
Arbeitskreis Blockchain

Arbeitsgruppe Technik – Blockchain Lab

AUSTRIAPRO

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17.1.2019

Agenda – Blockchain Lab

- Blockchain Lab - News
 - Multichain Node mit Docker (apro-lab-1)
 - API Library für PHP
 - Erweiterung „Blockchain Demo“
 - Lab10 (Artis)
 - Obs Testnetz: Fullnode, Demos
- Prototyp CertiChain
 - Erweiterung Zertifikat (PDF)
- Blockchain Lab – 2019
 - Planung Themen

Multichain Node mit Docker

- Vereinfachtes Setup von Multichain Nodes mit Docker
 - Containerumgebung für Applikationen
 - Alle Betriebssysteme (Windows, Mac, Linux ...)
- Am Beispiel „apro-lab-1“
- Setup & Konfiguration
 - in 8 (einfachen) Schritten
- Anleitung und Scripts siehe
 - <https://github.com/austriapro/blockchain>



Erweiterung „Blockchain Demo“

- Blockchain Demo (*)
 - Fokussiert auf Kryptowährung als Blockchainanwendung
 - Zusammenhang zu anderen Anwendungen?
- => Erweiterungen
 - 1. Erweiterung: Strukturierte Daten
 - Einsatz in anderen Bereichen als Kryptowährungen zeigen

(*) von Anders Brownworth => adaptiert

Strukturierte Daten - Beispiele

Blockchain Demo

Hash

Block

Blockchain

Distributed

Tokens

Coinbase

Block with (structured) Data

Block: # 1

Nonce: 36670

Data:

0:	<code>AirQualData = {"station": "LOB", "zeit": "2018-11-30T16:30:00+01:00", "werte": {"LTM": 21.26, "WG": 3.33, "WR": 209.7, "RF": 46.47, "NO2": 25.35, "NOX": 29.73, "PM10": 19.24, "PM25": 7.43, "O3": 79.87}}</code>
1:	<code>LogSens = {"DevID": "lg2c-8891e", "Lat": 48.151577, "Lon": 15.001641, "Temp": 17.33, "Press": 997.4999, "Hum": 74.7, "MaxAcc": 0.71, "TimeStamp": "2018-11-30T16:30:47+01:00" }</code>
2:	<code>SmartCitySense = {"Pressure": 997.4999, "Temp": 1.33, "HumidityUnit": "%", "DeviceName": "SC228-626", "Humidity": 74.73, "PressureUnit": "hPa", "TempUnit": "C", "TimeStamp": "2018-11-30T16:29:56+01:00" }</code>
3:	<code>Notarize = {"HashValue": "941c6346bf48c7d60fb2e324c8de67ddb4be1d7ae491a893caff590856fb5be", "HashType": "SHA256", "Comment": "Service/Publisher https://blockchains.web-lab.at/poe/", "FileName": "", "TimeStamp": "2018-11-30T16:28:04+01:00" }</code>

Prev: 00

Hash: 00004897e095d2484ba91ab8da5b3733252fc86a9572ffeb8c2517b8305f

Mine

- Luftqualität ...
- Logistik: Sensoren, Position ...
- SmartCity ...
- Notarisierung ...

Lab10 collective

- Genossenschaft in Graz
 - Projekte im Blockchain (u.a.) Bereich/en
- „Artis“ Blockchain Netzwerk
 - basierend auf Ethereum
 - Permissioned, aber „Mining“ (PoS, PoAuthority) limitiert auf (wenige) „bekannte“ Nodes der Kollektive
 - Basis für dApps usw.
- Testnetz
 - AustriaPro Node
 - <http://status.tau1.artis.network/>
 - Nur Node, kein TrustNode ...

ARTIS Network Status

status.tau1.artis.network

NETWORK NAME
ARTIST1

BEST BLOCK
#638,737

LAST BLOCK
0s ago

AVG BLOCK TIME
6.55s

ACTIVE NODES 9/9

GAS PRICE 1 gnash

PAGE LATENCY 24 ms

UPTIME

BLOCK TIME

BLOCK PROPAGATION

LAST BLOCKS MINERS

0x9ed779e70e66645c17859b877de36aa73c3dd11b

0x473521e84e0550aae9d76b90b219ec90a9311574

TRANSACTIONS

GAS SPENDING

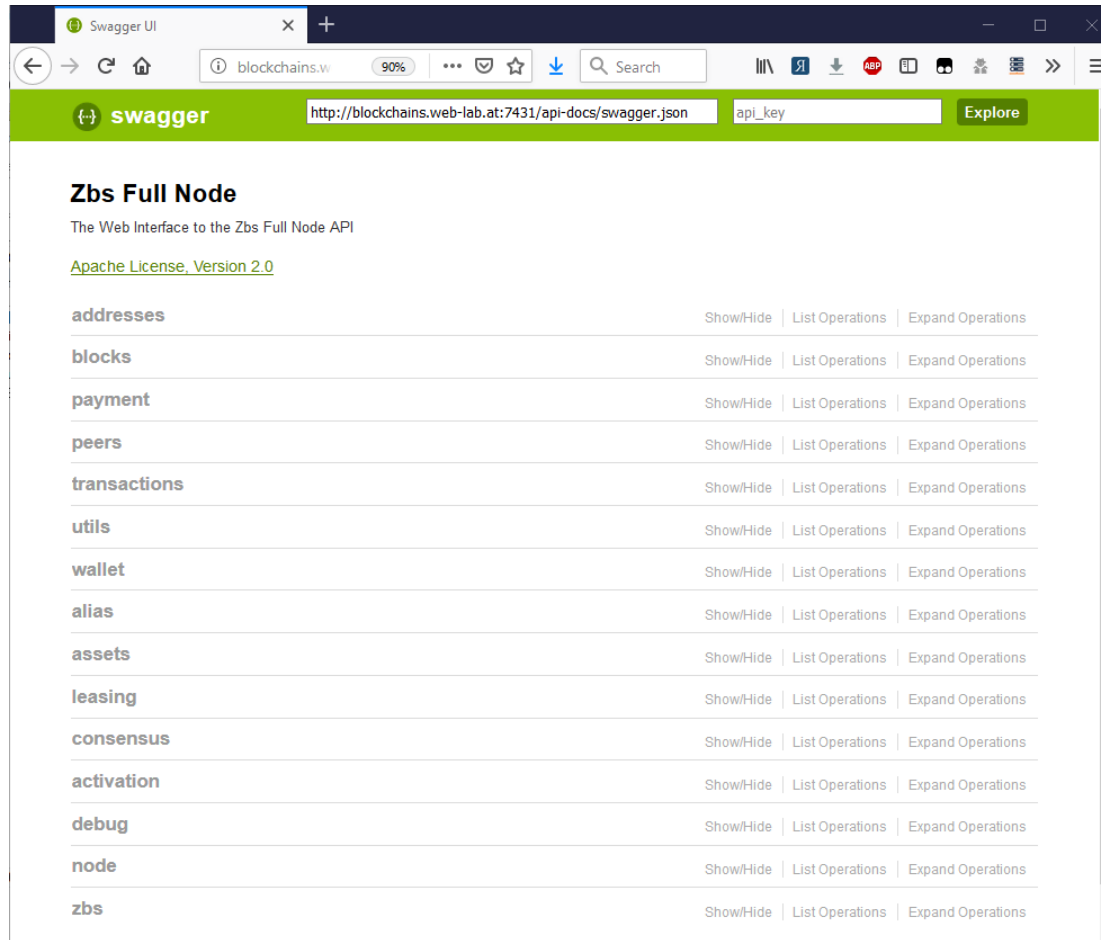
GAS LIMIT

Node	Client	Latency	Peers	Block	Hash	Age	Block Time	Uptime
act4energyT	Parity-Ethereum//v2.1.6-stable-491f17f-20181114/x86_64-linux-gnu/rustc1.30.1	4 ms	12	0	#638,736 0cc4c83f...658f9150	0	10 s ago	+345 ms 309 ms 100%
boernie	Parity-Ethereum//v2.1.6-stable-491f17f-20181114/x86_64-linux-gnu/rustc1.30.1	20 ms	13	0	#638,736 0cc4c83f...658f9150	0	10 s ago	+531 ms 271 ms 100%
didi	Parity-Ethereum//v2.1.10-stable-b47e064-20181213/x86_64-linux-gnu/rustc1.31.0	8 ms	13	0	#638,736 0cc4c83f...658f9150	0	10 s ago	+418 ms 202 ms 100%
tau1_austriapro	Parity-Ethereum//v2.1.6-stable-491f17f-20181114/x86_64-linux-gnu/rustc1.30.1	1 ms	13	0	#638,737 b4106842...c8784ecee	0	1 s ago	+52 ms 279 ms 100%
tau1_b10h	Parity-Ethereum//v2.1.6-stable-491f17f-20181114/x86_64-linux-gnu/rustc1.30.1	15 ms	13	0	#638,736 0cc4c83f...658f9150	0	10 s ago	+390 ms 381 ms 100%
tau1_bootnode_1		1 ms	13	0	#638,736 0cc4c83f...658f9150	0	10 s ago	+578 ms 1.3 s 100%
tau1_moc	Parity-Ethereum//v2.0.8-stable-ef8f95e-20181015/x86_64-linux-gnu/rustc1.29.0	1 ms	0	0	#638,736 0cc4c83f...658f9150	0	10 s ago	+163 ms 1.1 s 99%
tau1_validator_davidf	Parity-Ethereum//v2.1.6-stable-491f17f-20181114/x86_64-linux-gnu/rustc1.30.1	14 ms	13	0	#638,737 b4106842...c8784ecee	0	1 s ago	0 ms 264 ms 100%
tze42.tau1-1	Parity-Ethereum//v2.1.6-stable-491f17f-20181114/x86_64-linux-gnu/rustc1.30.1	14 ms	12	0	#638,736 0cc4c83f...658f9150	0	11 s ago	0 ms 402 ms 100%

Obsnetwork.com

- Details zum System siehe letzter AK
- Obs Fullnode im Testnetz
 - Incl. aktivem API
 - <http://blockchains.web-lab.at:7431>
- 2 Demos
 - Python: Infos zu einer Walletadresse und einem Asset
 - Php: Infos zu allen Assets einer Adresse
- Code auf Github
 - <https://github.com/austriapro/blockchain/tree/master/0bs-samples/>

Obs Fullnode mit API



The screenshot shows a web browser window displaying the Swagger UI for the Zbs Full Node API. The browser's address bar shows the URL `http://blockchains.web-lab.at:7431/api-docs/swagger.json`. The Swagger UI header includes the Swagger logo, the API name "swagger", the URL, and an "api_key" input field with an "Explore" button.

The main content area is titled "Zbs Full Node" and includes the subtitle "The Web Interface to the Zbs Full Node API" and a link to the "Apache License, Version 2.0". Below this, a list of API endpoints is displayed, each with a "Show/Hide", "List Operations", and "Expand Operations" link.

Endpoint	Show/Hide	List Operations	Expand Operations
addresses	Show/Hide	List Operations	Expand Operations
blocks	Show/Hide	List Operations	Expand Operations
payment	Show/Hide	List Operations	Expand Operations
peers	Show/Hide	List Operations	Expand Operations
transactions	Show/Hide	List Operations	Expand Operations
utils	Show/Hide	List Operations	Expand Operations
wallet	Show/Hide	List Operations	Expand Operations
alias	Show/Hide	List Operations	Expand Operations
assets	Show/Hide	List Operations	Expand Operations
leasing	Show/Hide	List Operations	Expand Operations
consensus	Show/Hide	List Operations	Expand Operations
activation	Show/Hide	List Operations	Expand Operations
debug	Show/Hide	List Operations	Expand Operations
node	Show/Hide	List Operations	Expand Operations
zbs	Show/Hide	List Operations	Expand Operations

Obs Demo (Python) Code

```
NODE = 'http://88.99.145.156:7431'
NETWORK = 'testnet'
ADDR = '3Mthq2HwiU4V2AqUmCsT9BV6UTB9MUJ5eU9'

pw.setNode(NODE, NETWORK)
ADDRESS = pw.Address(address=ADDR)

print('-----');
print("Demo getting infos about an address and an asset:")
print('-----');
print("Using the following address:")
print(ADDRESS.address)
print('-----');
print("Infos about address:")
print(ADDRESS)

print('-----');
balance = ADDRESS.balance()
print('Balance Obsnetwork Coin: %s' % (balance / 10000000))

AProV1_ID = 'FH6t21twyAwDeR7J2Ttp7zQEAq5rXBvyfWvK8QMvfRAZ'
balance = ADDRESS.balance(AProV1_ID)
print('Balance AustriaPro Token V1: %s' % (balance / 1000000))

AProV1 = pw.Asset(AProV1_ID)
print('-----');
print('Info about Asset:')
print(AProV1)
```

Obs Demo (Python) Output

```
chris@cb-pc5: /mnt/c/Users/baumann/Dropbox/dev7/0bsnetwork/python
chris@cb-pc5: /mnt/c/Users/baumann/Dropbox/dev7/0bsnetwork/python$ python apro-demo-address.py
-----
Demo getting infos about an address and an asset:
-----
Using the following address:
3Mthq2HwiU4V2AqUmCsT9BV6UTB9MUV5eU9
-----
Infos about address:
address = 3Mthq2HwiU4V2AqUmCsT9BV6UTB9MUV5eU9
publicKey =
privateKey =
seed =
nonce = 0
balances:
  Waves = 50000000000
  GavX8vzkqv7ew3J2V1PMC2TCzoGM2Lt7amms2G3NaMU2 (BATT1) = 1000
  FH6t21twyAwDeR7J2TTP7zQEaq5rXBvyfWvK8QMvfRAZ (AustriaPro V1) = 50000000
-----
Balance 0bsnetwork Coin: 500
Balance AustriaPro Token V1: 50
-----
Info about Asset:
status = Issued
assetId = FH6t21twyAwDeR7J2TTP7zQEaq5rXBvyfWvK8QMvfRAZ
issuer = 3MpZXYBKdsMKGWzNxmNSm27QPYHmev7jB5K
name = AustriaPro V1
description = AustriaPro Test Token V1
quantity = 100000000
decimals = 2
reissuable = True
chris@cb-pc5: /mnt/c/Users/baumann/Dropbox/dev7/0bsnetwork/python$
```

Startseite Lab

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

Phase 3: Multichain

Node AustriaPro Lab

- Web-GUI
- Proof Of Existence - Demo

Tools, Anleitungen

- Multichain **Node mit Docker** - **Anleitung** für Lab-Node "apro-lab-1" (NEU 2019/1)
- API Library für PHP (NEU 2019/1)

Demos

- Blockchain Demo - By Anders Brownworth - Erweiterung **Strukturierte Daten** (NEU 2019/1)
- Public/Private Keys & Signing - By Anders Brownworth

Phase 4

Obsnetwork Testnetz

- Web-Client (Wallet)
- Explorer (Blocks, Peers, Nodes, Faucet)

Obsnetwork Testnetz AustriaPro (NEU 2019/1)

- **Full Node** mit swagger (API Funktionen mit Web-GUI aufrufen) - (NEU 2019/1)
- **Demo Python** - Github (NEU 2019/1)
- **Demo PHP** - Github (NEU 2019/1)

CertiChain: Zertifikat als PDF

CertiChain Prototype - AUSTRIAPRO.at

Personenzertifikat gemäß EN ISO/IEC 17024

Aussteller

cert	ZS-A
name	Zertifizierungsstelle A
street	Teststrasse 4
postalCode	1230
city	Wien
web	https://zert-a.at



Person

certNo	Mag.
givenName	Karl
familyName	Gruber
certPost	MBA

Zertifikat

certID	ZS-A-5b8e32cd390
certType	B1001
certTitle	Qualitätsbeauftragte/r
issued	2018-09-04
validUntil	2020-08-20
remarks	Test



Zertifikat prüfen

Zur Prüfung wird die dem Zertifikat zugrunde liegende Blockchain-Transaktion in CertiChain gesucht.
Verwenden Sie dazu obigen QR-Code oder eine Prüfstelle aus der Liste unter <https://notarisierung.at>
Transaktions-ID: b6222d9d0fd5fc0009e920a1bb6aa00c12cb449802f4dda6b66a9e75025f

Dokument erstellt

Datum/Uhrzeit	2019-01-16T15:05:43+01:00
Zustand	...

Signator: Max Mustermann Abteilungsleiter
Datum: 17.09.2019 11:01
DIESES DOKUMENT IST DIGITAL SIGNIERT!
Prüfung der Signatur: https://www.handy-signatur.at



- Prüfung
 - Mehrere Prüfservices
- Digitale Signatur
 - optional
 - zusätzliche Qualität
 - wenn elektronisch, entsprechender Reader vorhanden und online

Blockchain Lab 2019

- Geplante Themen
 - Technologien
 - Neuigkeiten
 - „Labor“
 - zB. Size & Performance Untersuchungen
 - Vergleich der eingesetzten Technologien/Plattformen
 - Programmierung/Praxis
 - Mehr Demos, API Libraries ...
 - Thematisch
 - Notarisierung
 - Prototypische Anwendungen
 - CertiChain
 - ... ???
- Weiterer Input?

Kontakt

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