
Blockchain-Lab

V0.2

AUSTRIAPRO

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Inhalt

- Phase 1 „classic“
- Phase 2 „Ethereum“ – smart contracts
- ...

Phase 1

- „classic“ (crypto coin based) blockchains
 - Look & Feel wie Bitcoin, Litecoin ... Client
 - „Hands on“
 - Installation & Betrieb wallet
 - “werte” transferieren (senden, empfangen)
 - Nachrichten signieren
 - Mining ausprobieren
 - Standalone, CPU, GPU
 - Über Miningpool
 - Weitere Tools kennenlernen
 - Blockexplorer
 - Paper-, Brain-wallets
 - Unterschied „CryptoCurrency – Blockchain“

Classic crypto coin (am Beispiel C2coin)

- Wallet
 - Wallet für Windows:
http://www4.baumann.at/downloads/c2coin_Wallet_Windows-20141107.zip
 - Kurzanleitung dazu:
<http://www4.baumann.at/downloads/C2coin-Readme.txt>
- Mining
 - Mining mit GPUs: <http://www4.baumann.at/downloads/Mining-with-GPUs.txt>
 - Miningportal: <http://coinz.at:81/>
- Tools
 - Faucet (coins senden lassen) <http://coinz.at/c2coin/send.php>
 - Infoseite zum C2coin Netz: <http://coinz.at/c2coin/>
 - Einfacher Blockexplorer: <http://coinz.at/c2coin/be.php>
 - Walletgenerator: <http://coinz.at/walletgenerator/>

Beispiel: C2coin - Wallet

The screenshot displays the C2coin wallet interface. The window title is "C2coin - Brieftasche". The menu bar includes "Datei", "Einstellungen", and "Hilfe". The navigation bar contains "Übersicht" (selected), "Überweisen", "Empfangen", "Transaktionen", and "Adressen".




Brieftasche

Kontostand: **3543518.60366691 C2C**

Unbestätigt: **0.00 C2C**

Unreif: **400.00 C2C**

Letzte Transaktionen

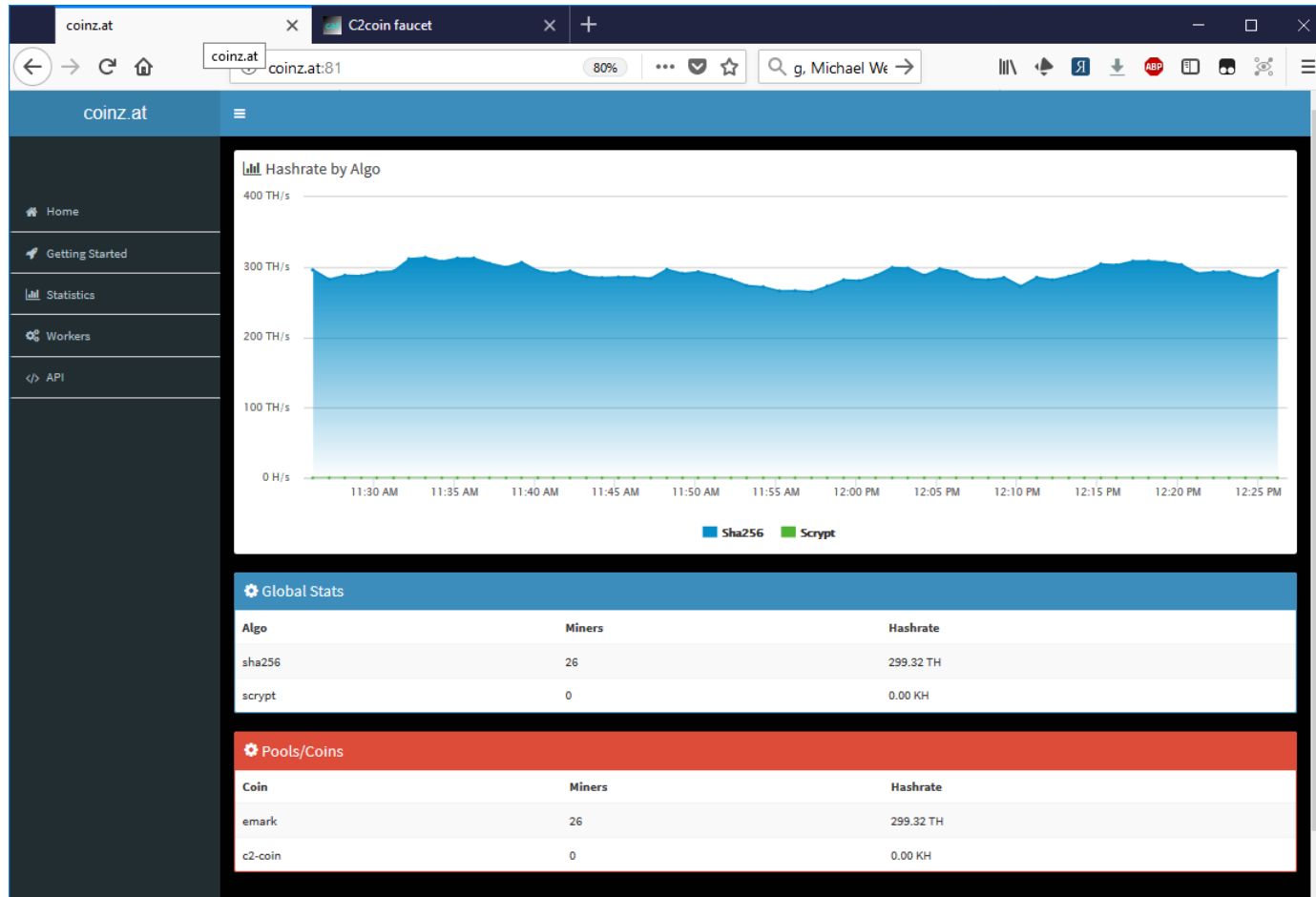
	06.11.2014 08:00	[-1000.00 C2C]
	Test wrong	
	11.04.2018 10:28	[+200.00 C2C]
	(CeMLhxNMjVYoEvgArAMpxQ3PTQcnw54fzG)	
	11.04.2018 10:27	[+200.00 C2C]
	(CX1MaJB42bgXy6eAHUev3A1UTCW5DpYZzK)	

In the bottom right corner, there is a small status indicator showing a green checkmark and a signal strength icon.

Beispiel: C2coin – GPU Mining

```
c:\CryptoCoins\cudaminer-2014-02-28\x64\cudaminer.exe
[2018-04-11 10:33:10] 1 miner threads started, using 'scrypt' algorithm.
[2018-04-11 10:33:10] GPU #0: Quadro 600 with compute capability 2.1
[2018-04-11 10:33:10] GPU #0: interactive: 1, tex-cache: 0 , single-alloc: 0
[2018-04-11 10:33:10] GPU #0: 32 hashes / 4.0 MB per warp.
[2018-04-11 10:33:10] GPU #0: using launch configuration F2x16
[2018-04-11 10:33:10] GPU #0: Quadro 600, 20.75 khash/s
[2018-04-11 10:33:15] GPU #0: Quadro 600, 22.67 khash/s
[2018-04-11 10:33:20] GPU #0: Quadro 600, 22.57 khash/s
[2018-04-11 10:33:25] GPU #0: Quadro 600, 22.64 khash/s
[2018-04-11 10:33:30] GPU #0: Quadro 600, 22.64 khash/s
[2018-04-11 10:33:35] GPU #0: Quadro 600, 21.18 khash/s
[2018-04-11 10:33:40] GPU #0: Quadro 600, 21.84 khash/s
[2018-04-11 10:33:42] GPU #0: Quadro 600, 21.67 khash/s
[2018-04-11 10:33:43] accepted: 1/1 (100.00%), 21.67 khash/s (yay!!!)
[2018-04-11 10:33:48] GPU #0: Quadro 600, 22.31 khash/s
[2018-04-11 10:33:53] GPU #0: Quadro 600, 22.10 khash/s
[2018-04-11 10:33:58] GPU #0: Quadro 600, 22.14 khash/s
[2018-04-11 10:34:03] GPU #0: Quadro 600, 22.42 khash/s
[2018-04-11 10:34:08] GPU #0: Quadro 600, 22.61 khash/s
[2018-04-11 10:34:13] GPU #0: Quadro 600, 22.63 khash/s
[2018-04-11 10:34:17] GPU #0: Quadro 600, 22.29 khash/s
[2018-04-11 10:34:18] accepted: 2/2 (100.00%), 22.29 khash/s (yay!!!)
[2018-04-11 10:34:23] GPU #0: Quadro 600, 22.45 khash/s
[2018-04-11 10:34:28] GPU #0: Quadro 600, 22.10 khash/s
```

Beispiel: Miningportal coinz.at



Beispiel: C2coin – „Faucet“

C2coin faucet

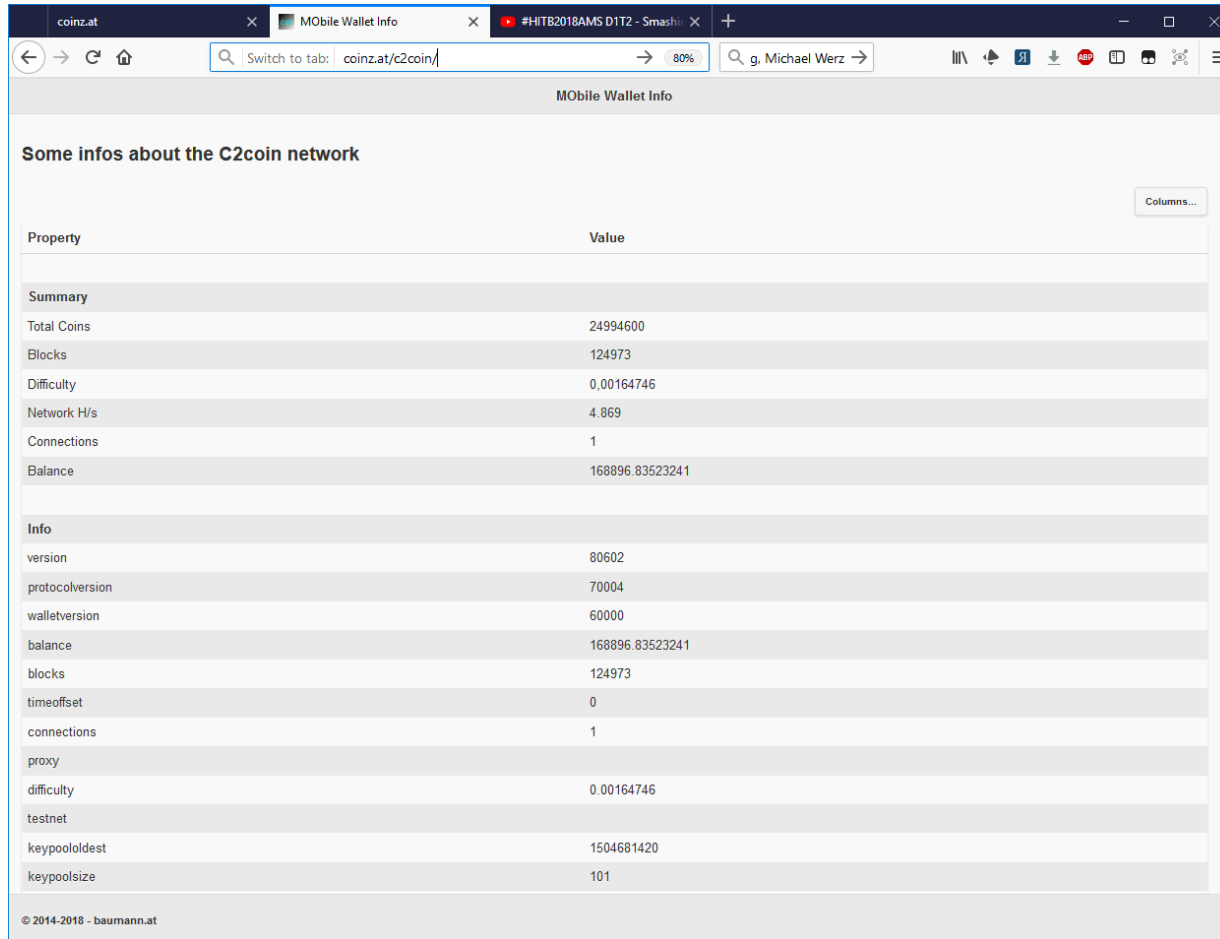
C2coin faucet

Enter a C2coin address to receive some coins, e.g. CMPiHHuwjSpf2fYpxrgMKsZFBrijSwEeSW:

C2coin address:

[Back](#)

Beispiel: C2coin – Network Info



MOBILE WALLET INFO

Some infos about the C2coin network

Columns...

Property	Value
Summary	
Total Coins	24994600
Blocks	124973
Difficulty	0.00164746
Network H/s	4.869
Connections	1
Balance	168896.83523241
Info	
version	80602
protocolversion	70004
walletversion	60000
balance	168896.83523241
blocks	124973
timeoffset	0
connections	1
proxy	
difficulty	0.00164746
testnet	
keypoololdest	1504681420
keypoolsize	101

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Beispiel: C2coin – Block Explorer

C2coin block explorer

Connections: 1

Based on [RPC Ace](#) v0.6.7

Blocks: [124581](#)

Difficulty: 0.00024414 (= 0.00699 MH/s)

Net hashrate: 0.00018 MH/s (last 10 Blocks)


Net hashrate: 0.00009 MH/s (last 100 Blocks)

Block	Hash	Difficulty	Time (UTC)	Tx# · Value out
124581	39687ae93816239f ...	0.000244 (16)	08:34:13 11-Apr-2018	1 · 200
124580	8e64e92f50f9515d ...	0.000244 (16)	08:33:40 11-Apr-2018	2 · 1600
124579	83eacb3d35a05e4d ...	0.000244 (16)	08:28:07 11-Apr-2018	1 · 200
124578	f5919c1fbbad84a9 ...	0.000244 (16)	08:27:52 11-Apr-2018	1 · 200
124577	82a7e682d9b6948a ...	0.000244 (16)	08:26:13 11-Apr-2018	1 · 200
124576	5257148bc23a5a43 ...	0.000244 (16)	08:25:48 11-Apr-2018	1 · 200
124575	9424957414d3afb9 ...	0.000244 (16)	08:24:46 11-Apr-2018	1 · 200
124574	0b1ec7c761362250 ...	0.000244 (16)	08:24:22 11-Apr-2018	1 · 200
124573	29cb0a1281644d7a ...	0.000244 (16)	17:06:14 10-Apr-2018	2 · 800
124572	de0a3e49aea0e06d ...	0.000244 (16)	16:09:52 10-Apr-2018	1 · 200
124571	e97a4b7d395b3df1 ...	0.000244 (16)	16:07:06 10-Apr-2018	2 · 1400
124570	edfca9e2f7553be9 ...	0.000244 (16)	15:58:39 10-Apr-2018	1 · 200

[< Newer](#)

[Older >](#)

Beispiel: WalletGenerator


 **WalletGenerator.net**
Universal Open Source Client-Side Wallet Generator

Choose currency:

Single Wallet | Paper Wallet | Bulk Wallet | Brain Wallet | Wallet Details | Support

Generate New Address Print


Public Address



SHARE

CGqCQCZeFXpjPxpj3sYK6pDXkSsnMKTE2mf

Private Key (Wallet Import Format)



SECRET

6F XuWRPeNo2Rhm7zKCZMrtdJZy5MMzWVuFQAHNn2vSMtKudRi2E

Step 0. Follow the security checklist recommendation

First step is to **download** this website from [Github](#) and open the index.html file directly from your computer. It's just too easy to sneak some evil code in the 6000+ lines of javascript to leak your private key, and you don't want to see your fund stolen. Code version control make it much easier to cross-check what actually run. For extra security, **unplug your Internet access** while generating your wallet.

Step 1. Generate new address


Choose your currency and click on the "Generate new address" button.

Step 2. Print the Paper Wallet

Click the Paper Wallet tab and print the page on high quality setting. **Never save the page as a PDF file to print it later since a file is more likely to be hacked than a piece of paper.**

Step 3. Fold the Paper Wallet

Fold your new Paper wallet following the lines.



Phase 2

- Ethereum based
 - Smart Contracts
 - Oracles
 - Tokens (vgl. ICOs)
- Lab: Ethereum Test-Chain (Private)
 - Bootnode
 - Node (mit On Demand Mining)
 - CPU Mining
- => Setup eigener Node
 - Anleitung siehe https://blockchains.web-lab.at/austriapro/Ethereum-Testnet_20180528.pdf

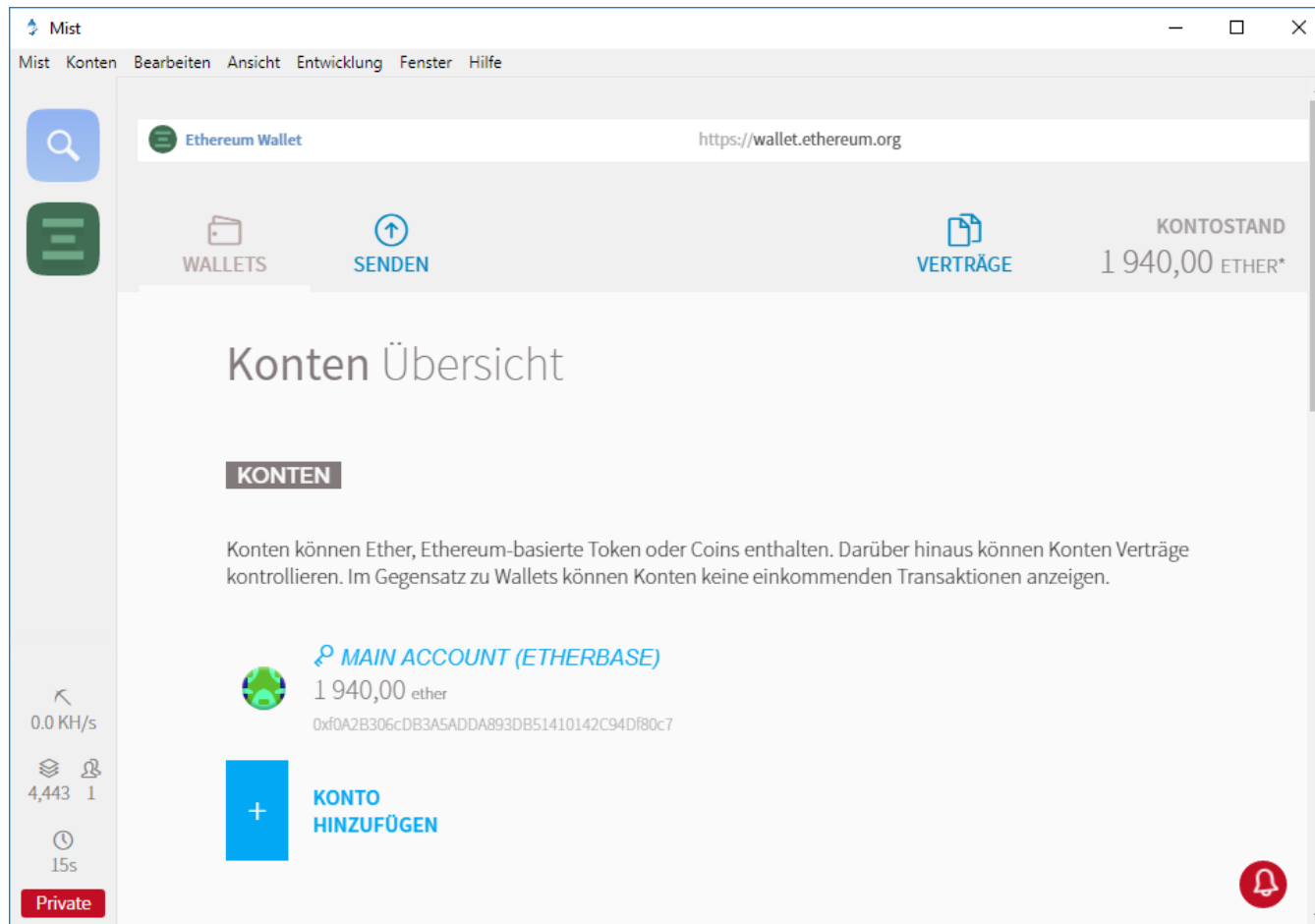
Ethereum Test-Chain - console

```
C:\Windows\System32\cmd.exe - pc5_bn.cmd
WARN [04-11|10:38:51] Head state missing, repairing chain      number=3755 hash=c818a4...1b9c2d
INFO [04-11|10:38:51] Rewound blockchain to past state                    number=3602 hash=703b25...eb8bd4
INFO [04-11|10:38:51] Loaded most recent local header                          number=3755 hash=c818a4...1b9c2d td=2505735899
INFO [04-11|10:38:51] Loaded most recent local full block                     number=3602 hash=703b25...eb8bd4 td=2459503000
INFO [04-11|10:38:51] Loaded most recent local fast block                    number=3755 hash=c818a4...1b9c2d td=2505735899
INFO [04-11|10:38:51] Loaded local transaction journal                       transactions=0 dropped=0
INFO [04-11|10:38:51] Regenerated local transaction journal                  transactions=0 accounts=0
WARN [04-11|10:38:51] Blockchain not empty, fast sync disabled
INFO [04-11|10:38:51] Starting P2P networking
INFO [04-11|10:38:54] UDP listener up                                       self=enode://92f61c5ab4e4a999b05733ad68abdde9649351
1789fee25ed8ce2c4b7977e521081fdb6fab8d2575e1ef0e115a59d9c87fcfd5ba7ea2907cede2089c16cbb75@85.124.9.90:30332
INFO [04-11|10:38:54] RLPx listener up                                       self=enode://92f61c5ab4e4a999b05733ad68abdde9649351
1789fee25ed8ce2c4b7977e521081fdb6fab8d2575e1ef0e115a59d9c87fcfd5ba7ea2907cede2089c16cbb75@85.124.9.90:30332
INFO [04-11|10:38:55] HTTP endpoint opened                                   url=http://127.0.0.1:8000 cors=* vhosts=localhost
INFO [04-11|10:38:55] IPC endpoint opened                                    url=\\\\.\\pipe\\geth.ipc
Welcome to the Geth JavaScript console!

instance: Geth/c2eth-pc5/v1.8.3-stable-329ac18e/windows-amd64/go1.10
INFO [04-11|10:38:55] Etherbase automatically configured                    address=0x9159e7fc8a8639E812d9624868527703a40baA58
coinbase: 0x9159e7fc8a8639e812d9624868527703a40baa58
at block: 3602 (Mon, 09 Apr 2018 07:30:47 CEST)
  datadir: c:\CryptoCoins\c2eth-chain
  modules: admin:1.0 debug:1.0 eth:1.0 miner:1.0 net:1.0 personal:1.0 rpc:1.0 txpool:1.0 web3:1.0

> INFO [04-11|10:39:05] Block synchronisation started
INFO [04-11|10:39:05] Imported new chain segment                            blocks=7 txs=0 mgas=0.000 elapsed=75.163ms mgasps=0
.000 number=3609 hash=88cd6e...3b69cc cache=4.95kB
INFO [04-11|10:39:05] Imported new chain segment                            blocks=29 txs=2 mgas=0.060 elapsed=81.251ms mgasps=
0.736 number=3638 hash=12c812...5dd0c6 cache=26.11kB
INFO [04-11|10:39:05] Imported new chain segment                            blocks=117 txs=8 mgas=0.234 elapsed=103.071ms mgasp
s=2.271 number=3755 hash=c818a4...1b9c2d cache=94.47kB
```

Ethereum Test-Chain - „Mist“ - Wallet



Ethereum Test-Chain - Smart Contract

Mist

Mist Konten Bearbeiten Ansicht Entwicklung Fenster Hilfe

Ethereum Wallet <https://wallet.ethereum.org> account > 0x0995f5620c11ccf765dd0fe2188500ecf9aeaae4

WALLETS SENDEN VERTRÄGE 2 025,00 ETHER*

SMARTCONTRACT1 0,00 ETHER*

SCHLIESSE VERTRAGSINFORMATIONEN

VERTRAG AUSLESEN IN VERTRAG SCHREIBEN

Name Baumann Test - 28.5.2018

Sum 42

Select function Add

_value - 256 bits unsigned integer 1234

Execute from

0.0 KH/s
4,460 1
23s
Private

Startseite Lab

- <https://blockchains.web-lab.at/austriapro/>

AustriaPro Blockchain Lab

Phase 1: classic crypto currency based blockchains

Wallet

- [C2coin - Wallet für Windows](#)
- [Kurzanleitung dazu](#)

Mining

- [Mining mit GPUs](#)
- [Miningportal](#)

Tools

- [Faucet \(coins senden lassen\)](#)
- [Infoseite zum C2coin Netz](#)
- [Einfacher Blockexplorer](#)
- [Walletgenerator](#)

Phase 2: Ethereum based (smart contracts and oracles)

Privates Ethereum Test-Netz

- [Setup-Anleitung](#)
- [In Vorbereitung: Smart Contracts - Beispiele](#)

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