

RSU Guru Contract walkthrough

Starting contract with:

- RSU Value of →
 - 1 ETH == 1000000000000000000 wei
 - This is sent through the value of the msg when starting the contract
- Owing company will be my first accounts address →
 - 0x0205AB7aeEce38F6e362f0CFB08c2276fD711D50
- Employee will be a second account of mine →
 - 0x8fa717f666fe92D0A0FCA8073b8f3Ed0471398F3
- Vesting period will be →
 - 7200 (2 hours)
- Partial vesting period will be →
 - 3600 (1 hour)
- Partial vesting amount will be →
 - 0.5 ETH == 500000000000000000 wei
- Stock price in wei value →
 - 1000000000000000000 wei == 1 ETH

Starting the contract:

The screenshot displays the Remix Ethereum IDE interface. On the left, the 'DEPLOY & RUN TRANSACTIONS' sidebar is active, showing the 'Injected Web3' environment. The 'Account' is set to '0x020...11d50 (6.45)'. The 'Gas limit' is 4000000, and the 'Value' is 1 ether. The contract 'RSUGuru' is selected. The 'Deploy' button is highlighted. Below the deployment settings, the 'Transactions recorded: 2' and 'Deployed Contracts' sections are visible.

The main editor shows the Solidity code for the 'RSUGuru' contract. The code includes variables for company and employee addresses, stock price, vesting period, and withdrawal amounts. It also defines functions for withdrawing partial and full vested amounts, terminating an employee, and adding new RSUs.

The bottom console shows the transaction details for the deployment:

```
[block: txindex:] from:0x20...11d50 to:RSUGuru.(constructor) value:1000000000000000 wei data:0x740...0000 logs:0 hash:0x5d...0afdc
```

The status of the transaction is 'Success'.

Overview State Changes

[This is a Ropsten Testnet transaction only]

Transaction Hash:	0x73cf486c5dfe77960781796b5880094cfc0c146742213aec9f9c0fd6d8265bdc
Status:	Success
Block:	6845965 3 Block Confirmations
Timestamp:	57 secs ago (Nov-25-2019 04:12:48 PM +UTC)
From:	0x0205ab7aeec38f6e362f0cfb08c2276fd711d50
To:	[Contract 0xe646df086da361d0045eb42857b8a2c21d350763 Created]
Value:	1 Ether (\$0.00)
Transaction Fee:	0.000405355 Ether (\$0.000000)

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Now I will try to withdraw the fully vested amount from the contract prior to both the vesting time and partial vesting time being up (as the employee). I'm expecting a failure:

Overview

State Changes

[This is a Ropsten Testnet transaction only]

Transaction Hash:

0x17aba5085cfa787c771063eaaac818157f3ef649bd462bc4a679e2128314cfed

Status:

Fail

Block:

6845986

1 Block Confirmation

Timestamp:

56 secs ago (Nov-25-2019 04:18:15 PM +UTC)

From:

0x8fa717f666fe92d0a0fca8073b8f3ed0471398f3

To:

Contract 0xe646df086da361d0045eb42857b8a2c21d350763

Warning! Error encountered during contract execution [Reverted]

Value:

0 Ether

(\$0.00)

Transaction Fee:

0.000022867 Ether (\$0.000000)

Click to see More

Now I will try to withdraw the partially vested amount from the contract prior to both the vesting time and partial vesting time being up (as the employee). I'm expecting a failure:

OverviewState Changes

[This is a Ropsten Testnet transaction only]

Transaction Hash:

0x10466352e65fb9fa1e42ad4893d219bb5fb85ac7f0ced4933590308b8acbafe

Status:

Fail

Block:

6845993

2 Block Confirmations

Timestamp:

39 secs ago (Nov-25-2019 04:20:13 PM +UTC)

From:

0x8fa717f666fe92d0a0fca8073b8f3ed0471398f3

To:

Contract 0xe646df086da361d0045eb42857b8a2c21d350763

Warning! Error encountered during contract execution [Reverted]

Value:

0 Ether (\$0.00)

Transaction Fee:

0.000022838 Ether (\$0.000000)

Click to see More

The employee got a promotion! I will now add to the RSUs as the employer (0.5 ETH):

Overview

State Changes

[This is a Ropsten Testnet transaction only]

Transaction Hash:

0x2a87202aceb0ac8ee76d7b314ea7cd14ab4d4e3b7745514a4eb4b010fb8ab479

Status:

Success

Block:

6846031

1 Block Confirmation

Timestamp:

27 secs ago (Nov-25-2019 04:29:40 PM +UTC)

From:

0x0205ab7aece38f6e362f0cfb08c2276fd711d50

To:

Contract 0xe646df086da361d0045eb42857b8a2c21d350763

Value:

0.5 Ether (\$0.00)

Transaction Fee:

0.00002954 Ether (\$0.000000)

Click to see More

Contract 0xE646DF086da361D0045eb42857B8A2c21D350763

Contract Overview

Balance: 1.5 Ether

More Info

My Name Tag: Not Available

Contract Creator: 0x0205ab7aece38f... at txn 0x73cf486c5dfe779...

Transactions

Contract

Events

Latest 4 txns








Txn Hash	Block	Age	From	To	Value	[Txn Fee]
0x2a87202aceb0ac...	6846031	1 min ago	0x0205ab7aece38f...	IN 0xe646df086da361d...	0.5 Ether	0.00002954
0x10466352e65fb9f...	6845993	10 mins ago	0x8fa717f666fe92d0...	IN 0xe646df086da361d...	0 Ether	0.000022838
0x17aba5085cfa787...	6845986	12 mins ago	0x8fa717f666fe92d0...	IN 0xe646df086da361d...	0 Ether	0.000022867
0x73cf486c5dfe779...	6845965	17 mins ago	0x0205ab7aece38f...	IN Contract Creation	1 Ether	0.000405355


[Download CSV Export]

Now, we waited a little over an hour for the partial vesting period to be up (1 hour), and now call `Withdraw_Partial_Vesting_Amount` as the employee. We expect to get back the partial vesting amount which in this case is equal to 0.5 ETH:

[Overview](#) [Internal Transactions](#) [State Changes](#)

[This is a Ropsten Testnet transaction only]

Transaction Hash:	0xdf1915e950944122493b7d0fb82d921aece72a55db3555db226cf1305ffd291d 
Status:	 Success
Block:	6846259 3 Block Confirmations
Timestamp:	55 secs ago (Nov-25-2019 05:17:23 PM +UTC)
From:	0x8fa717f666fe92d0a0fca8073b8f3ed0471398f3 
To:	 Contract 0xe646df086da361d0045eb42857b8a2c21d350763    TRANSFER 0.5 Ether From 0xe646df086da361d0045... To → 0x8fa717f666fe92d0a0fca...
Value:	0 Ether (\$0.00)
Transaction Fee:	0.000031868 Ether (\$0.000000)

[Click to see More](#) 

Now we wait for the full vesting period to be up, and call `Withdraw_Full_Vested_Amount()` as the employee. We expect to get the full vested amount back in ETH, which is just however much is left in the contract, and the contract will self destruct, sending the employee the contents of the contract. Since we've already withdrawn the partial vesting amount (0.5 ETH), but also added 0.5 ETH, we are expecting to get 1 ETH back:

Success!

The screenshot shows the Etherscan interface for a transaction on the Ropsten Testnet. The transaction is successful and has been confirmed by 5 blocks. The transaction details are as follows:

Field	Value
Transaction Hash	0x7382dc65716e1bd4f364d1ba93c0c93070e237219c656499b978221160f28f9
Status	Success
Block	6046734 (5 Block Confirmations)
Timestamp	@ 54 secs ago (Nov-25-2019 06:51:28 PM +UTC)
From	0x8fa717669e920a0fca8073b93ed0471358f3
To	Contract: 0xe646d095da361d9045eb42857b8a2c21d350763 TRANSFER 1 Ether From 0xe646d095da361d9045eb42857b8a2c21d350763 To 0x8fa717669e920a0fca8073b93ed0471358f3 SELF DESTRUCT Contract 0xe646d095da361d9045eb42857b8a2c21d350763
Value	0 Ether (\$0.00)
Transaction Fee	0.000014333 Ether (\$0.000000)

The interface also includes a search bar at the top, navigation links (Home, Blockchain, Tokens, Misc, Ropsten), and a footer with the text "Powered by Ethereum" and "Etherscan © 2019 (Ropsten)".

And the view from the contract:

Contract 0xE646DF086da361D0045eb42857B8A2c21D350763

Overview

Balance:0 Ether

More Info

My Name Tag:Not Available

Contract Creator:0x0205ab7aece38f... at txn 0x73cf486c5dfe779...

TransactionsInternal TxnsContract Self Destruct

Latest 6 txns

Txn Hash	Block	Age	From	To	Value	[Txn Fee]
0x7382dc65716e1b...	6846734	2 mins ago	0x8fa717f666fe92d0...	IN 0xe646df086da361d...	0 Ether	0.000014333
0xdf1915e95094412...	6846259	1 hr 36 mins ago	0x8fa717f666fe92d0...	IN 0xe646df086da361d...	0 Ether	0.000031888
0x2a8720aceb0ac...	6846031	2 hrs 24 mins ago	0x0205ab7aece38f...	IN 0xe646df086da361d...	0.5 Ether	0.00002954
0x10466352e65fb9f...	6845993	2 hrs 33 mins ago	0x8fa717f666fe92d0...	IN 0xe646df086da361d...	0 Ether	0.000022838
0x17aba5085cfa787...	6845986	2 hrs 35 mins ago	0x8fa717f666fe92d0...	IN 0xe646df086da361d...	0 Ether	0.000022887
0x73cf486c5dfe779...	6845965	2 hrs 41 mins ago	0x0205ab7aece38f...	IN Contract Creation	1 Ether	0.000405355

[Download CSV Export]