

How to create NFTs on Cardano Blockchain?

 leewayhertz.com/create-nfts-on-cardano

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NFTs have existed since 2014, and are now gaining popularity in the field of trading digital artwork. Since November 2017, an astounding \$174 million has been spent on NFTs. Additionally, NFTs are typically one-of-a-kind, one of a minimal run, and have unique identifying codes. “In essence, NFTs create digital scarcity,” Arry Yu, chair of the Washington Technology Industry Association’s Cascadia Blockchain Council and managing director of Yellow Umbrella Ventures, explains. This explanation is striking compared to most digital creations, which are primarily available in an infinite quantity. Cutoff of supply should theoretically increase the value of a given asset, presuming it is in demand.

Non-fungible tokens are made up of identifying information that is stored in Smart Contracts. This information distinguishes NFTs and makes them irreplaceable by any other token. NFT indivisibility can be defined as the inability to share or send a portion of your concert ticket. That fractional portion of the ticket is worthless and unredeemable.

With rising NFT blockchain platforms’ growth, it is important to filter the choice of platform for better digital transaction performance. Platforms like Ethereum, Flow blockchain, Polygon(Matic); have been competing in terms of better transaction speed and security. Then comes the blockchain platform named Cardano with assured attributes of verification, security, fast pace; and a smooth flow of exchangeability.

What is a Cardano Blockchain?

Cardano is a distributed proof-of-stake blockchain platform of the third generation. While Cardano shares characteristics and applications with other blockchain platforms such as Ethereum, it differentiates itself from the competition by committing to peer-reviewed scientific research as the foundation for platform updates.

Cardano was established in 2015 by Charles Hoskinson, a co-founder of Ethereum. Cardano has placed itself as an Ethereum-alternative. Both systems are used for similar programs, such as smart contracts, and both strive to create a decentralized and connected system. Cardano views itself as an improved version of Ethereum and has dubbed itself a third-generation platform in comparison to Ethereum's second-generation credentials. Additionally, the blockchain platform aims to provide banking services to the world's unbanked.

Cardano has risen to prominence as a blockchain platform, following Bitcoin and Ethereum. However, this was not always the case. Not long ago, Cardano's native cryptocurrency, ADA, had plummeted to an all-time low of less than US\$0.02. However, a great thing has happened in the last year. Since then, ADA has increased nearly 7,400%. Cardano's ADA coin is now the world's third-largest cryptocurrency by market capitalization, behind bitcoin and Ethereum's ETH, as per the time of publication.

Given the current hype surrounding NFTs, you may consider developing your own NFT on Cardano blockchain. For those unfamiliar with the crypto space, an NFT is a non-fungible token, which means that it is not exchangeable with other tokens apart from bitcoin (or other digital currencies). The attribute of unexchangeable currency in NFT creates a digital scarcity, which naturally inflates the token's worth.

Prerequisites:

- Ownership of a complete Cardano node.
- Fundamental Knowledge of Cardano CLI and its terminologies.
- Ownership of an ADA wallet with a minimum of 2 ADAs.

Step 1

The first step is to make a new payment address for which one needs two keys.

Below mentioned is an example code of generating the keys:

```
“cardano-cli address key-gen \  
-verification-key-file payment.vkey \  
-signing-key-file payment.skey”
```

Step 2

After generating the verification and signing key, a payment address has to be generated,

```
“cardano-cli address build \  
-payment-verification-key-file payment.vkey \  
-out-file payment.addr \  
-mainnet”
```

Step 3

Once the payment address has been generated begin with processing the display of the file of content,

```
“cat payment.addr  
addr1v9hhyvjycngmhrng2xcqa58y9j759we4xxhhqhpx26lgpzqyvflfk”
```

Step 4

Verify your address’s current UTXo after processing the display of the file of content,

```
“cardano-cli query utxo --address $(cat payment.addr) \  
-mainnet --mary-era”
```

The output of the step mentioned above should appear like this:

“TxHash TxIx Amount

-----“

Step 5

The example mentioned above indicates that you didn’t have any transactions associated with your address. The following step is to fund your address. Duplicate your address as per the example code mentioned below:

“addr1v9hhyvjycngmhrng2xcqa58y9j759we4xxhhqhpx26lzqyvflfk”

Transfer the desired amount to this address using your preferred wallet; you’ll need to have at least 1 ada to generate your NFT. Based on the quantity of ada you wish to create, you may wish to transfer additional ada. Afterward, if you wish to send your NFTs to your

acquaintances, you will require at least 1.7 ada per transaction. This happens because it is at the moment not possible to send only custom tokens; each transaction must include a minimum number of ada.

Step 6

After funding and duplicating the address check the UTXO again,

```
“cardano-cli query utxo --address $(cat payment.addr) \  
--mainnet --mary-era”
```

Now the result should appear as given below:

“TxHash TxIx Amount

7211b05ef3cb067b36469af2a81a63de5612b6a449cf8db47504cc82726015 0 5000000
lovelace”

Step 7

Process the exporting of the current network parameters to a file after checking the UTXO again,

```
“cardano-cli query protocol-parameters \  
--mainnet \  
--out-file protocol.json”
```

Step 8

After processing the export of the current network parameters begin with the policy creation. Create one's own policy. A policy can generate and burn tokens. The policy id and the token name are always used to identify a token. Although the token title is distinctive to the policy id, it may be used with another policy id,

One needs two keys to create their policy:

```
“cardano-cli address key-gen \  
--verification-key-file policy.vkey \  
--signing-key-file policy.skey”
```

Now one can generate the policy script:

```

“touch policy.script && echo “” > policy.script

echo “{” >> policy.script

echo ”\”keyHash\”: \”$(cardano-cli address key-hash –payment-verification-key-file
policy.vkey)\”,” >> policy.script

echo ”\”type\”: \”sig\”” >> policy.script

echo “}” >> policy.script

cat policy.script

{ “keyHash”: “5805823e303fb28231a736a3eb4420261bb42019dc3605dd83cccd04”,
“type”: “sig”}”

```

Step 9

Calculate the transaction fees after completing the policy generation,

```

“cardano-cli transaction calculate-min-fee \

–tx-body-file matx.raw \

–tx-in-count 1 \

–tx-out-count 1 \

–witness-count 2 \

–mainnet \

–protocol-params-file protocol.json195509 Lovelace”

```

Step 10

The step of calculating the transaction fee is followed by the step of building transaction with fee,

```

“cardano-cli transaction build-raw \
-mary-era \
-fee 195509 \
-tx-in b1ddb0347fed2aecc7f00caabaaf2634f8e2d17541f6237bbed78e2092e1c414#0 \
-tx-out $(cat payment.addr)+4804491+”1
677d3bbe3e01eeab498cd8786f7d261d92bd6ecea12109a332e86374.MountainGorilla + 1
677d3bbe3e01eeab498cd8786f7d261d92bd6ecea12109a332e86374.BrownBear”\
-mint=”1 677d3bbe3e01eeab498cd8786f7d261d92bd6ecea12109a332e86374.MountainGorilla
+ 1 677d3bbe3e01eeab498cd8786f7d261d92bd6ecea12109a332e86374.BrownBear”\
-out-file matx.raw”

```

Step 11

Process the signing of the transaction once you are done with creating a transaction with fee,

```

” cardano-cli transaction sign \
-signing-key-file payment.skey \
-signing-key-file policy.skey \
-script-file policy.script \
-mainnet \
-tx-body-file matx.raw \
-out-file matx.signed”

```

Step 12

The next step is to submit the transaction,

```

“cardano-cli transaction submit --tx-file matx.signed --mainnet”

```

Step 13

After submitting the transaction, enquire for one’s UTXo. This will reflect the newly minted tokens;

```
“cardano-cli query utxo –address $(cat payment.addr) \
```

```
–mainnet –mary-eraTxHash TxIx Amount
```

```
fd0790f3984348f65ee22f35480b873b4eb9862065514f3e3a9c0f04d0a6ad63 0 4804491
```

```
lovelace + 1
```

```
677d3bbe3e01eeab498cd8786f7d261d92bd6ecea12109a332e86374.MountainGorilla + 1
```

```
677d3bbe3e01eeab498cd8786f7d261d92bd6ecea12109a332e86374.BrownBear”
```

Conclusion

NFTs can be used in a variety of ways. With the rise of NFTs, well-designed platforms such as Ethereum, Polygon(Matic), Wax blockchain, Cardano blockchain, Flow blockchain; have been developed that combine privacy-preserving techniques to optimally serve the interests of users other than artists, corporations, and brands. Amongst all of these, Cardano has been trending effectively. The primary applications of Cardano are in identity and traceability management. It includes native capabilities ranging from Catalyst to the metadata benchmark. This will resolve a slew of metadata, identity, verification, and governance issues. With the emergence of Cardano, blockchain innovation and development has been raised to a new standard of convenience in the context of digital transactions.

Cardano has the potential to become one of the leading platforms for issuing, curating, and transferring NFTs from one party to another in the longer run.

If you are seeking assistance in creating non-fungible tokens on the top of the Cardano blockchain, consult our team of [blockchain experts](#) and get started.