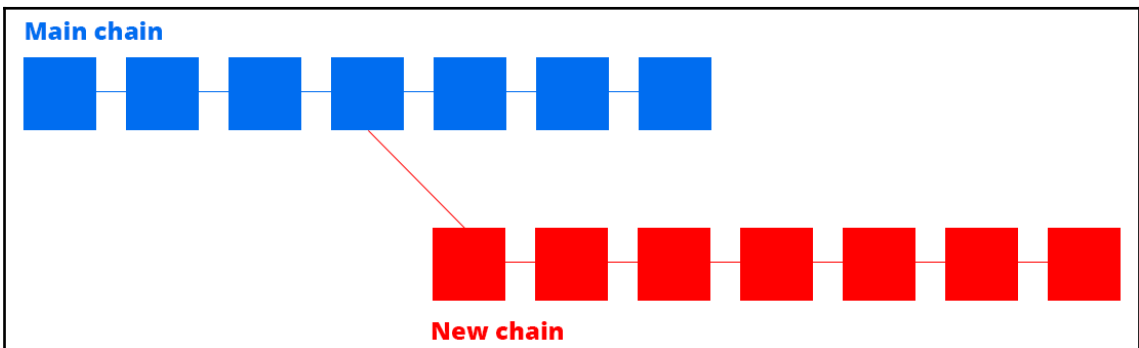
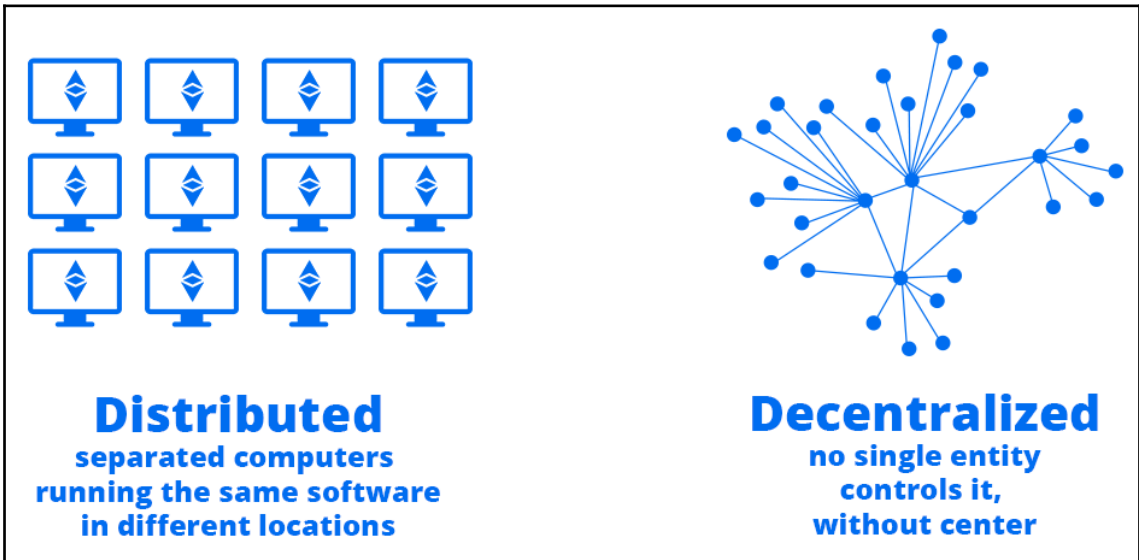
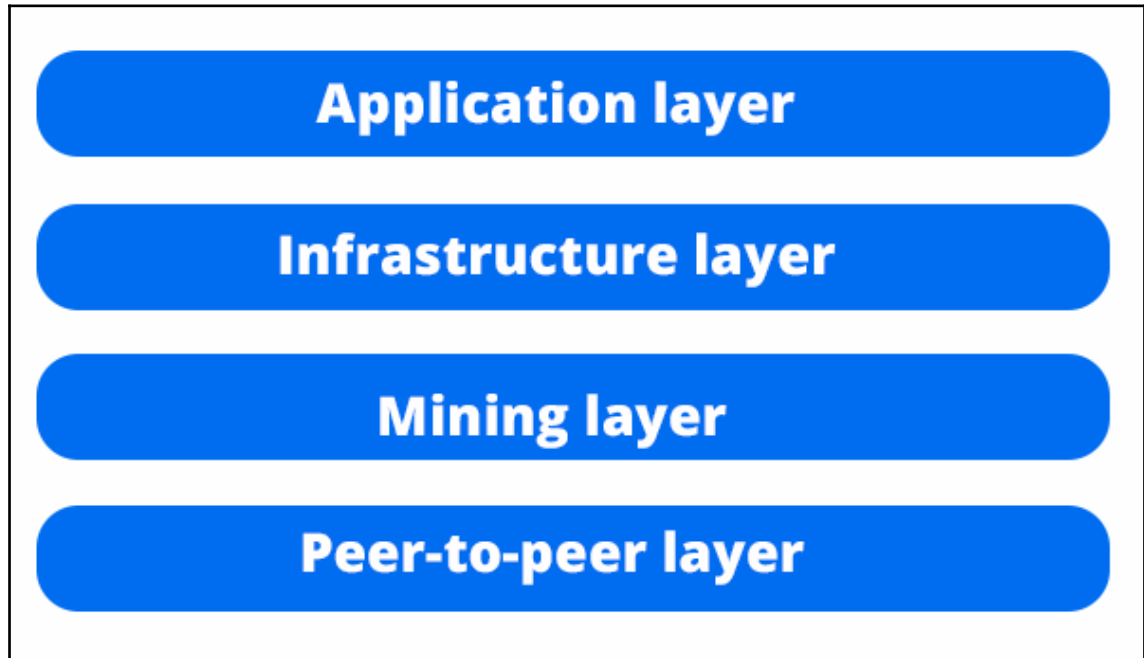


# Chapter 1: Blockchain Architecture



## Chapter 2: Ethereum Ecosystems



## Application layer

### Wallets

MyEtherWallet

Metamask

Mist

### Smart Contract languages

Solidity

Vyper

### Libraries

Truffle

Web3.js

Embark

### Testing tools

Sol-profiler

Solidity coverage

Cliquebait

Hevm

## Infrastructure layer

## Mining layer

## Peer-to-peer layer

## Application layer

## Infrastructure layer

### Messaging

Whisper

PyDevp2p

### Storage

Swarm

IPFS

### Clients

Geth

Parity

## Mining layer

## Peer-to-peer layer

**Application layer**

**Infrastructure layer**

**Mining layer**

**Mining pools**

Ethermine

Nicehash

**GPU Clients**

Claymore miner

Ethminer

**Peer-to-peer layer**

**Application layer**

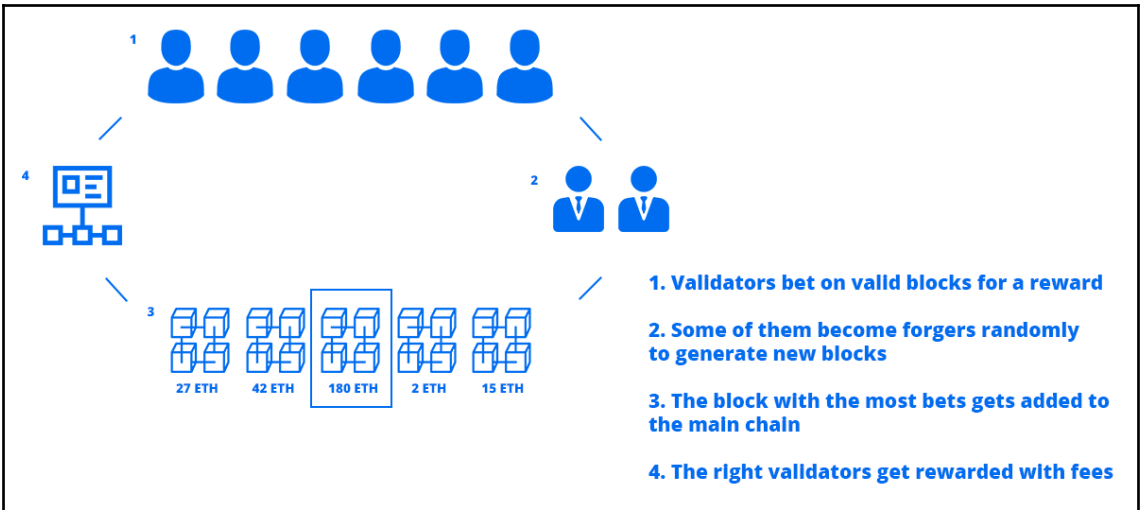
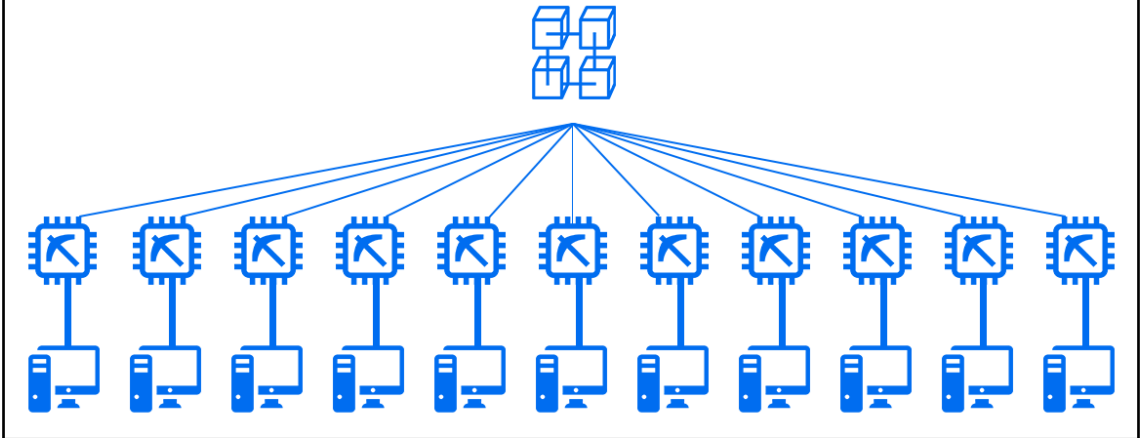
**Infrastructure layer**

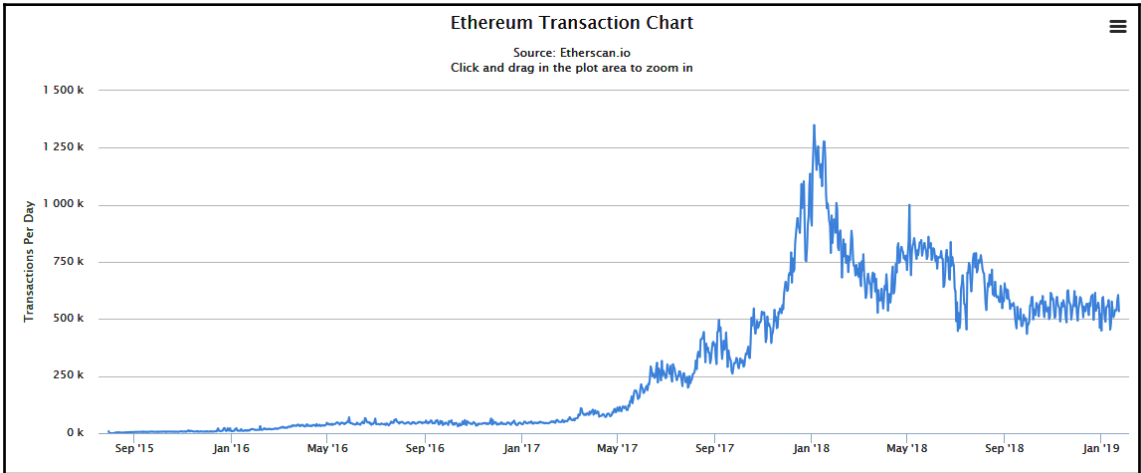
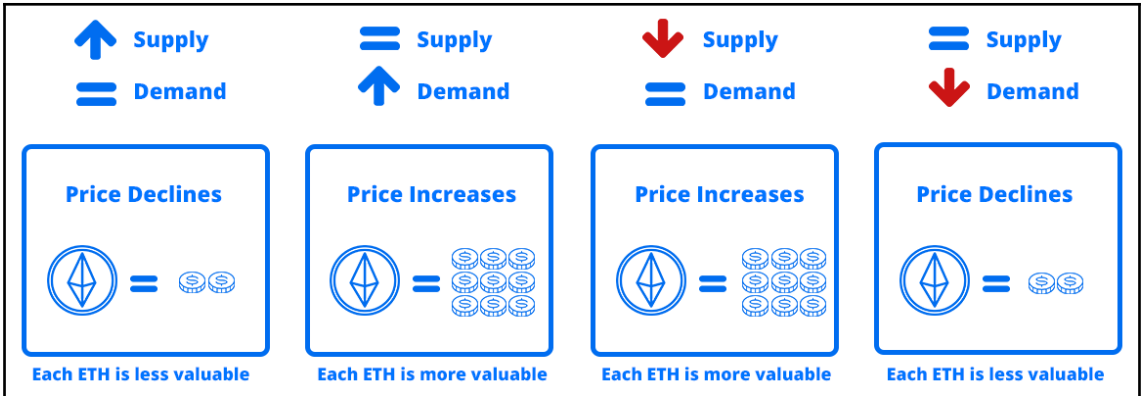
**Mining layer**

**Peer-to-peer layer**

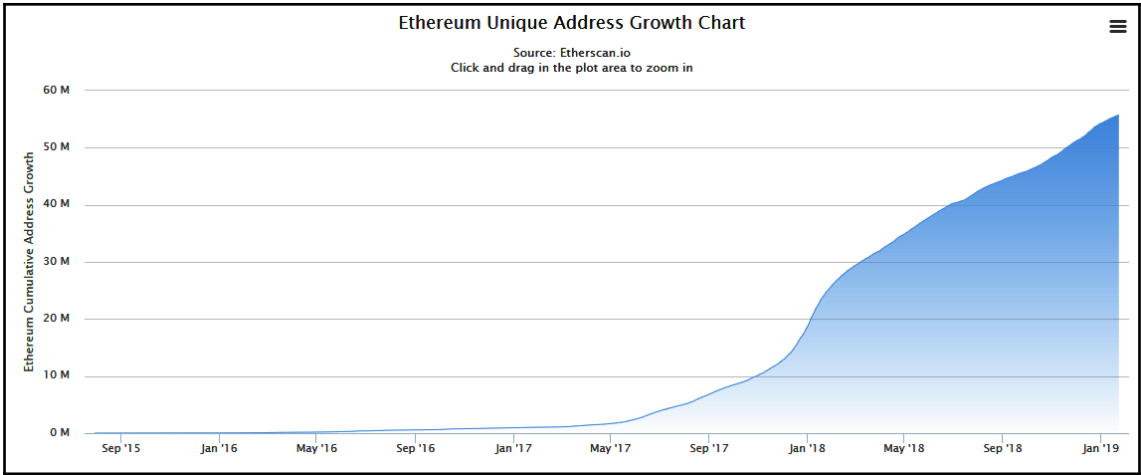
**DEVP2P**

A new block is created with proof-of-work consensus







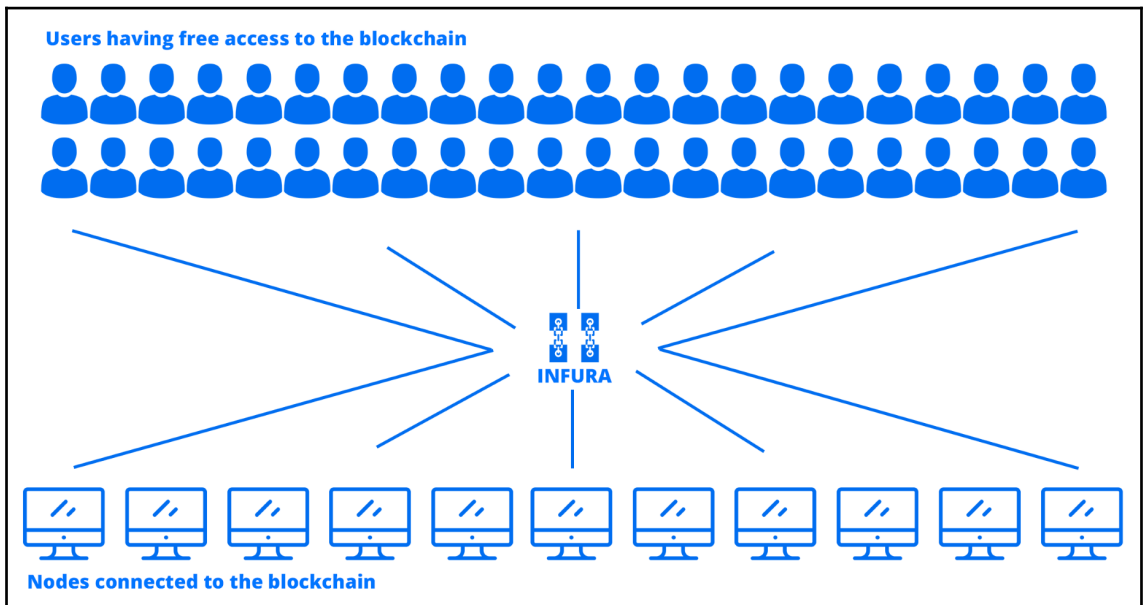
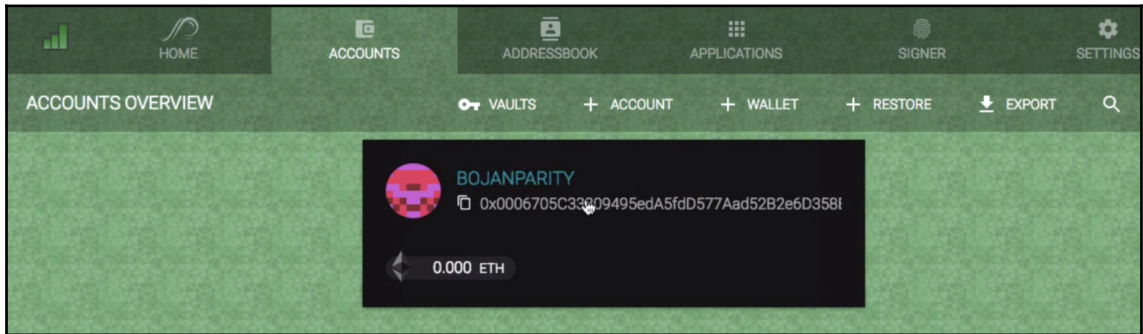


### Ethereum Network HashRate Growth Chart

Source: Etherscan.io  
Click and drag in the plot area to zoom in



# Chapter 3: Ethereum Assets



**INFURA** DASHBOARD STATS

**YOUR PROJECTS** CREATE NEW PROJECT **WHAT'S NEW**

EXAMPLE STATS EDIT

PROJECT ID: 8e12dd4433454738a522d...

PROJECT SECRET: 7a5737ab2e8a44c4a915b...

ENDPOINT:

mainnet.infura.io/v3/8e12...

Whitelist Contract Address...

**Whitelist Your Contracts** ⓘ  
Search and whitelist the specific smart contracts that your application uses.

NOVEMBER 28, 2018

New community site is live at [community.infura.io](https://community.infura.io). Head there to submit bugs, ask questions, provide feedback, and request features.

NOVEMBER 13, 2018

Stats are live! You can now see your application's Infura activity directly in the Infura Dashboard.

See what calls are most common, how much bandwidth your app is using, and more. This is the first in many improvements and additions to the

DOCS STATUS SUPPORT

✓ **MERUNAS** VIEW PROJECT

Created on Apr 5, 2019 VIEW STATS

**INFURA** DASHBOARD STATS

**EDIT PROJECT**

NAME:

KEYS

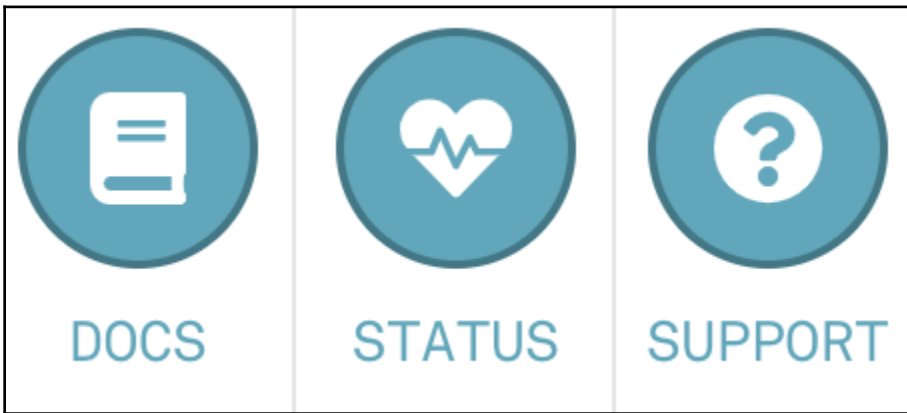
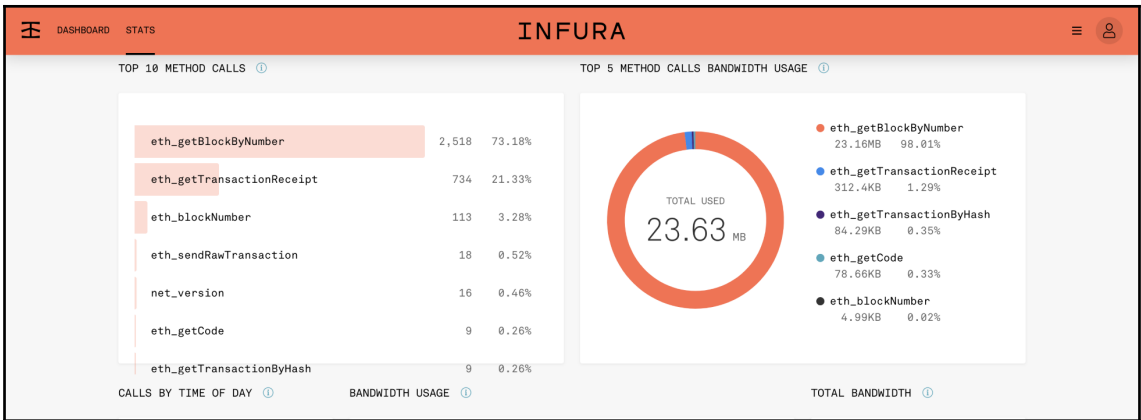
PROJECT ID: d00d45913f8e4c2a9dbb62791c58bf9e

PROJECT SECRET ⓘ: ff9aa12913774d258cbf928135604ddc

ENDPOINT:

mainnet.infura.io/v3/d00d45913f8e4c2a9dbb62791c58bf9e

SECURITY



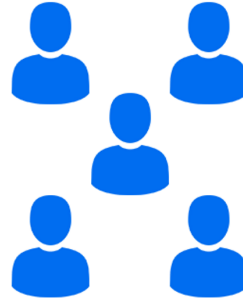
**People congregate to form an organization**



**Deploy the DAO Smart Contract**



**People congregate to form an organization**



**Deploy the DAO Smart Contract**



**They create topics to vote on for deciding the next steps in the company**

```
merunas — puppeth — 80x24
MacBook-Pro-de-Merunas:~ merunas$ puppeth
+-----+
| Welcome to puppeth, your Ethereum private network manager |
| |
| This tool lets you create a new Ethereum network down to |
| the genesis block, bootnodes, miners and ethstats servers |
| without the hassle that it would normally entail. |
| |
| Puppeth uses SSH to dial in to remote servers, and builds |
| its network components out of Docker containers using the |
| docker-compose toolset. |
+-----+

Please specify a network name to administer (no spaces, hyphens or capital letters please)
> new
```

```
Please specify a network name to administer (no spaces, hyphens or capital letters please)
> new

Sweet, you can set this via --network=new next time!

INFO [01-16|14:09:28.409] Administering Ethereum network
WARN [01-16|14:09:28.409] No previous configurations found
erunas/.puppeth/new

name=new
path=/Users/m

What would you like to do? (default = stats)
1. Show network stats
2. Configure new genesis
3. Track new remote server
4. Deploy network components
> 2
```

```
What would you like to do? (default = stats)
```

1. Show network stats
2. Configure new genesis
3. Track new remote server
4. Deploy network components

```
> 2
```

```
What would you like to do? (default = create)
```

1. Create new genesis from scratch
2. Import already existing genesis

```
> 1
```

```
Which consensus engine to use? (default = clique)
```

1. Ethash - proof-of-work
2. Clique - proof-of-authority

```
> 1
```

```
Which accounts should be pre-funded? (advisable at least one)
```

```
> 0x35e5615fce373ecf40251071fe2cb5cc1554213b
```

```
> 0x
```

```
Should the precompile-addresses (0x1 .. 0xff) be pre-funded with 1 wei? (advisable yes)
```

```
> yes
```

```
Specify your chain/network ID if you want an explicit one (default = random)
```

```
> 77
```

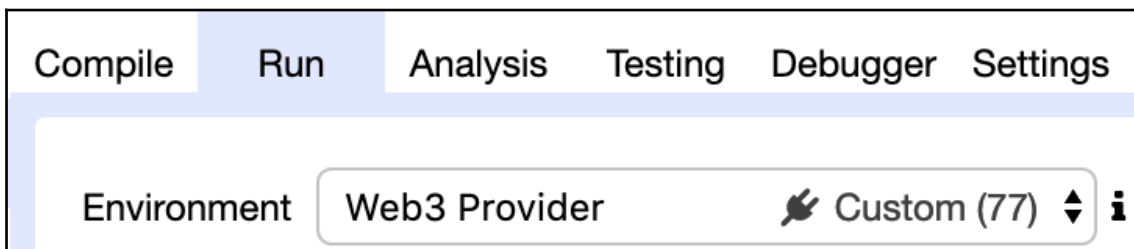
```
[32mINFO [0m[04-12|12:51:11.103] Configured new genesis block
```



```
What would you like to do? (default = stats)
1. Show network stats
2. Manage existing genesis
3. Track new remote server
4. Deploy network components
> 2

1. Modify existing fork rules
2. Export genesis configurations
3. Remove genesis configuration
> 2
```

```
Which folder to save the genesis specs into? (default = current)
Will create new.json, new-aleth.json, new-harmony.json, new-parity.json
> desktop/node/
INFO [01-16|14:29:31.241] Saved native genesis chain spec      path=desktop/
node/new.json
INFO [01-16|14:29:31.242] Saved genesis chain spec      client=aleth
path=desktop/node/new-aleth.json
INFO [01-16|14:29:31.243] Saved genesis chain spec      client=parity
path=desktop/node/new-parity.json
INFO [01-16|14:29:31.244] Saved genesis chain spec      client=harmon
y path=desktop/node/new-harmony.json
```



✕

## Web3 Provider Endpoint

`http://localhost:8545`

OK   Cancel

Go EthereumInstallDownloads

## Download Geth – Byzantium Revert (v1.8.21) – [Release Notes](#)

You can download the latest 64-bit stable release of Geth for our primary platforms below. Packages for all supported platforms, as well as develop builds, can be found further down the page. If you're looking to install Geth and/or associated tools via your favorite package manager, please check our [installation](#) guide.

🐧 Geth 1.8.21 for Linux

🍏 Geth 1.8.21 for macOS

🇺🇸 Geth 1.8.21 for Windows

📄 Geth 1.8.21 sources

### Specific Versions

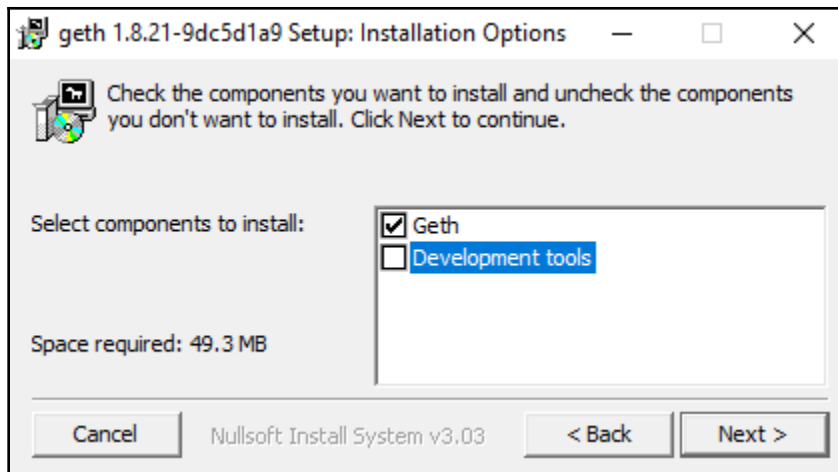
If you're looking for a specific release, operating system or architecture, below you will find:

- All stable and develop builds of Geth and tools
- Archives for non-primary processor architectures
- Android library archives and iOS XCode frameworks

Please select your desired platform from the lists below and download your bundle of choice. Please be aware that the `MD5` checksums are provided by our binary hosting platform (Azure Blobstore) to help check for download errors. For security guarantees please verify any downloads via the attached PGP signature files (see [OpenPGP Signatures](#) for details).

### Stable releases

These are the current and previous stable releases of go-ethereum, updated automatically when a new version is tagged in our [GitHub repository](#).



```
Windows PowerShell
PS C:\Users\merun\Desktop> geth
INFO [01-28|22:09:49.951] Maximum peer count           ETH=25 LES=0 total=25
INFO [01-28|22:09:49.962] Starting peer-to-peer node     instance=Geth/v1.8.21-stable-9dc5d1a9/windows-amd64/g
o1.11.4
INFO [01-28|22:09:49.965] Allocated cache and file handles database=C:\\Users\\merun\\AppData\\Roaming\\Ethereum
\\geth\\chaindata cache=512 handles=8192
INFO [01-28|22:09:50.031] Initialised chain configuration  config="{ChainID: 1 Homestead: 1150000 DAO: 1920000 D
AOSupport: true EIP150: 2463000 EIP155: 2675000 EIP158: 2675000 Byzantium: 4370000 Constantinople: <nil> Engine: ethash}
"
INFO [01-28|22:09:50.037] Disk storage enabled for ethash caches dir=C:\\Users\\merun\\AppData\\Roaming\\Ethereum\\get
h\\ethash count=3
INFO [01-28|22:09:50.039] Disk storage enabled for ethash DAGs dir=C:\\Users\\merun\\AppData\\Ethash
count=2
INFO [01-28|22:09:50.043] Initialising Ethereum protocol  versions="[63 62]" network=1
INFO [01-28|22:09:50.092] Loaded most recent local header  number=0 hash=d4e567...cb8fa3 td=17179869184 age=49y9mo
2w
INFO [01-28|22:09:50.097] Loaded most recent local full block number=0 hash=d4e567...cb8fa3 td=17179869184 age=49y9mo
2w
INFO [01-28|22:09:50.099] Loaded most recent local fast block number=0 hash=d4e567...cb8fa3 td=17179869184 age=49y9mo
2w
INFO [01-28|22:09:50.103] Loaded local transaction journal  transactions=0 dropped=0
INFO [01-28|22:09:50.105] Regenerated local transaction journal transactions=0 accounts=0
INFO [01-28|22:09:50.128] New local node record seq=2 id=18ab5d49a243164e ip=127.0.0.1 udp=30303 tcp=
30303
INFO [01-28|22:09:50.132] Started P2P networking self=enode://983ecb3f77e4a7c7d0f86066fb1c8fc46534679c
90e2e5644fad079c70b64b3418d6ce8a9ff6fdd36d3af804c325c4ac59568d9363180c47cec5e742f1000357@127.0.0.1:30303
INFO [01-28|22:09:50.133] IPC endpoint opened url=\\\\.\\pipe\\geth.ipc
INFO [01-28|22:09:50.943] Got interrupt, shutting down... url=\\\\.\\pipe\\geth.ipc
INFO [01-28|22:09:50.946] IPC endpoint closed
INFO [01-28|22:09:50.950] Blockchain manager stopped
INFO [01-28|22:09:50.952] Stopping Ethereum protocol
INFO [01-28|22:09:50.955] Ethereum protocol stopped
INFO [01-28|22:09:50.957] Transaction pool stopped
INFO [01-28|22:09:50.969] Database closed database=C:\\Users\\merun\\AppData\\Roaming\\Ethereum
\\geth\\chaindata
PS C:\Users\merun\Desktop>
```

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\merun> puppeth
-----+-----
| Welcome to puppeth, your Ethereum private network manager |
|                                                             |
| This tool lets you create a new Ethereum network down to  |
| the genesis block, bootnodes, miners and ethstats servers |
| without the hassle that it would normally entail.         |
|                                                             |
| Puppeth uses SSH to dial in to remote servers, and builds |
| its network components out of Docker containers using the  |
| docker-compose toolset.                                   |
|-----+-----|
Please specify a network name to administer (no spaces, hyphens or capital letters please)
>
```

```
Please specify a network name to administer (no spaces, hyphens or capital letters please)
> merunas

Sweet, you can set this via --network=merunas next time!

[32mINFO [0m[01-28|22:25:42.621] Administering Ethereum network           [32mname[0m=merunas
[33mWARN [0m[01-28|22:25:42.622] No previous configurations found        [33mpath[0m=.puppeth\\merunas

What would you like to do? (default = stats)
1. Show network stats
2. Configure new genesis
3. Track new remote server
4. Deploy network components
> 2
```

```
What would you like to do? (default = create)
1. Create new genesis from scratch
2. Import already existing genesis
> 1

Which consensus engine to use? (default = clique)
1. Ethash - proof-of-work
2. Clique - proof-of-authority
>
```

```
Which accounts should be pre-funded? (advisable at least one)
> 0x9d7917b7f7d3d0ec317397677ce7190337812a03
> 0x

Should the precompile-addresses (0x1 .. 0xff) be pre-funded with 1 wei? (advisable yes)
> no

Specify your chain/network ID if you want an explicit one (default = random)
> 100
```

```

@[32mINFO @[0m[01-28|22:32:31.592] Configured new genesis block

What would you like to do? (default = stats)
 1. Show network stats
 2. Manage existing genesis
 3. Track new remote server
 4. Deploy network components
> 2

 1. Modify existing fork rules
 2. Export genesis configurations
 3. Remove genesis configuration
> 2

Which folder to save the genesis specs into? (default = current)
  Will create merunas.json, merunas-aleth.json, merunas-harmony.json, merunas-parity.json
> C:\Users\merun\Desktop\puppeth blockchains
@[32mINFO @[0m[01-28|22:37:05.896] Saved native genesis chain spec      @[32mpath@[0m="C:\\Users\\merun\\Desktop\\
ppeth blockchains\\merunas.json"
@[32mINFO @[0m[01-28|22:37:05.899] Saved genesis chain spec          @[32mclient@[0m=aleth @[32mpath@[0m="C:\\
rs\\merun\\Desktop\\puppeth blockchains\\merunas-aleth.json"
@[32mINFO @[0m[01-28|22:37:05.910] Saved genesis chain spec          @[32mclient@[0m=parity @[32mpath@[0m="C:\\
ers\\merun\\Desktop\\puppeth blockchains\\merunas-parity.json"
@[32mINFO @[0m[01-28|22:37:05.913] Saved genesis chain spec          @[32mclient@[0m=harmony @[32mpath@[0m="C:\\
ers\\merun\\Desktop\\puppeth blockchains\\merunas-harmony.json"

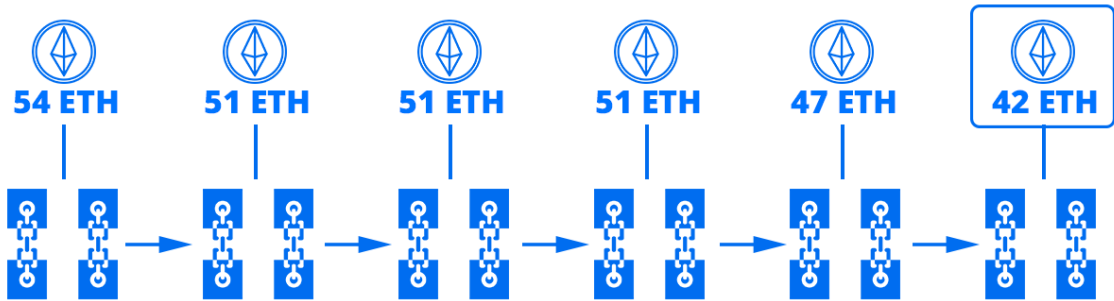
```

```

INFO [01-28|22:40:51.745] Maximum peer count      ETH=25 LES=0 total=25
INFO [01-28|22:40:51.756] Allocated cache and file handles database=C:\\Users\\merun\\AppData\\Roaming\\Ethereum
\\geth\\chaindata cache=16 handles=16
INFO [01-28|22:40:51.772] Writing custom genesis block
INFO [01-28|22:40:51.774] Persisted trie from memory database nodes=1 size=172.00B time=0s gcnodes=0 gcsiz=0.00B
ctime=0s livenodes=1 liveness=0.00B
INFO [01-28|22:40:51.778] Successfully wrote genesis state database=chaindata
hash=00594f...3908b7
INFO [01-28|22:40:51.783] Allocated cache and file handles database=C:\\Users\\merun\\AppData\\Roaming\\Ethereum
\\geth\\lightchaindata cache=16 handles=16
INFO [01-28|22:40:51.798] Writing custom genesis block
INFO [01-28|22:40:51.800] Persisted trie from memory database nodes=1 size=172.00B time=0s gcnodes=0 gcsiz=0.00B
ctime=0s livenodes=1 liveness=0.00B
INFO [01-28|22:40:51.805] Successfully wrote genesis state database=lightchaindata
hash=00594f...3908b7

```

**0xa684d6211f06b069f26930ff213a4bf29d7ee178**



**MyEtherWallet** 3.31.1 English Gas Price: 41 Gwei Network ETH (myetherwallet.com)

The network is really full right now. Check Eth Gas Station for gas price to use.

New Wallet Send Ether & Tokens Swap Send Offline Contracts ENS DomainSale Check TX Status View Wallet Info Help

### Create New Wallet

**Enter a password**

Do NOT forget to save this!

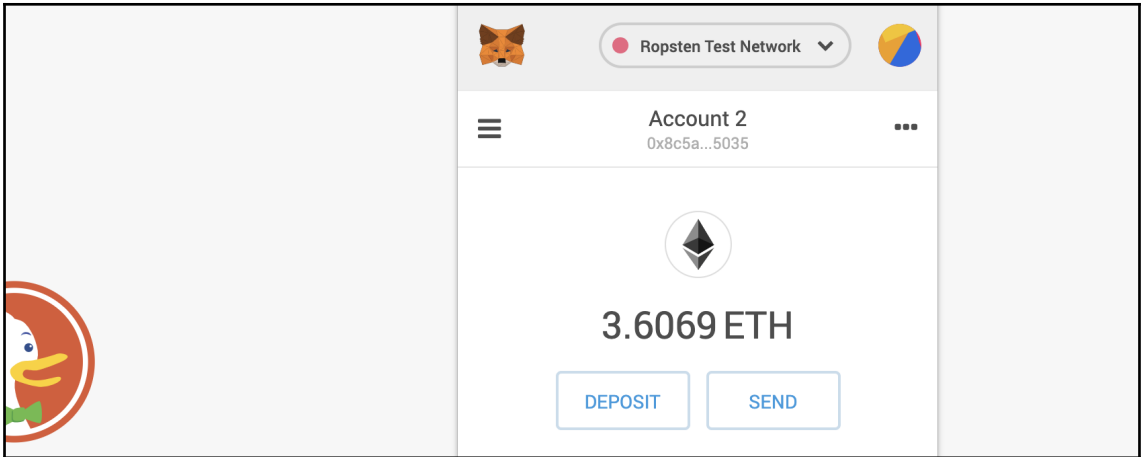
Create New Wallet

This password *encrypts* your private key. This does not act as a seed to generate your keys. You will need this password + your private key to unlock your wallet.

[How to Create a Wallet](#) · [Getting Started](#)

**Already have a wallet somewhere?**

- **Ledger / TREZOR / BitBox / Secalot**: Use your **hardware wallet**. Your device *is* your wallet.
- **MetaMask** Connect via your **MetaMask Extension**. So easy! Keys stay in MetaMask, not on a phishing site! Try it today.
- **Jaxx / imToken** Use your **Mnemonic Phrase** to access your account.
- **Mist / Geth / Parity**: Use your **Keystore File (UTC / JSON)** to access your account.







The Constantinople 'Network Upgrade' is scheduled to take place at Block #7280000 in (~26 days 14 hrs 44 mins 8 secs)

[New Beta Site](#)

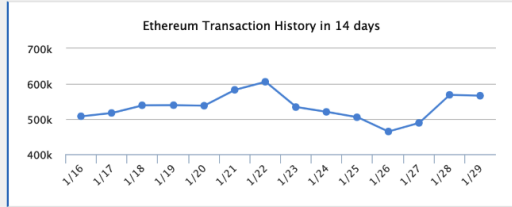

**MARKET CAP OF \$11.025 BILLION**  
**\$105.37 @ 0.03053 BTC/ETH** +0.78%

**LAST BLOCK**  
**7148603** (17.5s)

**TRANSACTIONS**  
**384.61 M** (7.4 TPS)

**Hash Rate**  
 142,252.23 GH/s

**Network Difficulty**  
 2,426.31 TH



**Blocks**

[View All](#)

- Block 7148603**  
 Mined By **Ethermine**  
**183 txns** in 32 secs  
 >43 secs ago  
 Block Reward 3.08095 Ether
- Block 7148602**  
 Mined By **Nanopool**  
**145 txns** in 22 secs  
 >1 min 15 secs ago  
 Block Reward 3.09076 Ether
- Block 7148601**  
 Mined By **SparkPool**  
**73 txns** in 17 secs  
 >1 min 37 secs ago  
 Block Reward 3.0316 Ether
- Block 7148600**  
 Mined By **F2Pool\_2**  
**120 txns** in 9 secs  
 >1 min 54 secs ago  
 Block Reward 3.26073 Ether

**Transactions**

[View All](#)

- TX# 0X0E66F19BDAB8CB51D75CA9...**  
 From 0x0f605819e53780... To 0x8b353021189375...  
 Amount 0 Ether  
 >43 secs ago
- TX# 0XF484E63562141AA90176C55...**  
 From 0xcb922adab28594... To 0x9dd834a3645915...  
 Amount 1 Ether  
 >43 secs ago
- TX# 0XFE21CDF95E7B818FEA2EAB2...**  
 From 0x26fef2c89399aaa... To 0x618e75ac90b12c...  
 Amount 0 Ether  
 >43 secs ago
- TX# 0X9043B239808D5ACD5C9233F...**  
 From 0x071773352a1437f... To 0xab045af94c566d...  
 Amount 0 Ether  
 >43 secs ago

**Address** 0xeF5781A2c04113e29bE5724ae6E30bC287610007

[Home](#) / [Accounts](#) / [Address](#)

**Overview**

**Balance:** 13.999202 Ether  
**Transactions:** 17 txns

**Transactions**

Latest 17 txns

TxHash	Block	Age	From	To	Value	[TxFee]
0x86f8ea90c662589...	4922994	5 mins ago	0xef5781a2c04113e...	<b>OUT</b> 0x8c5a579a06fac3b...	1 Ether	0.000609
0x22d539c1d4fc54...	4922985	8 mins ago	0xef5781a2c04113e...	<b>SELF</b> 0xef5781a2c04113e...	0 Ether	0.000189
0x77ff2fe0f7a8568...	4922883	44 mins ago	0x81b7e08f65bdf56...	<b>IN</b> 0xef5781a2c04113e...	1 Ether	0.000021

Transaction [0x86f8ea90c66258967cd0836ea5ef764ab1a91a9aa6892311f00702da68bada76](#)

[Home](#) / [Transactions](#) / [Tx Info](#)

Overview

Transaction Information

Tools & Utilities

[ This is a Ropsten **Testnet** Transaction Only ]

TxHash:	0x86f8ea90c66258967cd0836ea5ef764ab1a91a9aa6892311f00702da68bada76
TxReceipt Status:	Success
Block Height:	4922994 (16 Block Confirmations)
TimeStamp:	6 mins ago (Jan-30-2019 11:37:56 AM +UTC)
From:	0xef5781a2c04113e29be5724ae6e30bc287610007
To:	0x8c5a579a06fac3b723d97061e295582de2825035
Value:	1 Ether (\$0.00)
Gas Limit:	21000
Gas Used By Transaction:	21000 (100%)
Gas Price:	0.00000029 Ether (29 Gwei)
Actual Tx Cost/Fee:	0.000609 Ether (\$0.000000)
Nonce & (Position):	1   (2)
Input Data:	<div style="border: 1px solid #ccc; padding: 2px;">0x</div>



METAMASK

Brings Ethereum to your browser

**GET CHROME EXTENSION** ▶

Chrome Firefox Opera

OR

**GET BRAVE BROWSER** ▶

A B O U T



## Welcome to MetaMask

MetaMask is a secure identity vault for Ethereum. It allows you to hold ether & tokens, and serves as your bridge to decentralized applications.

**CONTINUE**



## Terms of Use

### Terms of Use

THIS AGREEMENT IS SUBJECT TO BINDING ARBITRATION AND A WAIVER OF CLASS ACTION RIGHTS AS DETAILED IN SECTION 13. PLEASE READ THE AGREEMENT CAREFULLY.

Our Terms of Use have been updated as of September 5, 2016

#### 1. Acceptance of Terms

MetaMask provides a platform for managing Ethereum (or "ETH") accounts, and allowing ordinary websites to interact with the Ethereum blockchain, while keeping the user in control over what transactions they approve, through our website located at <https://metamask.io/> and browser plugin (the "Site") – which includes text, images, audio, code and other materials (collectively, the "Content") and all of the features, and services provided. The Site, and any other features, tools, materials, or other services offered from time to time by MetaMask are referred to here as the "Service." Please read these Terms of Use (the "Terms" or "Terms of Use") carefully before using the Service. By using or otherwise accessing the Services, or clicking to accept or agree to these Terms where that option is made available, you (1) accept and agree to these Terms (2) consent to the collection, use, disclosure and other handling of information as described in our Privacy Policy and (3) any additional terms, rules and conditions of participation issued by MetaMask from time to time. If you do not agree to the Terms, then you may not access or use the Content or Services.

#### 2. Modification of Terms of Use

Except for Section 13, providing for binding arbitration and waiver of class action rights, MetaMask reserves the right, at its sole discretion, to modify or replace the Terms of Use at any time. The most current version of these Terms will be posted on our Site. You shall be responsible for reviewing and becoming familiar with any such modifications. Use of the Services by you after any modification to the Terms constitutes your acceptance of the Terms of Use as modified.

#### 3. Eligibility

You hereby represent and warrant that you are fully able and competent to enter into the terms, conditions, obligations, affirmations, representations and warranties set forth in these Terms and to abide

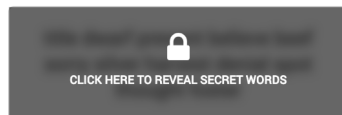
ACCEPT



## Secret Backup Phrase

Your secret backup phrase makes it easy to back up and restore your account.

**WARNING:** Never disclose your backup phrase. Anyone with this phrase can take your Ether forever.



NEXT



### Tips:

Store this phrase in a password manager like 1Password.

Write this phrase on a piece of paper and store in a secure location. If you want even more security, write it down on multiple pieces of paper and store each in 2 - 3 different locations.

Memorize this phrase.

[Download this Secret Backup Phrase and keep it stored safely on an external encrypted hard drive or storage medium.](#)

# Deposit Ether



To interact with decentralized applications using MetaMask, you'll need Ether in your wallet.



## Directly Deposit Ether

If you already have some Ether, the quickest way to get Ether in your new wallet by direct deposit.

[VIEW ACCOUNT](#)



## Buy on Coinbase

Coinbase is the world's most popular way to buy and sell Bitcoin, Ethereum, and Litecoin.

[CONTINUE TO COINBASE](#)



## Deposit with ShapeShift

If you own other cryptocurrencies, you can trade and deposit Ether directly into your MetaMask wallet.  
No Account Needed.

[BUY WITH SHAPESHIFT](#)



Main Ethereum Network



Account 1

0x8fa3...C6a0



0 ETH

\$0.00 USD

DEPOSIT

SEND

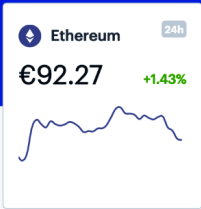
History

You have no transactions

# Buy and sell cryptocurrency

Coinbase is the easiest place to buy, sell, and manage your cryptocurrency portfolio.


Get started





We use cookies to improve the functionality of our products and services, and enhance your experience on our website. If you continue without changing your cookie settings, we assume you are happy to receive all cookies on the website. However, you can change your cookie settings anytime. Read our [Cookie Policy](#) for more information..

Individual  Business

I'm not a robot  reCAPTCHA  
Privacy - Terms

I certify that I am 18 years of age or older, and I agree to the [User Agreement](#) and [Privacy Policy](#).

Already have an account?



## Protecting your data

To be the most trusted place to buy and sell digital currency, we protect your personal data and comply with the EU's General Data Protection Regulation (GDPR).

NEXT

Already have an account?

coinbase

# Verify your email



We sent a verification email to **merunasgr@gmail.com**. Click the link inside to get started!

---

[Email didn't arrive?](#)

coinbase

# Add a phone number

Country



Spain



Your Phone Number

+34

|

This will secure your account by texting a short confirmation code to your phone when logging in.

Send Code

coinbase

## Verify your identity

Financial regulations require us to verify your identity. [Learn more.](#)

First Name

Merunas

Last Name

Grincalaitis

What will you use Coinbase for?

Select an option

Date of Birth

Month

Day

Year

What is your source of funds?

Select an option

Street Address

123 Main Street

Current Occupation

Select an option

Unit #

Employer

Employer

City/town

coinbase

# Verify your Identity

Choose an upload method



Webcam












Mobile Camera



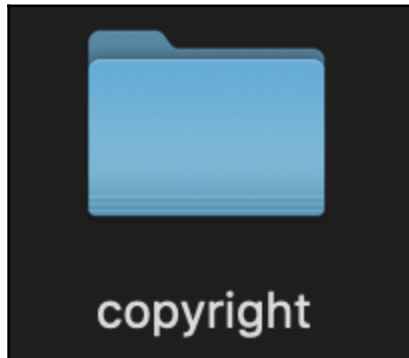
File Upload

[Go back](#)

Your Accounts: €0.00

Your Accounts: €0.00		Transactions <input type="text" value="Search"/>	
 <b>EUR Wallet</b> €0.00 <a href="#">Deposit</a> <a href="#">Withdraw</a> <a href="#">...</a>		DEC 07	
 <b>BTC Wallet</b> 0.0000 BTC ≈ €0.00 <a href="#">Send</a> <a href="#">Receive</a> <a href="#">...</a>		DEC 07	
 <b>BCH Wallet</b> 0.0000 BCH ≈ €0.00 <a href="#">Send</a> <a href="#">Receive</a> <a href="#">...</a>		NOV 29	
 <b>ETH Wallet</b> 0.0000 ETH ≈ €0.00		NOV 29	
		NOV 25	

# Chapter 4: Mastering Smart Contracts



```
MacBook-Pro-de-Merunas:copyright merunas$ truffle init
Current status: Draft

✓ Preparing to download
✓ Downloading
✓ Cleaning up temporary files
✓ Setting up box

Unbox successful. Sweet!

Commands:

Compile:      truffle compile
Migrate:     truffle migrate
Test contracts: truffle test
```

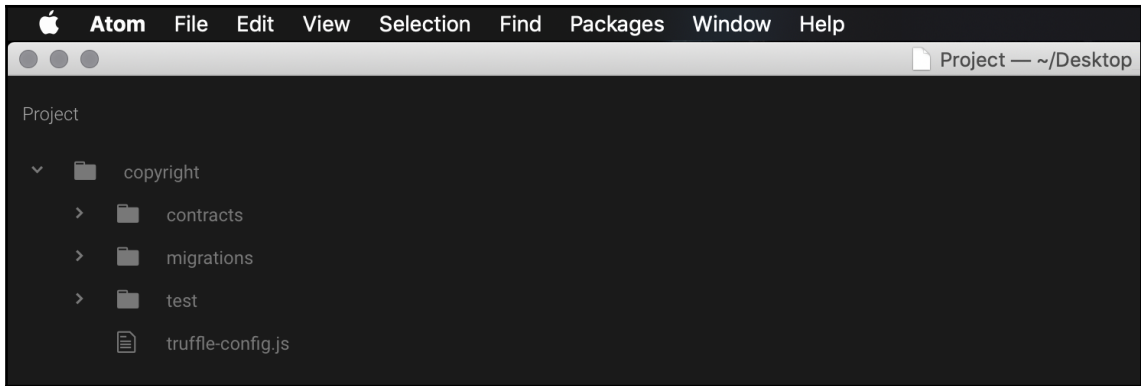
Take me back to where

Save

Last saved: 1st Feb

Mark Draft





```
Token.sol truffle-config.js
1 // const HDWalletProvider = require('truffle-hdwallet-provider');
2 // const infuraKey = "fj4jll3k.....";
3 //
4 // const fs = require('fs');
5 // const mnemonic = fs.readFileSync(".secret").toString().trim();
6
```

```
Token.sol truffle-config.js untitled
1 const HDWalletProvider = require('truffle-hdwallet-provider');
2 const infuraKey = "fj4jll3k.....";
3
4 const fs = require('fs');
5 const mnemonic = fs.readFileSync(".secret").toString().trim();
6
```

INFURA

DASHBOARD STATS

YOUR PROJECTS CREATE NEW PROJECT

EXAMPLE STATS EDIT

PROJECT ID 8e12dd4433454738a522d...	<input type="text" value="Whitelist Contract Address..."/> <span>ADD</span>
PROJECT SECRET 7a5737ab2e8a44c4a915b...	0xBB9bc244D798123fDe783fCc1C72d3Bb8C189413 <span>REMOVE</span>
ENDPOINT ropsten.infura.io/v3/8e12...	<span>ROPSTEN</span> <span>▼</span>

```
21 const HDWalletProvider = require('truffle-hdwallet-provider');  
22 const infuraKey = "v3/8e12dd4433454738a522d9ea7ffcf2cc";
```

## Project

▼	📁	copyright	6
>	📁	.git	7
>	📁	contracts	8
>	📁	migrations	9
>	📁	test	10
	📄	.secret	11
	📄	LICENSE	12
	📄	truffle-config.js	

Copyright.sol truffle-config.js .secret

```
1 basket stick middle grant slice file blanket silk maximum rabbit edit lazy|
2
```

```
61 // Useful for deploying to a public network.
62 // NB: It's important to wrap the provider as a function.
63 ropsten: {
64   provider: () => new HDWalletProvider(mnemonic, `https://ropsten.infura.io/${infuraKey}`),
65   network_id: 3, // Ropsten's id
66   gas: 5500000, // Ropsten has a lower block limit than mainnet
67   confirmations: 2, // # of confs to wait between deployments. (default: 0)
68   timeoutBlocks: 200, // # of blocks before a deployment times out (minimum/default: 50)
69   skipDryRun: true // Skip dry run before migrations? (default: false for public nets )
70 },
```

### Proxy contract



- Stays the same
- Keeps track of the addresses

### Upgradable contract



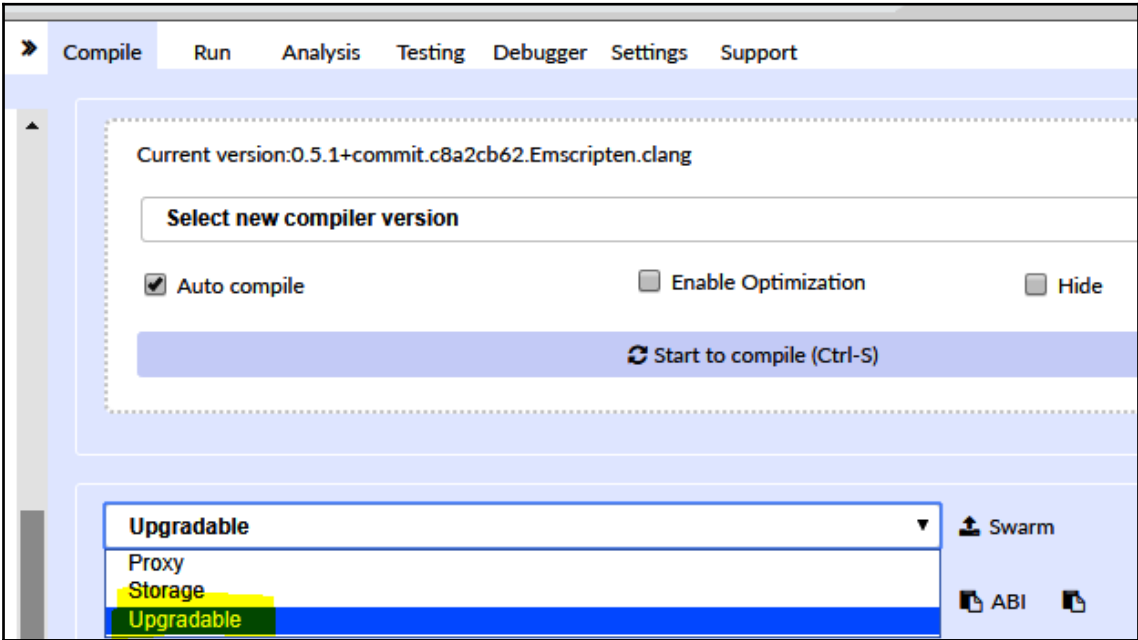
- Can be changed
- Saves variables in storage contract
- Keeps track of storage



### Storage contract



- Can be changed
- Just for storing variables

```
57 // The one that will be upgraded
58 contract Upgradable {
59     address public storageAddress;
60
61     constructor (address _storageAddress) public {
62         storageAddress = _storageAddress;
63     }
64
65     function setMyNumberStorage(uint256 _number) public {
66         Storage s = Storage(storageAddress);
67         s.setMyNumber(_number);
68     }
69 }
70
```





```
FUNCTIONHASHES    
  
{  
  "009be4e6": "setMyNumberStorage(uint256)",  
  "85aa92a7": "storageAddress()"  
}
```


DevTools - remix.ethereum.org/

Elements Console Sources Network


top Filter

```
> web3.toHex(16)  
< "0x10"  
> |
```

Upgradable at 0x98d...6799c (blockchain)  

setMyNumberStorage 

\_number:

 transact

Encode values of input fields & copy

storageAddress

0: address: 0xEEF5F4c355f170029Aa5c72102400866bfEA07FF



Ropsten Test Network



Account 1  
0x5912...86a3



\$9,635.29 USD  
89.4766 ETH

DEPOSIT

SEND

History

#57 - 2/4/2019 at 14:24



Contract Interaction

-\$0.00 USD

CONFIRMED

-0 ETH

#56 - 2/4/2019 at 14:23



Contract Interaction

-\$0.00 USD

CONFIRMED

-0 ETH

#55 - 2/4/2019 at 14:22



Ropsten Test Network



# Send ETH



Only send ETH to an Ethereum address.

To:

0x98d6ddcb85c2dc

Amount:

0 USD

Max

0 ETH

Transaction

Fee:

**Fastest**

0.00215 ETH  
\$0.23

**Fast**

0.00017 ETH  
\$0.02

**Slow**

0.00004 ETH  
\$0.00

[Advanced Options](#)

Hex Data:

0x009be4e60000000000  
00000000000000000000

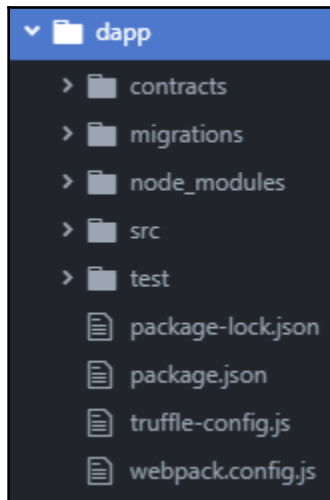
CANCEL

NEXT



# Chapter 5: Mastering dApps

	Frontend	Backend	Blockchain
<b>Technologies</b>	- React.js - Socket.io	- Node.js - Express - Socket.io	- Vyper - Truffle
<b>Categories to include</b>	ICO News ICO Analysis ICO Promotions ICO Airdrops ICO Opportunities	<b>Token utilities</b> Increase visibility Premium articles Advanced metrics	<b>Design</b> Minimalistic Category focused Rewarding newcomers
		<b>Backend</b> Article and Comment structs Centralized server to host the frontend	



← → ↻ 🏠 ⓘ localhost:8080

The project has been setup.

```
PS C:\Users\merun\Desktop\book\dapp> truffle deploy --network ropsten --reset
Ⓜ Important Ⓜ
If you're using an HDWalletProvider, it must be Web3 1.0 enabled or your migration will hang.

Starting migrations...
=====
> Network name:    'ropsten'
> Network id:      3
> Block gas limit: 8000000

1_initial_migration.js
=====

  Deploying 'SocialMusic'
  -----
  > transaction hash: 0xd0f1cb2f72043b1b1b80c109ae567e75786f41c08b9f709c19628bed2c55ae97
  > Blocks: 2        Seconds: 5
  > contract address: 0x6AeAb6695dD106FF8f82da11fAF6A9da08d098e1
  > account:          0x4eF2120fda24F79F2466B37CcD2fa9A881c09d30
  > balance:          8.22047133768847121
  > gas used:         833655
  > gas price:        20 gwei
  > value sent:       0 ETH
  > total cost:       0.0166731 ETH

  Pausing for 2 confirmations...
  -----
  > confirmation number: 3 (block: 4998114)

  > Saving migration to chain.
  > Saving artifacts
  -----
  > Total cost:       0.0166731 ETH

Summary
=====
> Total deployments: 1
> Final cost:       0.0166731 ETH

PS C:\Users\merun\Desktop\book\dapp>
```

← → ↻ 🏠 ⓘ localhost:8080

# Welcome to Decentralized Social Music!

Setup your account, start adding musical recommendations for your friends and follow people that may interest you

[Setup Account](#) [Add Music](#) [Follow People](#)

**Latest musical recommendations from people using the dApp**

# Welcome to Decentralized Social Music!

Setup your account, start adding musical recommendations for your friends and follow people that may interest you

[Setup Account](#) [Add Music](#) [Follow People](#)

**Latest musical recommendations from people using the dApp**

# Welcome to Decentralized Social Music!

Setup your account, start adding musical recommendations for your friends and follow people that may interest you

Setup Account

Add Music

Follow People

## Latest musical recommendations from people using the dApp

*John* 0x5912d3e530201d7B3FF7e140421F03A7CDB386a3

**Regulate - Nate Dogg**

*Martha* 0x1034403ad2f8e9da55272CEA16ec1f2cBdae0E5c

**X - Xzibit**

*Maria* 0x15D59aF5c4CE1fF5e2c45B2047930d41A837Cd74

**Red Lights - Ghost'n'ghost**

*Tomas* 0x809E1D7895B930f638dFe37a110078036062E5C9

**Yalla - INNA**

*Winston* 0x2f6ccd575FA71e2912a31b65F7aFF45C8bf91155

**Casanova - Thomas Hayden**

# Welcome to Decentralized Social Music!

Setup your account, start adding musical recommendations for your friends and follow people that may interest you

[Setup Account](#) [Add Music](#) [Follow People](#)

[Cancel](#) [Submit](#)

# Welcome to Decentralized Social Music!

Setup your account, start adding musical recommendations for your friends and follow people that may interest you

[Setup Account](#) [Add Music](#) [Follow People](#)

[Cancel](#) [Submit](#)

▼	📁 dapp	2
>	📁 .git	3
▼	📁 build	4
▼	📁 contracts	4
	📄 Migrations.json	5
	📄 SocialMusic.json	6
>	📁 contracts	7
>	📁 dist	8
>	📁 migrations	8
>	📁 node_modules	9
▼	📁 src	10
	📄 index.css	10
	📄 index.html	11
	📄 index.js	12
	📄 SocialMusic.json	13
>	📁 test	

# Welcome to Decentralized Social Music!

Setup your account, start adding musical recommendations for your friends and follow people that may interest you

Setup Account

Add Music

Follow People

John 39

"Hi I'm John from twitter!"

**Red Lights 2 - Ghost'n'ghost**

**Nights - Frank Ocean**

Follow

Latest musical recommendations from people using the dApp

John 0x5912d3e530201d7B3F7e140421F03A7CDB386a3

**Regulate - Nate Dogg**

Martha 0x1034403ad2f8e9da55272CEA16ec1f2cBdae0E5c

**X - Xzibit**


Maria 0x15D59aF5c4CE1fF5e2c45B2047930d41A837Cd74
















**Red Lights - Ghost'n'ghost**

Tomas 0x809E1D7895B930f638dFe37a110078036062E5C9

# Chapter 6: Tools, Frameworks, Components, and Services

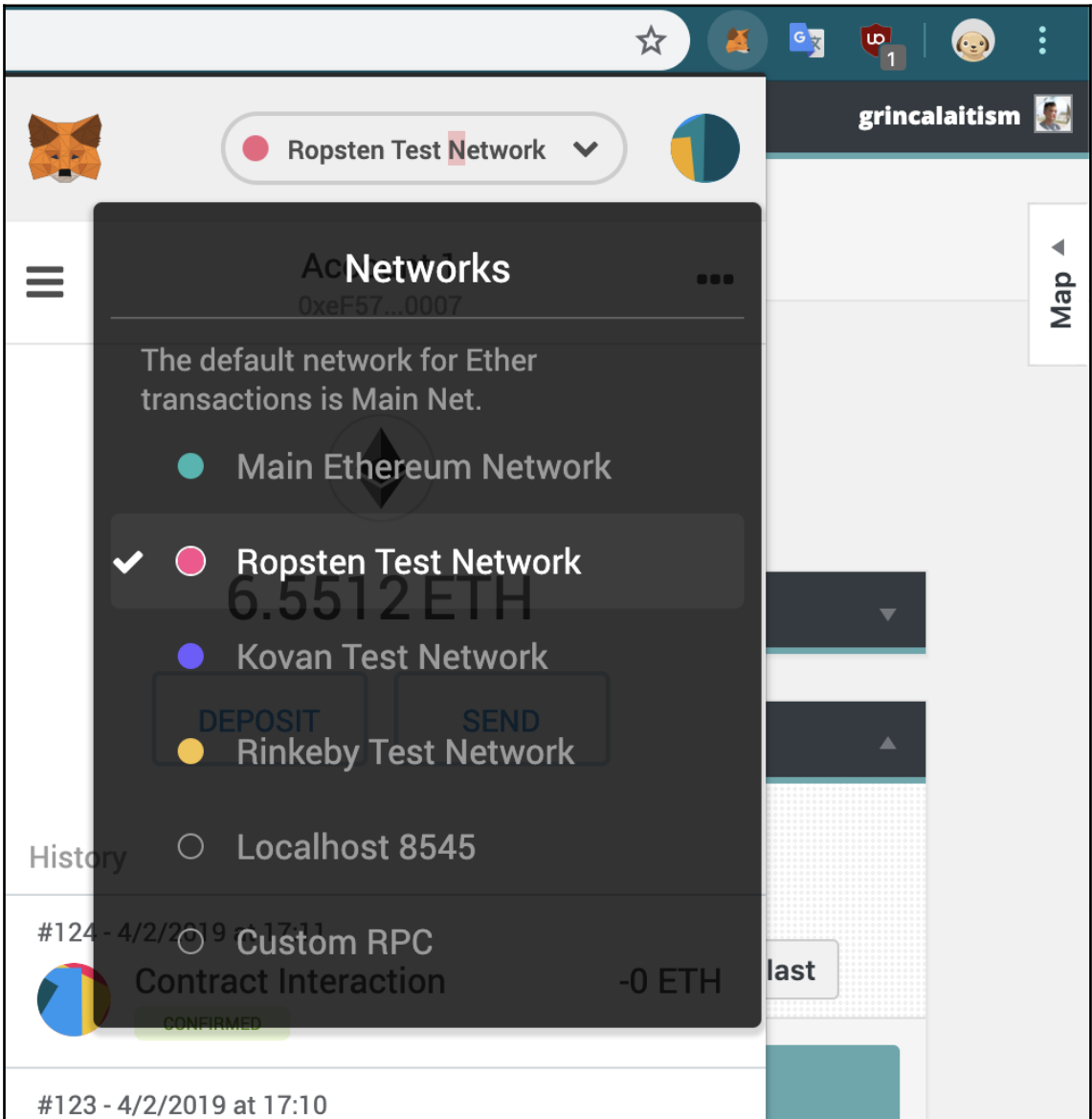
Branch: master [openzeppelin-solidity](#) / [contracts](#) / Create new file Upload files Find file History

 mswezey23 and frangio ERC20 Snapshot Impl #2 (#1617) ... Latest commit 40d1514 11 days ago

..		
 <a href="#">access</a>	Fix warnings (#1606)	a month ago
 <a href="#">crowdsale</a>	Unify code comments style. (#1603)	23 days ago
 <a href="#">cryptography</a>	Fix warnings (#1606)	a month ago
 <a href="#">drafts</a>	ERC20 Snapshot Impl #2 (#1617)	11 days ago
 <a href="#">examples</a>	Fix warnings (#1606)	a month ago
 <a href="#">introspection</a>	Unify code comments style. (#1603)	23 days ago
 <a href="#">lifecycle</a>	Fix warnings (#1606)	a month ago
 <a href="#">math</a>	Unify code comments style. (#1603)	23 days ago
 <a href="#">mocks</a>	ERC20 Snapshot Impl #2 (#1617)	11 days ago
 <a href="#">ownership</a>	Fix warnings (#1606)	a month ago
 <a href="#">payment</a>	Unify code comments style. (#1603)	23 days ago
 <a href="#">token</a>	Unify code comments style. (#1603)	23 days ago
 <a href="#">utils</a>	Fix warnings (#1606)	a month ago
 <a href="#">.npmignore</a>	Clean up npm package (#904)	10 months ago
 <a href="#">ARCHITECTURE.md</a>	Fix typo in ARCHITECTURE.md (#1406)	4 months ago



# Chapter 7: Deployment on Testnet



deposit.

[VIEW ACCOUNT](#)

---



## Test Faucet

Get Ether from a faucet for the Ropsten

[GET ETHER](#)

# MetaMask Ether Faucet

## faucet

address: 0x81b7e08f65bdf5648606c89998a9cc8164397647  
balance: 99343335.82 ether

request 1 ether from faucet

## user

address: 0x8c5a579a06fac3b723d97061e295582de2825035  
balance: 1.61 ether  
donate to faucet:

1 ether 10 ether 100 ether

## transactions

0x1ea60d8c883e5a3f57b3cc48a3acbf204d8ada524ccff4fe043e7960e8083cb4  
0x142f64c8e3eb03c1689651cd0a337198f20e935221781628f3963de10c39d23b

Rinkeby Test Network

Account 2  
0x8c5a...5035

Copy to clipboard

grincalaitism

Map

Home Moments Notifications Messages Search Twitter

Merunas  
@Merunas2  
Tweets 9,208 Following 345 Followers 1,275

0x8c5a579A06FaC3b723d97061E295582dE2825035

IPDB Retweeted

Joachim Lohkamp @JockelLohkamp · 24h  
Hashing ceremony with @GabrielMariva & all 100+ founding members. #INATRA

https://twitter.com/Merunas2/status/1113787414240219136

Home Moments Notifications Messages Search Twitter

Merunas  
@Merunas2  
Tweets 9,208 Following 345 Followers 1,275

0x8c5a579A06FaC3b723d97061E295582dE2825035

Translate Tweet

5:56 AM - 4 Apr 2019

# Rinkeby Authenticated Faucet

<https://twitter.com/Merunas2/status/1113787414240219136>

Give me Ether ▾

5 peers 4150223 blocks 9.046256971665328e+56 Ethers 271884 funded

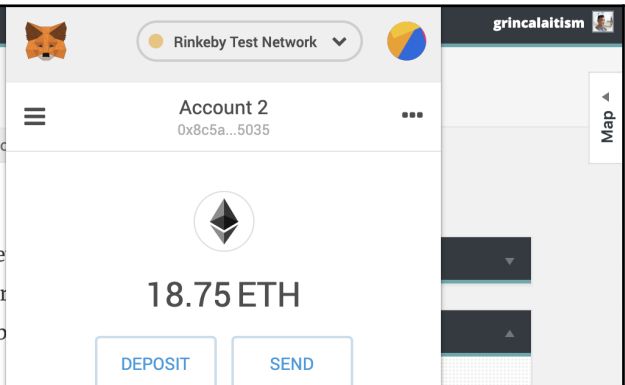
Funding request accepted for  
Merunas2@twitter into  
0x8c5a579A06FaC3b723d97061E295582dE282

# Rinkeby Authenticated Faucet

<https://twitter.com/Merunas2/status/1113787414240219136>

Give me Ether ▾

receive, the quantities are limited to up to 18.75 ether e  
time is reached to get more ether in the future. If ever  
ably because the URL that you provided is not valid, b



The screenshot shows a mobile wallet interface for the Rinkeby Test Network. At the top, it says "Rinkeby Test Network" with a dropdown arrow. Below that, the account name "Account 2" and address "0x8c5a...5035" are displayed. The main balance is shown as "18.75 ETH" with the Ethereum logo. At the bottom, there are two buttons: "DEPOSIT" and "SEND". On the right side, there is a "Map" button. The background shows a blurred browser window with a URL and some text.

Kovan Testnet/faucet Try Icarus for automated response: <https://github.com/kovan-testnet/faucet> or request Kovan ETH - only post your KETH address; no chatter

0x2CE5E56234C2Dd78c01F9D0a0E9fa25d374A7Cd64

86 UNREAD

PEOPLE REPO INFO

10:25

11:15

11:27

11:49

12:00

ACTIVITY

ddorgan commented #78 Mar 10

ddorgan commented #78 Mar 10

debuggor @debuggor 13:25  
0xEe7C7f76795CD0Cab3885fEE6f2c50def89f48A3

videominer @videominer 14:16  
0xbcd050273e3c2be4663a6ad5423fd7988dd3d08

Vladimir Smelov @vladimirfol\_gitlab 14:37  
0x90806826E5EAcdDdCcedfC762ffe8AF19F2FEF39

arjun-nambiar @arjun-nambiar 14:49  
12

Torbjörn Josefsson @yxa\_gitlab 14:52  
0x25e9956EF9C9F1A8afA9927318453a7D30F11C79

0x8c5a579A06FaC3b723d97061E295582dE2825035

JesseAbram commented #78 Mar 10

ddorgan commented #78 Mar 08

JesseAbram opened #78 Mar 08

knaub-am-bau closed #77 Mar 01

knaub-am-bau commented #77 Mar 01

Tbaut commented #77 Feb 28

knaub-am-bau commented #77 Feb 28

knaub-am-bau opened #77 Feb 26



← → ↻ 🏠 🔒 <https://faucet.kovan.network> ☆ 🏠 📧 📺 📶 ⋮

This faucet allows you to request Kovan Ether (KETH) to be used on Kovan Ethereum test network

This is **not** real (mainnet) ETH. It has no market value. It is only useful for testing

A GitHub account is required to be able to request KETH

Login with GitHub

← → ↻ 🏠 🔒 https://faucet.kovan.network/redirect?code=c0da8810e91fd7065ad8&state=9LndCWxRnDmMV265YEPFSKRWWISB9vD9 ☆ 🔔 📄 📱 🌐

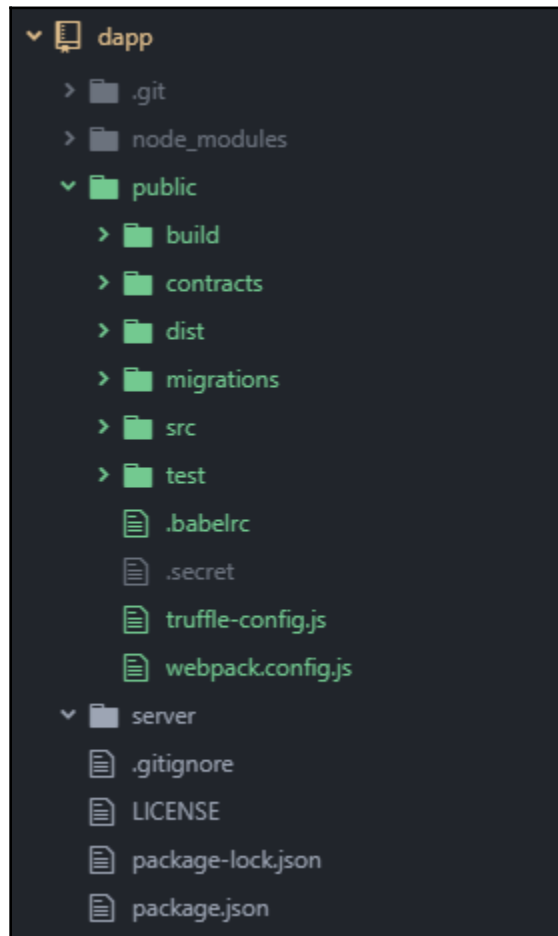
This faucet allows to request KETH once every 24h.

Kovan address..

← → ↻ 🏠 🔒 https://faucet.kovan.network/redirect?code=c0da8810e91fd7065ad8&state=9LndCWxRnDmMV265YEPFSKRWWISB9vD9 ☆ 🔔 📄 📱 🌐

This faucet allows to request KETH once every 24h.  
KETH on it way! [See the transaction on Etherscan](#)

# Chapter 8: Various dApps Integrations





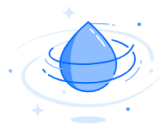
🔍 Search by Droplet name or IP (Ctrl+B)

Create ▾

🛡️ 🔔

USAGE \$0.00 🌟

# Droplets



Looks like you don't have any Droplets.  
Fortunately, it's very easy to create one.

Create Droplet

---

[Blog](#) [Pricing](#) [Careers](#) [Terms](#) [Privacy](#) [Status](#) [API Docs](#) [Tutorials](#) [Support](#)

[Blog](#) [Pricing](#) [Careers](#) [Terms](#) [Privacy](#) [Status](#) [API Docs](#) [Tutorials](#) [Support](#)



PROJECTS

Meru Gr

+ New Project

MANAGE

**Droplets**

Kubernetes **LTD**

Volumes

Databases **LTD**

Spaces

Images

Networking

Monitoring

API

ACCOUNT

Profile

Billing

Security

Referrals

PROJECTS

Meru Gr

+ New Project

MANAGE

Droplets

Kubernetes LTD

Volumes

Databases LTD

Spaces

Images

Networking

Monitoring

API

ACCOUNT

Profile

Billing

Security

Referrals


Search by Droplet name or IP (Ctrl+B)


Create ⌵ 🔒 🔔 **USAGE** 👤  
\$0.00


## Create Droplets


### Choose an image ?


[Distributions](#)
[Container distributions](#)
[One-click apps](#)
[Custom images](#)

  
**Ubuntu**  
18.04.2 x64

  
 FreeBSD  
Select version

  
 Fedora  
Select version

  
 Debian  
Select version

  
 CentOS  
Select version

### Choose a plan

#### Standard Droplets

Standard virtual machines with a mix of memory and compute resources. Best for small projects that can handle variable levels of CPU performance, like blogs, web apps and dev/test environments.

<b>\$5/mo</b> <small>\$0.007/hour</small>	<b>\$10/mo</b> <small>\$0.015/hour</small>	<b>\$15/mo</b> <small>\$0.022/hour</small>	<b>\$15/mo</b> <small>\$0.022/hour</small>
1 GB / 1 CPU 25 GB SSD disk 1000 GB transfer	2 GB / 1 CPU 50 GB SSD disk 2 TB transfer	3 GB / 1 CPU 60 GB SSD disk 3 TB transfer	2 GB / 2 CPUs 60 GB SSD disk 3 TB transfer









#### CPU Optimized Droplets

Compute-optimized virtual machines with dedicated hyper-threads from best in class Intel processors. Best for CPU-intensive applications like CI/CD, video encoding and transcoding, machine learning, ad

<b>\$40/mo</b> <small>\$0.060/hour</small>	<b>\$80/mo</b> <small>\$0.119/hour</small>	<b>\$160/mo</b> <small>\$0.238/hour</small>	<b>\$320/mo</b> <small>\$0.476/hour</small>
4 GB / 2 CPUs 25 GB SSD disk	8 GB / 4 CPUs 50 GB SSD disk	16 GB / 8 CPUs 100 GB SSD disk	32 GB / 16 CPUs 200 GB SSD disk

[Show all plans](#)

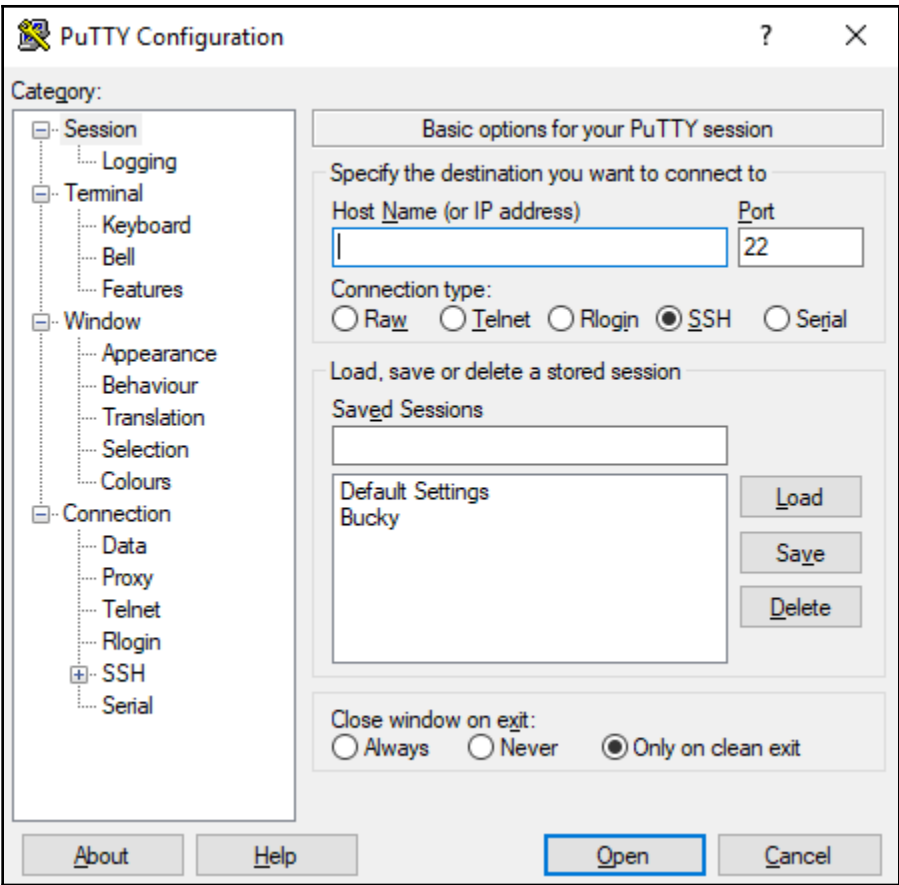
### Choose a datacenter region

 New York <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>1</span> <span>2</span> <span>3</span> </div>	 San Francisco <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>1</span> <span>2</span> </div>	 Amsterdam <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>2</span> <span>3</span> </div>	 Singapore <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>1</span> </div>	 London <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>1</span> </div>	 Frankfurt <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>1</span> </div>
 Toronto <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>1</span> </div>	 Bangalore <div style="display: flex; justify-content: space-around; width: 100%; font-size: small;"> <span>1</span> </div>				

• ubuntu-s-1vcpu-1gb-fra1-01
Add tags
🔔 ⋮

---

Image	🔴 Ubuntu 18.04.2 x64	Region	FRA1
Size	1 vCPUs 1GB / 25GB Disk (\$5/mo) <a href="#">Resize</a>	IPv4	<span style="background-color: #ffff00;">142.93.170.67</span>
		IPv6	<a href="#">Enable</a>
		Private IP	<a href="#">Enable</a>



```
root@ubuntu-s-1vcpu-1gb-fra1-01: ~
* Documentation: https://help.ubuntu.com
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/advantage

System information as of Fri Feb 22 11:10:19 UTC 2019

System load: 0.64          Processes:          79
Usage of /:  4.0% of 24.06GB Users logged in:   0
Memory usage: 11%        IP address for eth0: 157.230.104.243
Swap usage:  0%

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

Last login: Fri Feb 22 11:08:43 2019 from 139.47.1.98
Changing password for root.
(current) UNIX password:
Enter new UNIX password:
Retype new UNIX password:
root@ubuntu-s-1vcpu-1gb-fra1-01:~# █
```

Linux Binaries (x64)	64-bit		
Linux Binaries (ARM)	ARMv6	ARMv7	ARMv8
Source Code	node-v11.10.0.tar.gz		

**GoDaddy** EN Contact Us 24/7 Help Blog Merunas

Domains Websites WordPress Hosting Web Security Online Marketing Email & Office Phone Numbers Promos

socialmusic.com Search Domain

**+org** €10.99\* **.LIVE** €1.76\* **.US** €7.05 **.life** €4.40\*

Mariana Bunnie Cakes

**Ready to put your domains to work?**

<b>socialmusicservice.com</b> <small>Estimated Value</small>	+€18.99/yr <b>€17,541.01</b> ?	<b>Add to Cart</b>
<b>socialmusic.online</b>	<b>✓ Added</b> ✕ Remove	
<b>socialmusic.education</b>	<b>€22.04</b> ? Same price next year	<b>Add to Cart</b>
<b>thesocialrecords.com</b>	<del>€18.99</del> <b>€0.99</b> ? for the first year with a 2 year registration	<b>Add to Cart</b>

**socialmusic.online** ●●● \$650 [Use my domain](#) Auto-renew is on [Protect my info](#)  
Renews on 2/23/2020 [Buy for €7.99/yr](#)

**GoDaddy** | **Domain Manager**

[Domains](#) ▾ [Buy & Sell](#) ▾ [DNS](#) ▾ [Settings](#) ▾ [Help](#) ▾

My Domains

# DNS Management

**socialmusic.online**

[Select a different domain](#)

# Records

Last updated 2/23/2019 11:25 AM

Type	Name	Value	TTL
A			
<b>Host *</b>	<b>Points to *</b>	<b>TTL *</b>	
<input type="text" value="@"/>	<input type="text" value="137.230.104.111"/>	<input type="text" value="Custom"/>	
		<b>Seconds *</b>	
		<input type="text" value="600"/>	
		<input type="button" value="Save"/>	<input type="button" value="Cancel"/>

```
merunas — merunas@ubuntu-s-1vcpu-1gb-fra1-01: ~ — ssh merunas@socialmusic.online — 84x...
Enter email address (used for urgent renewal and security notices) (Enter 'c' to
cancel): merunasgrincalaitis@gmail.com

----- Editor PDF Preview Current status: Draft -----
Please read the Terms of Service at
https://letsencrypt.org/documents/LE-SA-v1.2-November-15-2017.pdf. You must
agree in order to register with the ACME server at
https://acme-v01.api.letsencrypt.org/directory
-----
(Agree/C)ancel: A

-----
Would you be willing to share your email address with the Electronic Frontier
Foundation, a founding partner of the Let's Encrypt project and the non-profit
organization that develops Certbot? We'd like to send you email about EFF and
our work to encrypt the web, protect its users and defend digital rights.
-----
(Y)es/(N)o: N

Which names would you like to activate HTTPS for?
-----
1: socialmusic.online

-----
Select the appropriate numbers separated by commas and/or spaces, or leave input
blank to select all options shown (Enter 'c' to cancel): 1
Obtaining a new certificate
Performing the following challenges:
http-01 challenge for socialmusic.online
nginx: [warn] duplicate MIME type "text/html" in /etc/nginx/sites-enabled/default:16
Waiting for verification...
Cleaning up challenges
nginx: [warn] duplicate MIME type "text/html" in /etc/nginx/sites-enabled/default:14
Deploying Certificate to VirtualHost /etc/nginx/sites-enabled/default
nginx: [warn] duplicate MIME type "text/html" in /etc/nginx/sites-enabled/default:14
```

Please choose whether or not to redirect HTTP traffic to HTTPS, removing HTTP access

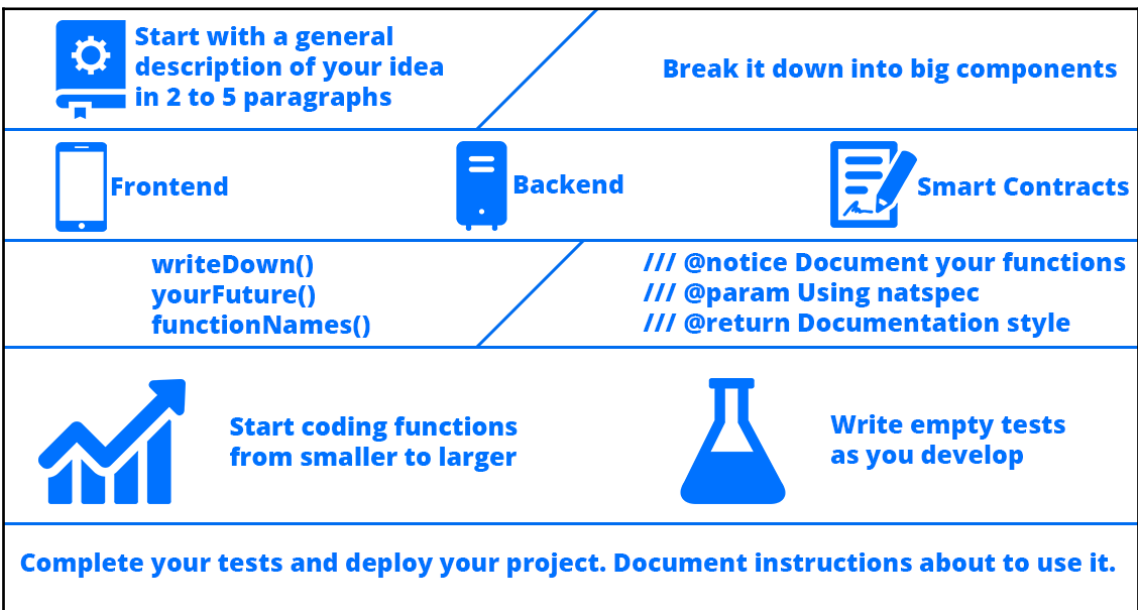
- 1: No redirect - Make no further changes to the webserver configuration.
- 2: Redirect - Make all requests redirect to secure HTTPS access. Choose this for new sites, or if you're confident your site works on HTTPS. You can undo this change by editing your web server's configuration.

Select the appropriate number [1-2] then [enter] (press 'c' to cancel): 2  
Redirecting all traffic on port 80 to ssl in /etc/nginx/sites-enabled/default  
nginx: [warn] duplicate MIME type "text/html" in /etc/nginx/sites-enabled/default:13

Congratulations! You have successfully enabled https://socialmusic.online

You should test your configuration at:

<https://www.ssllabs.com/ssltest/analyze.html?d=socialmusic.online>





todo-manager 0.2.10



11,418

Manage TODOs, NOTES and more from inside your editor



benjaminRomano



# **Chapter 9: Decentralized Exchanges Workflow**



Selected assets:

ETH

BAT

Your portfolio:

ETH: 10

BAT: 200

Money management:

Deposit

Withdraw

Actions:

Buy

Sell

Market Order

SELECTED ASSETS

ETH

BAT

YOUR PORTFOLIO

ETH:

10

BAT:

200

MONEY MANAGEMENT

Deposit

Withdraw

ACTIONS

Buy

Sell

Market Order

BUY

ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

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ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

ETH BAT  
Buy 120 ETH at 200 BAT each

SELL

ETH BAT  
Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each

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Sell 80 ETH at 305 BAT each

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Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each

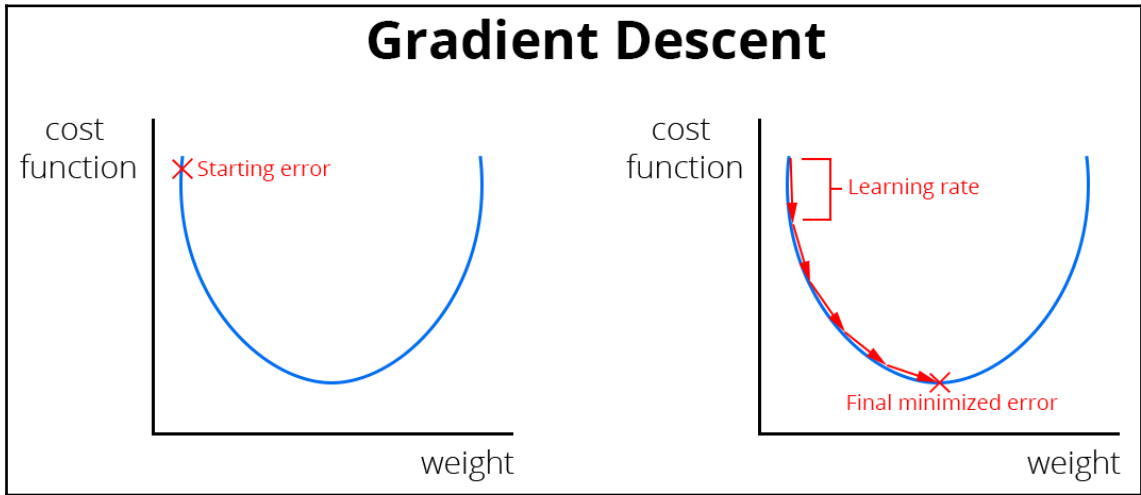
ETH BAT  
Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each

ETH BAT  
Sell 80 ETH at 305 BAT each



# Chapter 10: Machine Learning on the Ethereum Blockchain



# Chapter 11: Creating a Blockchain-based Social Media Platform

**Top hashtags**

- [#dapp](#)
- [#Ethereum](#)
- [#blockchain](#)
- [#technology](#)
- [#design](#)

**Followed hashtags**

- [#electronics](#)
- [#design](#)
- [#robots](#)
- [#futuurology](#)
- [#manufacturing](#)

Publish content...

Hashtags separated by commas...

**Publish**

0x211824098yf7320417812j1002341342342341234

This is a test

[#test](#) [#dapp](#) [#blockchain](#)

3/24/2019

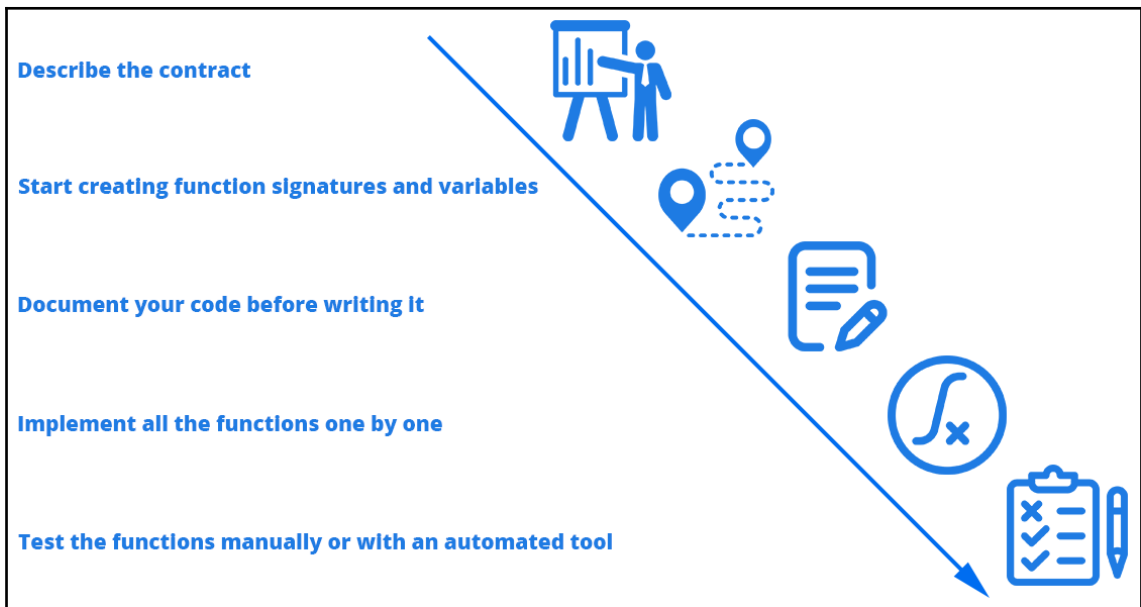
0x211824098yf7320417812j1002341342342341234

This is another test

[#sample](#) [#dapp](#) [#Ethereum](#)

3/24/2019





### Top hashtags

[#dapp](#)

[#Ethereum](#)

[#blockchain](#)

[#technology.](#)

[#design](#)

## Top hashtags

There are no hashtags yet, come back  
later!

## Followed hashtags

[#electronics](#)

[#design](#)

[#robots](#)

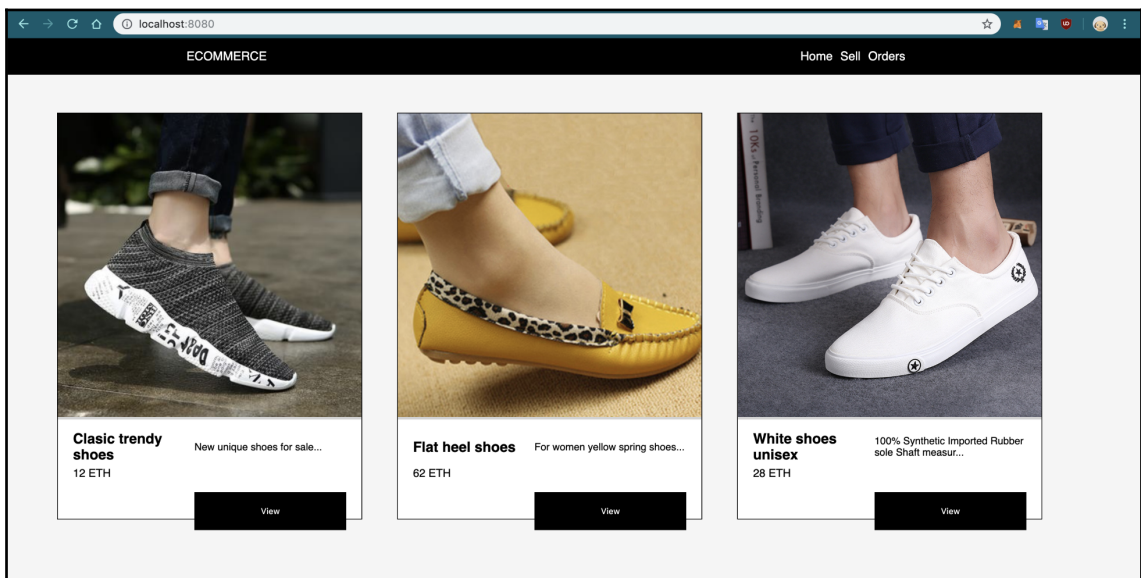
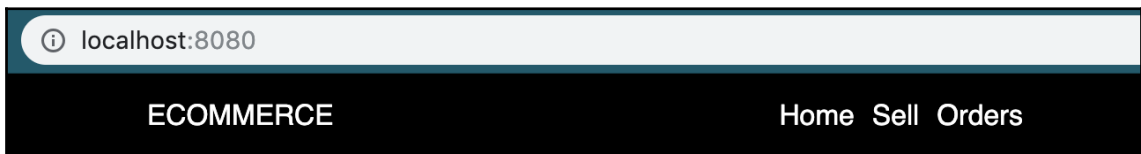
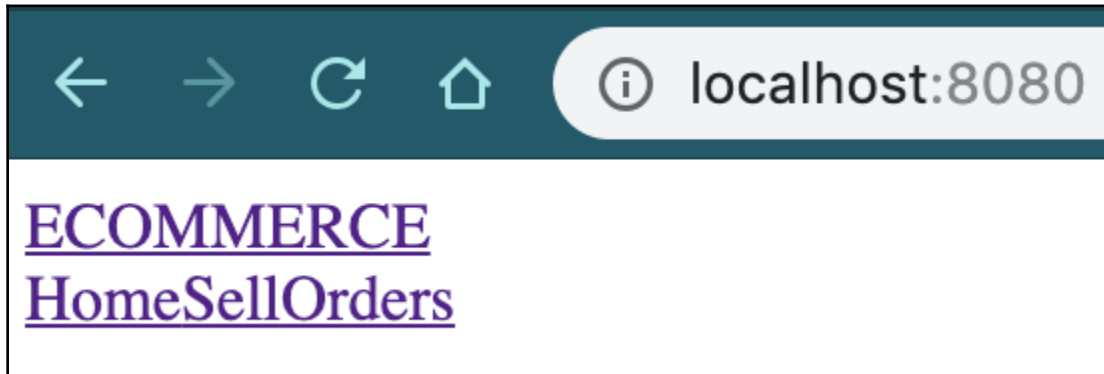
Publish content...

Hashtags separated by commas...

0x211824098yf7320417812j1002


This is a test

# Chapter 12: Creating a Blockchain-Based E-Commerce Marketplace



localhost:8080/product

ECOMMERCE Home Sell Orders



**Clasic trendy shoes**

- New unique shoes for sale


12 ETH

Buy

localhost:8080/orders

ECOMMERCE Home Sell Orders

**PENDING ORDERS AS A SELLER**




**White shoes unisex**

State: pending  
100% Synthetic ...  
28 ETH

View

Mark as completed

**PENDING ORDERS AS A BUYER**




**Flat heel shoes**

State: pending  
For women yello...  
62 ETH

View

**COMPLETED SELL ORDERS**




**Clasic trendy shoes**

State: completed  
New unique shoe...  
12 ETH

View

**COMPLETED BUY ORDERS**




**White shoes unisex**

State: completed  
100% Synthetic ...  
28 ETH

View

localhost:8080


ECOMMERCE Home Sell Orders



**Dark Star Leather Shoes**  
27.5 ETH

man made material Low heel height: 1" (approx).pla...


[View](#)



**Bruno Marc Shoes**  
33 ETH

man made material/ Designed in USA Wooden heel heig...

[View](#)



**Leather Brown Shoes**  
14.5 ETH

Leather Imported Synthetic sole Breathable leather...

[View](#)