transactions menu;

CREATING TRANSACTION

To create a transaction use "CREATE TRANSACTION" menu where

- 1 Sender address (filled automatically with wallets address);
- 2 Recipient address;
- 3 Transaction data;
- 4 Estimate Button
- 5 Transfer amount
- 6 Transaction fee amount
- 7 Confirmation Button

Estimate Button 4 :

— is activated only when the data is entered (when we are working with the smart contract)

— while pushing the button the minimal sum necessary for the contract deploy/contract execution is displayed in the field "**FEE**" 6 (more sources can be transferred for the contract execution, and the exchange will be returned to User)

Press 6 "**CONFIRM**" to proceed to transaction confirmation

The screenshot shows a 'CREATE TRANSACTION' form with the following elements:

- FROM**: A text field containing the address `0x51c5311F25206De4A9C6ecAa1Bc2Be257I`, marked with a circled 1.
- TO**: A text field containing the address `0x400E67aE0C25f96eB18fA3F9cCcD1174b1`, marked with a circled 2.
- DATA**: A text field containing the word `execute`, marked with a circled 3.
- ESTIMATE**: A blue button with a white circled 4, located to the right of the DATA field.
- AMOUNT ***: A text field containing the number `12`, marked with a circled 5.
- FEE ***: A text field containing the number `28`, marked with a circled 6. Above this field is the text "Remember to estimate".
- CONFIRM**: A large blue button at the bottom, marked with a circled 7.

CONFIRM TRANSACTION

FROM	0X51C5311F25206DE4A9C6ECA1BC2BE257B0BA1FB
TO	0X400E67AE0C25F96EB18FA3F9CCCD1174B1E11917
DATA	EXECUTE
AMOUNT	12 OPEN
FEE	28 OPEN

1

CONFIRM

2

CANCEL

Review the transaction information and press **1 "CONFIRM"** to confirm the transaction or **2 "CANCEL"** to cancel the transaction.

In case transaction is executed successfully the following info is displayed in User's Wallet.



TRANSACTION SENT!

DONE

Once the transaction is confirmed it will be sent to the OPEN Chain.

While clicking Confirmation Button **7** User will be able to see the whole transaction info the results.

TRANSACTION INFO

HASH	9A09499E18148C0BE9E6DAD85028DCD385D2F3A6F58132D1F2296CB27792D91A
STATUS	SUCCESS
BLOCK	965DC4EF8BC5833C2729C308F578F9CC3CC96FE3E6D4A9DA2A8293EDDF122B11
DATE	2019-02-21, 14:10:26 UTC
FROM	0x51c5311f25206de4a9c6ecAa18c2Be257B0bA1fb
TO	Contract: 0x400E67aE0C25f96eB18fA3F9cCd1174b1E11917
AMOUNT	12
RESULTS	
FROM:	0x51c5311f25206de4a9c6ecAa18c2Be257B0bA1fb
TO:	0x400E67aE0C25f96eB18fA3F9cCd1174b1E11917
AMOUNT:	12
FROM:	0x51c5311f25206de4a9c6ecAa18c2Be257B0bA1fb

In case transaction failed
the following information
is displayed in User's Wallet:

TRANSACTION INFO

HASH	4CE31D98D47A044E6162F09BA373D5948BB4A5F0075D2EDC38FC8F98968CF1CD
STATUS	FAILED
BLOCK	24E5FCDD50CB02F302F8D44F33DCAEBB40332C41F0CC67D2A5CC9B5069A684A8
DATE	2019-02-21, 14:06:46 UTC
FROM	0x51c5311F25206De4A9C6ecAa1Bc2Be257B0bA1fb
TO	Smart contract deploy
AMOUNT	0
RESULTS	
FROM:	0x51c5311F25206De4A9C6ecAa1Bc2Be257B0bA1fb
TO:	0x51c5311F25206De4A9C6ecAa1Bc2Be257B0bA1fb
AMOUNT:	10

TRANSACTION TYPES

— Money Transferring (in this case the field "DATA" is not used)

CREATE TRANSACTION

FROM

0x51c5311F25206De4A9C6ecAa1Bc2Be2571

TO

0x3ecB577F110a7Caaa7B8deE5eE63CFcd24

DATA

Data

ESTIMATE

AMOUNT *

50

FEE *

0

CONFIRM

CONFIRM TRANSACTION

FROM

0x51c5311F25206De4A9C6ecAa1Bc2Be257B0bA1FB

TO

0x3ECB577F110A7CAAA7B8DEE5EE63CFCD2475F1FD

AMOUNT

50 OPEN

FEE

0 OPEN

CONFIRM

CANCEL

— Contract Deploy (the field **"TO"** is empty, the field **"DATA"** is the byte code of the contract, **"FEE"** is the sum of money necessary for the deploy)

CREATE TRANSACTION

FROM

Ox51c5311f25206De4A9C6ecAa1Bc2Be2571

TO

Wallet Address

DATA

cafebabe000000340026 **ESTIMATE**

AMOUNT *

Amount

FEE * Remember to estimate

28

CONFIRM

CONFIRM TRANSACTION

FROM OX51C5311F25206DE4A9C6ECA1BC2BE257B0BA1FB

DATA CAFEABAE000000340026010013742F496E6372656D
656E74436F6E7472616374070001010035696F2F6F7
0656E6675747572652F636861696E2F736D61727463
6F6E74726163742F6D6F64656C2F536D617274436F6
E747261637407000301000576616C75650100014901

AMOUNT 0 OPEN

FEE 28 OPEN

CONFIRM **CANCEL**

— Contract Execution (the field **"TO"** — the contract address, **"DATA"** — the name of contract method, **"FEE"** — the sum of money necessary for method execution, **"AMOUNT"** — the internal resources of contract: for example, they can be used for transferring money from the contract code)

CREATE TRANSACTION

FROM

Ox51c5311f25206De4A9C6ecAa1Bc2Be2571

TO

Ox400E67aEOC25f96eB18fA3F9cCcD1174b1

DATA

execute **ESTIMATE**

AMOUNT *

12

FEE * Remember to estimate

28

CONFIRM

CONFIRM TRANSACTION

FROM OX51C5311F25206DE4A9C6ECA1BC2BE257B0BA1FB

TO OX400E67AE0C25F96EB18FA3F9CCCD1174B1E11917

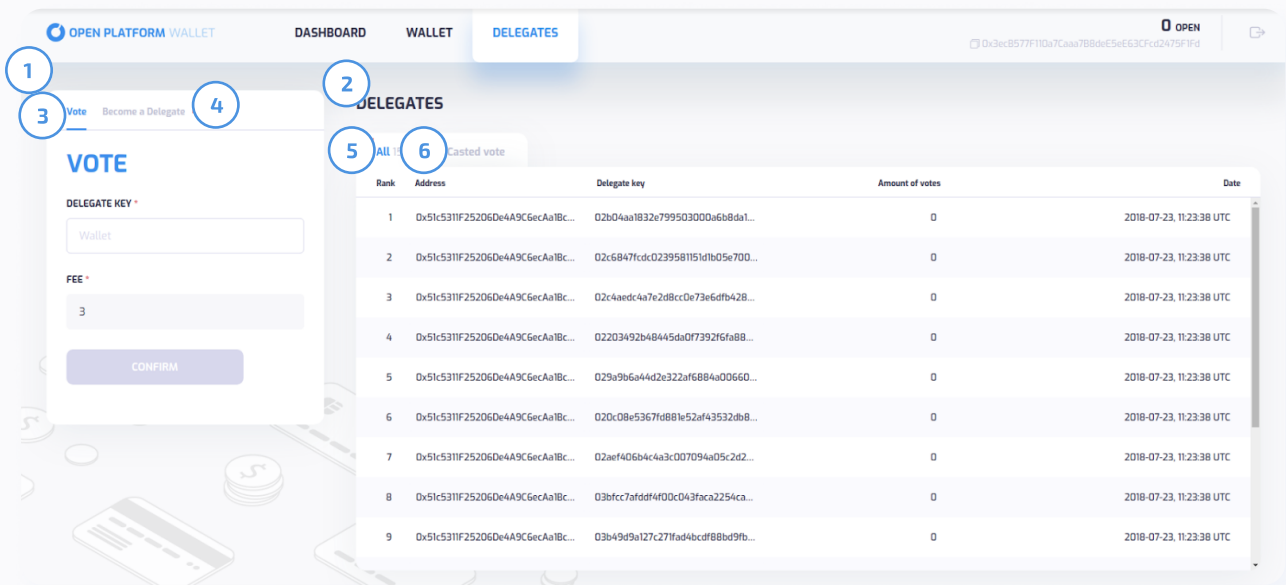
DATA EXECUTE

AMOUNT 12 OPEN

FEE 28 OPEN

CONFIRM **CANCEL**

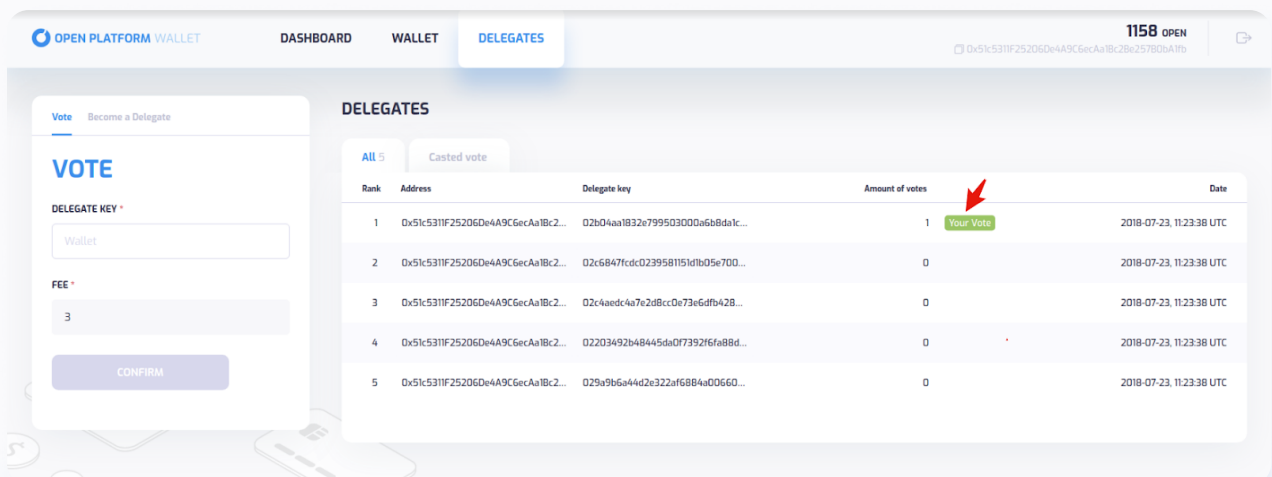
DELEGATES MENU



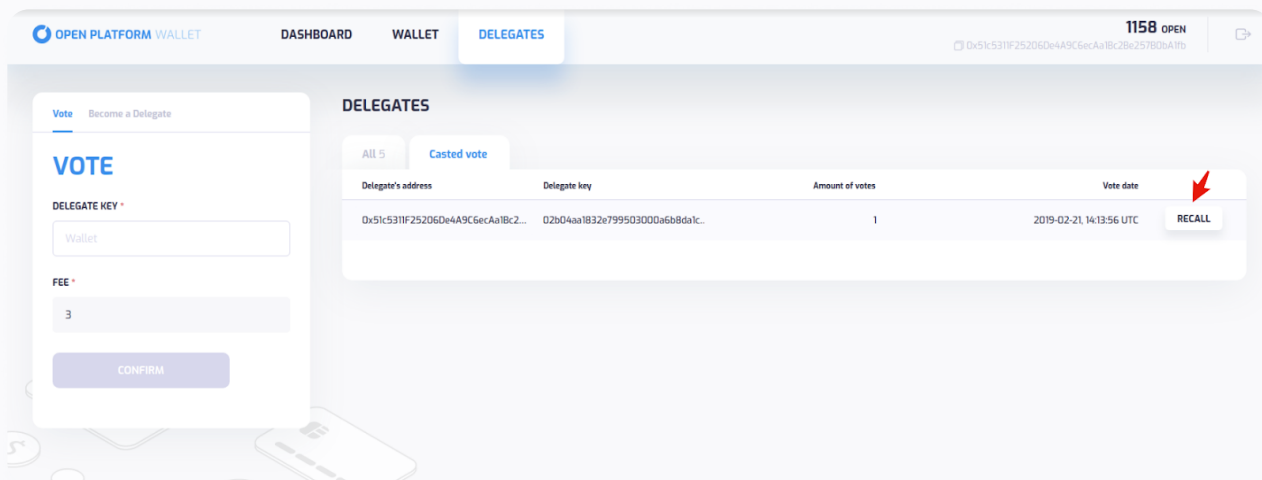
In the delegates menu you can find:

- 1 Vote and Delegate section;
- 2 Delegates section;
- 3 Vote for a delegate tab;
- 4 Becoming a delegate tab;
- 5 All delegates tab;
- 6 Your votes tab;

— Contract Deploy (the field "TO" is empty, the field "DATA" is the byte code of the contract, "FEE" is the sum of money necessary for the deploy)



— The button “**RECALL**” allows User to recall his voice in case he is not sure about his choice on the delegate selected.



After pushing the button “Recall Vote” the pop-up window “Recall Vote” appears on User’s screen with the delegate’s address and amount of fee.

RECALL VOTE

- 1 **DELEGATE'S ADDRESS** 02B04AA1832E799503000A6B8DA1CDBB737C167FC829472C726A12AD9A4CCF24EB
- 2 **FEE** 1 OPEN
- 3 **CONFIRM**
- 4 **CANCEL**

After the vote is successfully recalled by system the pop-up window “Recall vote sent successfully” appears on User’s screen.

Recall vote sent successfully!

OK

DELEGATING NODE

Go to Becoming a delegate tab to nominate your node for active delegate

To nominate your node review following information:

- 1 Your node network ID;
- 2 Delegation fee amount (flat fee);
- 3 Transaction fee (flat fee);

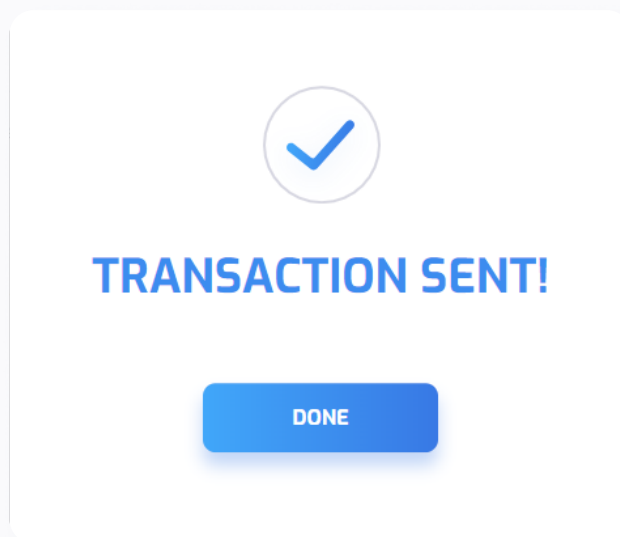
Press 4 **"CONFIRM"** to confirm your node delegation for active delegate.

The screenshot shows a mobile app interface for becoming a delegate. At the top, there are two tabs: 'Vote' and 'Become a Delegate', with the latter being selected. Below the tabs is the title 'BECOME A DELEGATE'. Underneath, there is a section labeled 'DELEGATE KEY' with a text input field containing the value '0322ddb0fd4b1555b48b01a252c9958d08'. Below this is a section labeled 'AMOUNT *' with a text input field containing the value '10'. Below that is a section labeled 'FEE *' with a text input field containing the value '3'. At the bottom, there is a large blue button labeled 'CONFIRM'. Numbered circles 1 through 4 are overlaid on the screen to indicate the sequence of steps: 1 points to the delegate key, 2 points to the amount, 3 points to the fee, and 4 points to the confirm button.

Review the transaction information and press 1 **"CONFIRM"** to confirm the transaction or 2 **"CANCEL"** to cancel the transaction.

The screenshot shows a mobile app interface for becoming a delegate, displaying transaction details. At the top, there is the title 'BECOME A DELEGATE'. Below the title, there is a section labeled 'DELEGATE KEY' with a text input field containing the value '0322DDB0FD4B1555B48B01A252C9958D08'. Below this is a section labeled 'AMOUNT' with a text input field containing the value '10'. Below that is a section labeled 'FEE' with a text input field containing the value '3 OPEN'. At the bottom, there are two buttons: a large blue button labeled 'CONFIRM' and a smaller blue button labeled 'CANCEL'. Numbered circles 1 and 2 are overlaid on the screen to indicate the sequence of steps: 1 points to the confirm button and 2 points to the cancel button.

Once the transaction is confirmed it will be sent to the OPEN Chain.



VOTING

Go to the Vote tab to vote for a node you want to become an active delegate

Enter the node's network ID to the **"DELEGATE KEY"** field, review transaction fee (flat fee) and press **3 "CONFIRM"** to confirm your vote.

A mobile app interface for voting. At the top, there are two tabs: "Vote" (selected) and "Become a Delegate". Below the tabs is the title "VOTE" in large blue letters. Underneath is the label "DELEGATE KEY *". A text input field contains the value "0xa223C07f724D83C3Db6D0e4B3A6399e3", with a blue circle containing the number "1" to its left. Below this is the label "FEE *". A slider control shows the value "3", with a blue circle containing the number "2" to its left. At the bottom is a blue button labeled "CONFIRM", with a blue circle containing the number "3" to its left.

Review the transaction information and press **1** **"CONFIRM"** to confirm the transaction or **2** **"CANCEL"** to cancel the transaction.

VOTE

DELEGATE'S ADDRESS

OXA223C07F724D83C3DB6D0E4B3A6399E3
BF87A0DA

FEE

3 OPEN
1.5 OPEN X 2

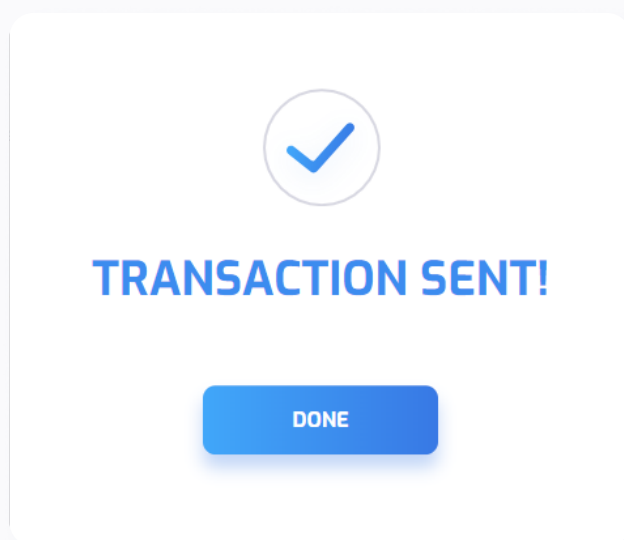
1

CONFIRM

2

CANCEL


Once the transaction is confirmed it will be sent to the OPEN Chain.



To view your votes go to Casted vote tab.

All G		Casted vote		
Delegate's address	Delegate key	Amount of votes	Vote date	
OxCb8933Eb016634452F83487420...	03b93218a64df4b09ba45cc6b41d8...	1	2019-02-12, 12:32:53 UTC	<div>1 RECALL</div>

You can recall previously casted vote by pressing **1** **"RECALL"** button.

All G		Casted vote		
Delegate's address	Delegate key	Amount of votes	Vote date	
OxCb8933Eb016634452F83487420...	03b93218a64df4b09ba45cc6b41d8...	1	2019-02-12, 12:32:53 UTC	<div>PENDING</div>

For the time of recall transaction confirmation recall button will be changed to **"PENDING"** and your vote will disappear from this section once it will be confirmed by the OPEN Chain network.