
Catamaran Swaps

friedger.btc

Sep 12, 2023

CONTENTS:

- 1 Catamaran Swaps 3**
 - 1.1 BTC - STX 3

- 2 Atomic Swaps 5**
 - 2.1 STX - any FT 5
 - 2.2 STX - MIA 8
 - 2.3 STX - FARI 8
 - 2.4 STX - NYCC 9
 - 2.5 Smart Contract 9

- 3 Frequently Asked Questions 11**
 - 3.1 What can go wrong with catamaran swaps (BTC - STX)? 11
 - 3.2 What can go wrong with atomic swaps? 11
 - 3.3 Where can I get FRIE tokens to pay fees? 11
 - 3.4 Where can I find more details about the used smart contracts? 11
 - 3.5 What was the first swap? 12

- 4 Terms and Conditions 13**

- 5 Features 15**

- 6 Find a Swapping Partner 17**

- 7 Naming 19**



CATAMARAN SWAPS

Catamaran Swaps are trustless exchanges between owners of Bitcoins and owners of digital assets on the Stacks blockchain.

Currently, only swaps between BTC and STX are supported in the web app.

1.1 BTC - STX

A swap consists of three steps:

1. the seller of STX has to put STX into escrow.
2. the buyer of BTC makes a btc transaction to the specified BTC address of the seller.
3. the seller or buyer submits the transaction id of the bitcoin transaction and the escrowed STX are released.

note

currently, many restrictions apply to the bitcoin transaction for catamaran swaps. This means that swapping partners need to trust each other in case the BTC tx could not be verified.

Segwit transactions are not supported. Transaction with many inputs or outputs can't be verified neither. These restrictions will be hopefully lifted with Stacks 2.1.

1.1.1 Create a Swap

The seller of STX creates the swap.

Create Swap BTC-STX

Your stacks are sent to the contract now and will be released to the buyer if the BTC transaction is verified (or back to you if the swap expired after 100 Stacks blocks and you called "cancel").

The interface shows a swap creation process. At the top, a Bitcoin icon is above an input field containing '1'. Below this is a right-pointing arrow. In the center, the text '3,500 SATS / STX' is displayed. Below this is a left-pointing arrow. At the bottom, a Stacks icon is above an input field containing '0.000035'. A blue button labeled 'Sell STX' is positioned below the bottom input field. On the left side, there is a box labeled 'Seller (You) SP384...SAPVB' with a sub-label 'Bitcoin recipient address (must start with)'. On the right side, there is a box labeled 'Buyer' with a sub-label 'stacks receiver's Stacks address'.

After the clicking on “Sell STX”, the Hiro Wallet will popup and ask the seller to confirm the tx. The transaction result contains the swap id that must be shared with the buyer. The result looks something like this:

(ok u72)

The details of the swap can then be found at <https://catamaranswaps.org/stx/swap/72>.

1.1.2 Make a Bitcoin transaction

The buyer of STX makes a Bitcoin transaction of the agreed amount to the BTC address of the seller. The buyer can choose any Bitcoin wallet that supports legacy transactions. Note, that restrictions apply, therefore, the BTC transactions have to be created carefully.

1.1.3 Finalize Swap

The last step requires to submit the Bitcoin transaction to the Stacks network.

1.1.4 Smart Contract

The smart contract was deployed at `btc-stx-swap-v1` by `SP2PABAF9FTAJYNFZH93XENAJ8FVY99RRM50D2JG9`.

ATOMIC SWAPS

Atomic swaps are trustless exchanges between digital assets of two users of the Stacks blockchain. Currently, exchanges between STX and any SIP-010 compliant fungible tokens (FT) are supported.

2.1 STX - any FT

A swap consists of two steps:

1. the buyer of the fungible token has to put STX into escrow.
2. the seller of the fungible token sends the fungible token to the buyer and receives the STX in the same transaction.

A fee of 1% is applied. It is paid by the buyer in STX or FRIE tokens. It is hold in escrow and released when the swap was completed.

All swaps can be canceled after 100 blocks.

2.1.1 Create a Swap

The buyer of the fungible token creates the swap.

Create Swap STX-FT

For a swap of Stacks and a token on Stacks, the token has to comply with SIP-10.

Your Stacks tokens will be sent to the contract now (including 1% fees) and will be released to the buyer if the tokens are transferred to you. If the swap expired after 100 Stacks blocks and you called "cancel" your Stacks tokens including fees are returned to you.

```
SPN4Y5QPGQA8882ZXW90ADC2DHYXMSTN8VAR8C3X.friedger-token-v1::friedger
```


The interface displays a swap configuration for STX and FT. At the top, a dollar sign icon is shown. Below it, a text input field contains '1000' with a right-pointing arrow. To the left of this field is a label 'Seller' and a text input field containing 'Stacks address or name (optior)'. In the center, the text '0.01 STX / FT' is displayed with a right-pointing arrow above it and a left-pointing arrow below it. To the right of this text is a label 'Buyer (You)' and a text input field containing 'SPN4Y...R8C3X'. Below the central text is another text input field containing '10' with a right-pointing arrow. At the bottom, a dropdown menu shows '1% fee in STX' with a downward arrow. A blue button labeled 'Buy FT' is positioned below the dropdown menu. A blue circular icon with a white star-like symbol is located below the '10' input field.

After the clicking on “Buy FT”, the Hiro Wallet will popup and ask the buyer to confirm the tx.

Extension: (Hiro Wallet) - Hiro Wallet — Mozilla Firefox

Requested by "Catamaran Swaps" (www.catamaranswaps.org)


You will transfer exactly

 **STX** 10.1

STX SPN4...8C3X

You will transfer exactly 10.1 STX or the transaction will abort.

Function and arguments

 **create-swap**
SP2P...2JG9.stx-ft-swap-v1

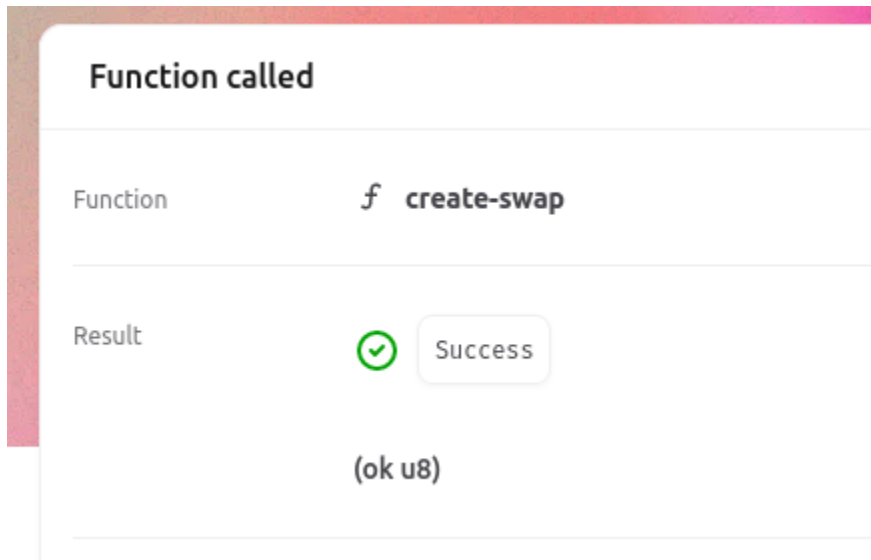
ustx	uint
u10000000	
amount	uint
u1000000000	
ft-sender	(optional none)
none	
ft	principal
SPN4Y5QPGQA8882ZXW90ADC2DHYXMSTN8VAR8C3X.friedger-toke	
n-v1	
fees	principal
SP2PABAF9FTAJYNFZH93XENAJ8FVY99RRM50D2JG9.stx-ft-swap-v1	
-fixed-fees	

Fees Standard 0.75 STX

If you as a seller want to buy from a particular user, you can enter the stx address or the username of the user in the optional seller field.

Swap ID

The transaction result contains the **swap id** that must be shared with the seller. The transaction result looks something like this:



The details of the swap with id 8 can then be found at <https://catamaranswaps.org/stx-ft/swap/8>. For other swaps, just replace the id at the end of the link.

2.1.2 Finalize Swap

The seller of the FT have to confirm the swap conditions

2.2 STX - MIA

Follow the steps of any fungible token. For the links to a swap, you can use `stx-mia` instead of the `stx-ft`.

2.3 STX - FARI

Follow the steps of any fungible token. The token identifier is prefilled if used `stx-fari` instead of the `stx-ft`. The start url is <https://catamaranswaps.org/stx-fari>.

Example of a completed swap: <https://catamaranswaps.org/stx-fari/swap/15>.

2.4 STX - NYCC

Follow the steps of any fungible token using the following url:

<https://www.catamaranswaps.org/stx-ft/SP2H8PY27SEZ03MWRKS5XABZYQN17ETGQS3527SA5.newyorkcitycoin-token::newyorkcitycoin>.

Example of a completed swap: <https://catamaranswaps.org/stx-ft/swap/77>.

2.5 Smart Contract

The smart contract was deployed at `stx-ft-swap-v1` by `SP2PABAF9FTAJYNFZH93XENAJ8FVY99RRM50D2JG9`.

The fee contracts are

- **STX fees:** `stx-ft-swap-v1-fixed-fees` by `SP2PABAF9FTAJYNFZH93XENAJ8FVY99RRM50D2JG9`
- **FRIE fees:** `stx-ft-swap-v1-fixed-frie-fees` by `SP2PABAF9FTAJYNFZH93XENAJ8FVY99RRM50D2JG9`

FREQUENTLY ASKED QUESTIONS

3.1 What can go wrong with catamaran swaps (BTC - STX)?

With Stacks 2.0x, it can happen that Bitcoin transactions can't be verified on the Stacks blockchain due to so-called flash blocks. These Bitcoin blocks were not mined by Stacks miners and they are not visible to the Stacks blockchain. This changes with Stacks 2.1. Therefore, only use these swaps with users that you trust to resolve such a case off-chain.

3.2 What can go wrong with atomic swaps?

- When creating the swap, you could enter the wrong token, you could enter the wrong amount, the UI could calculate the smallest unit of tokens incorrectly. **Check all details when signing the transaction!**
- When finalizing the swap, you could have used the wrong swap id. **Check all details when signing the transaction!**

The swap can be canceled after 100 blocks. Therefore, make sure that the swap is finalized before. Use a suitable fee.

3.3 Where can I get FRIE tokens to pay fees?

FRIE tokens can be minted at a price of 1 STX = 1 FRIE. The token contract can be found e.g. at [Stacks explorer \(friedger.btc.friedger-token-v1\)](#). All minting fees go to friedger.btc.

Currently, there is no UI to mint FRIE tokens. Some tokens were distributed as a bonus by Friedger Pool during cycle #16.

3.4 Where can I find more details about the used smart contracts?

The smart contracts are open source and contains several tests. You find the git repo at github.com/friedger/clarity-catamaranswaps.

3.5 What was the first swap?

Read about the first swap of an NFT on Stacks for Bitcoins [here](#).

TERMS AND CONDITIONS

This documentation provides a short overview of the web application hosted at catamaranswaps.org.

Users of this documentation agree that this documentation is for information purpose only. It is not an endorsement of any digital assets or cryptocurrencies. Users must not take this documentation as financial advise.

The documentation might be inaccurate or out-dated.

Users are encourage to contribute to the documentation.

The documentation can be used free of charge.

FEATURES

catamaranswaps.org provides a web interface to two types of trustless swaps:

- *Catamaran Swaps* between the bitcoin network and the stacks network.
- *Atomic Swaps* between assets only on the stacks network.

Swaps can be canceled after 100 blocks.

Users are required to have the [Hiro Wallet web extension](#) installed.

FIND A SWAPPING PARTNER

The web application does not provide any tools to find a partner to swap assets, nor does it help to determine a price.

NAMING

Swaps between Bitcoin and Stacks are called *Catamaran Swaps* because - unlike [Submarine Swap](#) - the two parts happen on-chain/above water, just on two different chains.