

BUILDING UPON THE BLOCKCHAINS

presented by



INTRODUCING THE NEUROWARE FOUNDERS



ONLY MSC BLOCKCHAIN COMPANY



SUPPORTED BY MDEC & MOF



Mark Smalley - CEO

Ruben Tan - CTO

Living in Malaysia for the past 20 Years

Building Web Applications for 10 Years

Building FinTech Applications for 15 Years

Active Community Evangelist & Presenter

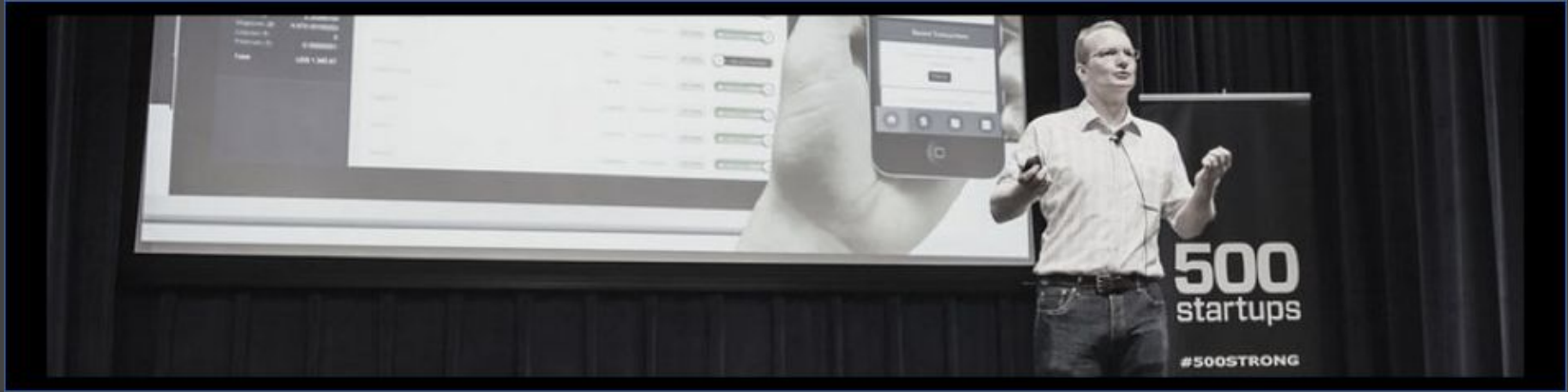
Spent 10 Years Building Tech Communities

Early Developer at MyTeksi and OnApp

Building Blockchain Apps for 5 Years

Studying Distributed Consensus for 5 Years

EXPERIENCED INNOVATORS IN AN EARLY ECOSYSTEM

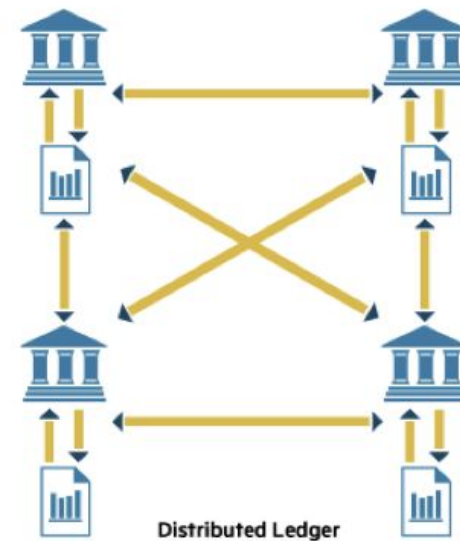
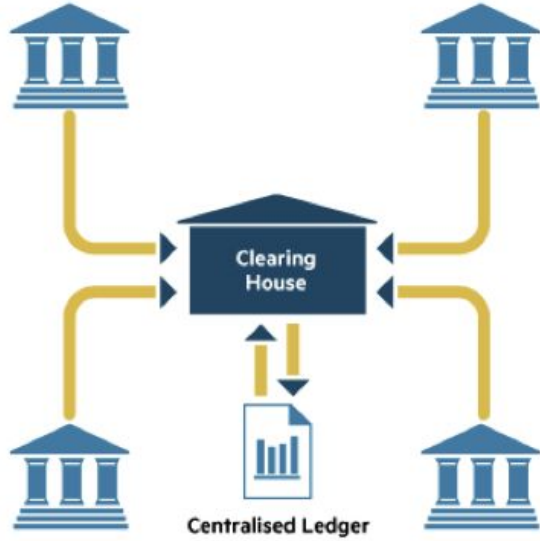


- **Only Malaysian Company** to Graduate from 500 Startups in Silicon Valley
- 1st Company in Asia Providing Public Blockchain APIs & Developer Toolkits
- 1st in The World to Develop Non-Financial Blockchain Agnostic Protocols
- Helped Organize World's 1st Bank-Backed Blockchain Hackathon (DBS)
- Over 15 Years of Collective Blockchain Development Experience

DISTRIBUTED LEDGERS Vs BLOCKCHAINS

PICKING THE CORRECT NETWORK

SANTANDER BANK - FIRST TO ADMIT US\$20B DLT ANNUAL SAVINGS



- Reconciling Multiple Central Ledgers Vs Auto-Audited Distributed Ledgers?
- Batch Processing CSVs every 24 Hours Vs Really Real-Time Settlement?

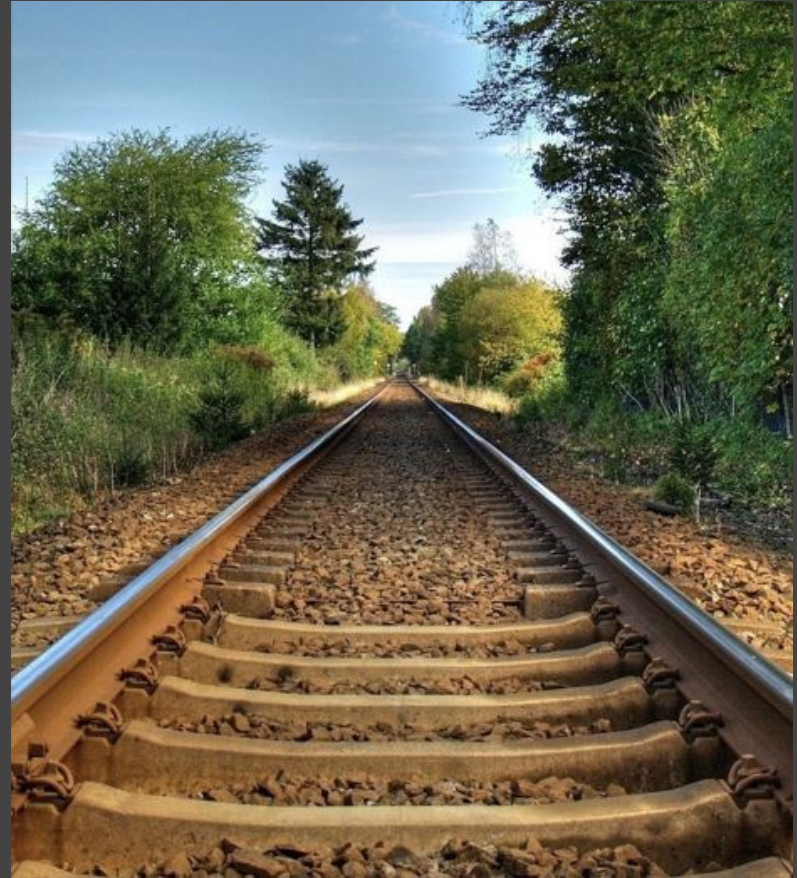
BITCOIN

(the first application / popular digital asset)

Vs

BLOCKCHAINS

(underlying tech / shared public ledger)



CONSENSUS - WHAT MAKES **PROOF OF WORK** SO SPECIAL ...?



THE MOST IMPORTANT OF ALL - THERE ARE NO COINS



ON THE BLOCKCHAINS EVERY ACCOUNT IS A SET OF KEYS



AND EACH “ADDRESS” REQUIRES A PRIVATE KEY TO ACCESS IT



SOME ADDRESSES EVEN REQUIRE MULTIPLE KEYS



WHOEVER HOLDS THE PRIVATE KEYS CONTROLS THE DATA



ONE PUBLIC KEY



MULTIPLY PRIVATE KEYS

- Example of a Bitcoin public address (derived from the public key):
`1GzBZ7eK6wzNjp1Wt6AxHo73kJL2tzoErq`
- Example of a Bitcoin private key (used to transfer funds from address):
`L1winVkoRmxMdHKbwssx33Z9ZEuXeJ1eP9CVYvnNn4TdYA32GsWY`
- Example of a Bitcoin extended private key (used by HD protocol):
`xprv9s21ZrQH143K2Ywhg9bhZ5nd31t3EbXsg8v28gkKjSm9PA3PiZ89dWW6YKxWZa2pgTuErQ65K46KGVfu1xCRBCK3Ppd465QGtH7TmxAEiLv`

COMPARING OUR 4 + (1 X 2) FAVOURITE PUBLIC BLOCKCHAINS

Data from CoinGecko on June 6th	Bitcoin	Litecoin	Dogecoin	Dash	Ethereum	ETC
Coin Limit	21 Million	84 Million	UNLIMITED	22 Million	Unknown	200+ Million
Current Supply	16 Million	51 Million	100 Billion	7 Million	91 Million	91 Million
Mining Algorithm	SHA-256	Script	Script	X11	Ethash	Ethash
Hash-Rate	644 PH/s	7.2 TH/s	6 TH/s	3.6 TH/s	30 TH/s	Unknown
Average Block Time	10 Minutes	2.5 Minutes	1 Minute	2.5 Minutes	10 Seconds	10 Seconds
Launched	03 / JAN / 09	07 / OCT / 11	08 / DEC / 13	19 / JAN / 14	30 / JUL / 15	25 / OCT / 16
US\$ Price per Coin	US\$2,800+	US\$30	US\$0.0038	US\$149	US\$260	US\$17
Current Market Cap	US\$47+ B	US\$1.5+ B	US\$420+ M	US\$1+ B	US\$24+ B	US\$1.6+ B
Size of Raw Blockchain	135 GB	8 GB	21 GB	3 GB	180 GB	120 GB
Hardware Cost of 51% Attack	US\$1.6+ B	US\$240+ M	US\$200+ M	US\$450+ M	Unknown	Unknown

GETTING STARTED

MAPPING USE CASES

CHOOSING THE CORRECT TECHNOLOGY AT THE CORRECT TIME

🎯 **SHORT TERM OBJECTIVES - PoC (Proof of Concept)**

- Ensure your foundations are blockchain neutral (frameworks, APIs or QTs?)
- Be confident with key management solutions (deterministic or hardware?)

🎯 **MEDIUM TERM OBJECTIVES - MVP (Minimal Viable Products)**

- Privately beta test product, generate marketing material and tracking tools
- Evaluate final scaling requirements for production ready public launch

🎯 **LONG TERM OBJECTIVES - Production Ready**

- Integrate with and (or) replace centralized data with new distributed networks
- Engage multiple external partners and (or) developer communities

BREAKING THINGS DOWN INTO SMALLER STEPS



DISTRIBUTED DATA

STEP 1

Use existing public blockchain technology to distribute structured data used through all future projects - from token variables to smart contract oracles



CUSTOMIZED TOKENS

STEP 2

Generate fixed, centrally or decentralized minted supplies of custom tokens to represent real-world assets and (or) incentivize new network needs



SMART CONTRACTS

STEP 3

Integrating smart contracts with legally binding real-world contracts requires multiple entities working together on neutral platforms and redefining regulation along the way

ORGANIZATIONS ARE NOW WORKING TOGETHER



BlockChain Embassy Asia

[AMBASSADORS](#)

[USE CASES](#)

[CONTACT EMBASSY](#)

[TOOLBOX](#)

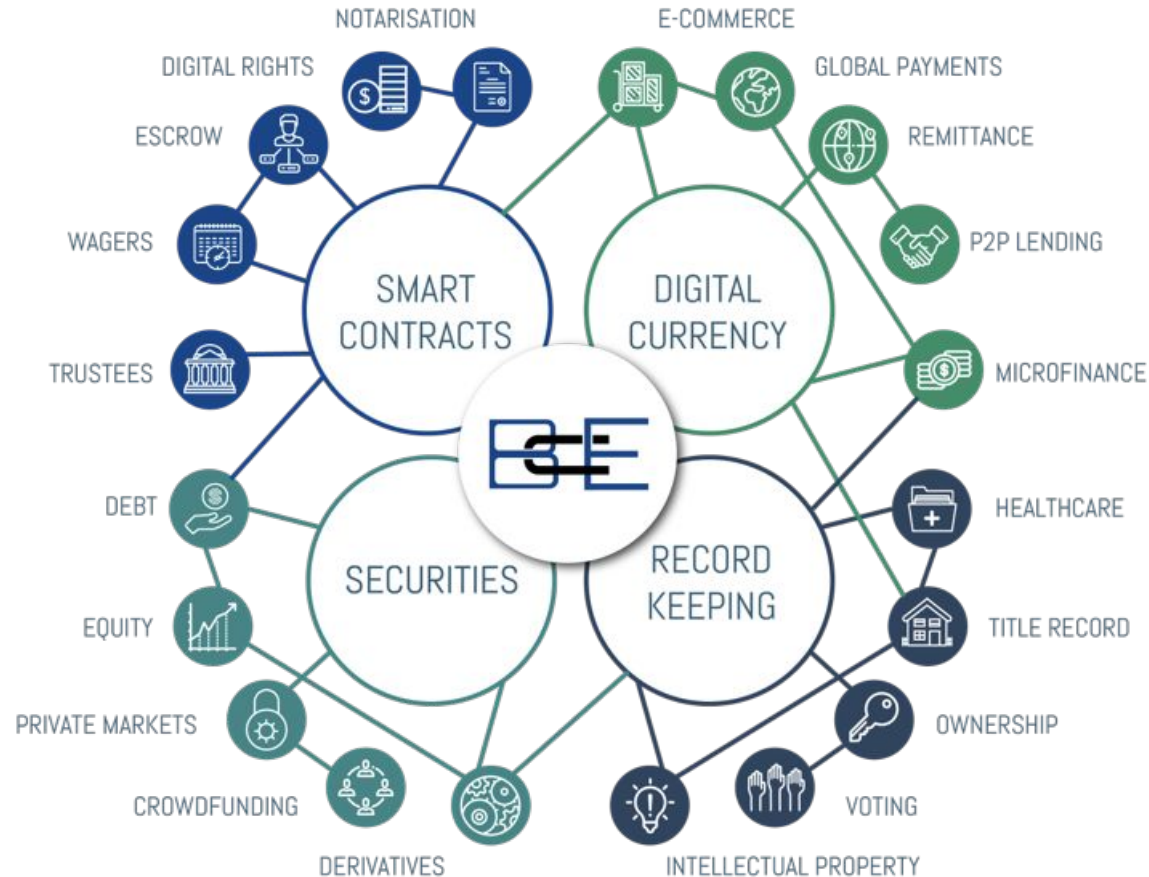
[NEWS](#)

**our mission is to educate organizations throughout asia in both
the legal and technical implications of distributed ledgers**

We are a non-profit digitally distributed organization that is using and promoting blockchain governance as a method for
collaboration between various business entities and existing community efforts across Asia

[REQUEST MEMBERSHIP](#)

BIG PROBLEMS INVOLVE MULTIPLE PARTNERS & MOVING PARTS



THE BLOCKCHAIN EMBASSY'S CHANCERY PROJECT



INCLUDES A DIGITAL BLOCKCHAIN-BASED PASSPORT



- Allows users to create and host their identity on the blockchains
- Uses endorsements and referrals to validate certain events occurred
- Allows users to login and sign-up for partnering services with 1 click

GETTING STARTED

TECHNICAL REQUIREMENTS

DEVELOPER TOOLS / APIs

[framework](#)[documentation](#)[source-code](#)[pro services](#)[widgets](#)

html5 framework for blockchain applications

[DOWNLOAD](#)

JQUERY PLUGIN / VERSION 0.8.0.1

[LIVE DEMO](#)

THE DEFAULT HTML WALLET



Chain Agnostic



API Neutral



Easily Extendable

KEY MANAGEMENT / WALLETS



Setup Wizard

(Here to help you get started)

[INSTALL GUIDE](#)[DOCS](#)

SALT GENERATION

Before we create any addresses we first need to establish a device salt. Each piece of information you enter is hashed and re-hashed before ever leaving the browser. We never see any of your details from the resulting hashes. At the end of the process a device salt is generated that we can use to more securely create new accounts.

Once entering these details you cannot change them later or recover them without recreating this process with the exact same data.

powered by [blockstrap.com](#)

[STEP 1: SALT GENERATION](#)[STEP 2: CREATE ACCOUNT](#)[HELP](#)

Generating Your Device Salt

This is a one time installation process. Please read the instructions carefully...

[RESET](#)[IMPORT](#)

Required Salt Components

Your Name

Using your actual name is easier to remember

Your Username

Pick a simple yet memorable username

Your Password

This cannot be changed later

Repeat

Confirm your password again

Password

Date of Birth

Day

Month

Year

City of Birth

It is easier to remember your real city of birth

Optional Security & Settings

App URL

<http://localhost/neuoware/blockstrap/framework/manual.htm>

Salt Component

-- Select Additional Salt Components --

API Service

Blockstrap

Profile Photo

[CHOOSE FILE](#)

Add Photo to Salt?

[SET](#)[NO](#)

Create custom question for salt?

[SET](#)[NO](#)[NEXT STEP](#)

NON-FINANCIAL **NEUTRAL** DISTRIBUTED PROTOCOLS

CORTEX

EVERSTORE

**DISTRIBUTED
STRUCTURED DATA**

 **blockauth**

**DECENTRALIZED ID &
AUTHENTICATION**

 **dnkey**

**KEY LOGISTICS &
BROADCASTING**

NEUROWARE'S AGNOSTIC PROTOCOLS - DESIGNED TO WORK WITH ANY BLOCKCHAIN

EVERSTORE - THE FIRST BLOCKCHAIN POWERED DATABASE

- Everstore is the first protocol capable of storing large amounts of structured data directly on a blockchain - bypassing singular transaction limitations
- Replicates full CRUD-like functionality with schemas, indexes & relationships
- Data encoded via an Everstore instance is available for the life of the ledger



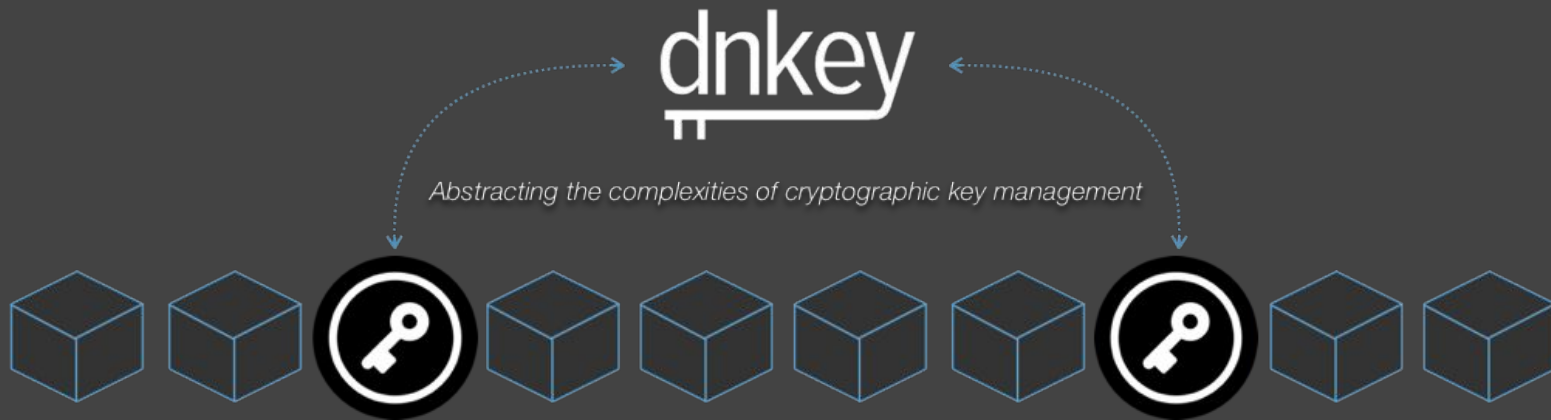
BLOCKAUTH - IDENTITY MANAGEMENT & AUTHENTICATION

- Enables intelligent account authentication via cryptographic keys
- Private keys replace passwords whilst the public keys becomes an identity
- Applications and organizations can independently authenticate credentials



SIMPLIFIED CRYPTOGRAPHIC IDENTITIES WITH DNKEY

- Scalable key logistics across multiple platforms, applications, and processes
- Enables DNS style abstraction for key retirement, replacement, and rotation
- Decodes memorable, trustworthy domain names to public cryptographic keys



CORTEX

GUIDED TOUR

CORTEX IS OUR BLOCKCHAIN-BASED OPERATING SYSTEM



CORTEX

LOG-IN TO ANY CORTEX INSTANCE BELOW
KEYS STORED LOCALLY WHILST LOGGED IN

LOGIN TO ANY CORTEX INSTANCE

Extended private key for edits

-- Select Blockchain --

-- Select API --


Optional API Key


SETUP


LOGIN


Cortex is maintained by [Neuroware](#)


WORKS WITH ANY BLOCKCHAIN - SUPPORTS 10 OUT OF THE BOX


CORTX


DASHBOARD


DOMAINS


USERS

DATABASES

API

EXPLORER

WALLET

SETTINGS

dashboard

add domain

add user

add database


add api key

help

credits : 11,000,000,000

flush

logout



Name

Mark Smalley

Title

Co-Founder & CEO

Company

Neuroware

YOUR PROFILE

EDIT

3 / 10

Domains

64 / 100

Sub-Domains

5 / 10

User Accounts

72 / 100

Databases

2 / 7


Active Modules

3 / 8

Active Protocols


CURRENT USAGE

REPORTS




Updated DNKey on mark.neuroware.io

12 seconds ago by Mark Smalley




Added new user johnny.neuroware.io

1 minute ago by Mark Smalley




New Everstore db at team.neuroware.io

3 minutes ago by Mark Smalley




New wallet for mark.neuroware.io

1 hour ago by Mark Smalley




Added new user johnny.neuroware.io

2 days ago by Mark Smalley



New Everstore db at team.neuroware.io

3 weeks ago by Mark Smalley




New DNKey on keys.neuroware.io


3 month ago by Mark Smalley


RECENT ACTIVITY


LOG


MANAGE DOMAIN NAMES FOR KEY ABSTRACTION SERVICES


CORTEX


DASHBOARD


DOMAINS


USERS

DATABASES

API

EXPLORER

WALLET

SETTINGS

domainsnew domainhelp

credits : 0.0000000flushlogout

You are currently logged-in with your private key!
Please remember to logout when you are done editing in order to remove the private key from localStorage.

2354d0cd9a748db9e9ebd4c00b5f3bb3504c9c516474bc2eec091b55d8c5adb1

EDITDELETESCHEMA

Key	Value
Index: Domain ID [md5]	e1f2e805608c5b56a2072e238e8b7523
Domain [string]	neuroware.io

2 of 2 : 2354d0cd9a748db9e9ebd4c00b5f3bb3504c9c516474bc2eec091b55d8c5adb1 (encoded 10 months ago)

Path	Value
[323335346, 430636439, 613734366, 462396539, 656264346, 330306235, 663362623, 335303463, 396335313, 634373462, 633265656, 330393162, 353564386, 335616462, 31, 2, 1]	MD5/e1f2e805608c5b56a2072e238e8b7523

1 of 2 : bcc354f809e475c535938cb270739e30def30b68c99341d4b9990e903c6936c8 (encoded 10 months ago)

Path	Value
[323335346, 430636439, 613734366, 462396539, 656264346, 330306235, 663362623, 335303463, 396335313, 634373462, 633265656, 330393162, 353564386, 335616462, 31, 2, 2]	neuroware.io


EDIT RECORD


MD5/e1f2e805608c5b56a2072e238e8b7523


neuroware.io


COMMIT CHANGE


CREATE, AUDIT AND MANAGE DISTRIBUTED USERS


CORTEX


DASHBOARD


DOMAINS


USERS

DATABASES

API

EXPLORER

WALLET

SETTINGS


usersnew userimport userhelp

credits : 0.00000000flushlogout

You are currently logged-in with your private key!
Please remember to logout when you are done editing in order to remove the private key from localStorage.

245a9ed7c9ed5f239b03df4a39a4a459bbe6c7d02f87b7b8e5b4c6c0b03d8426

EDITDELETESCHEMA

Key	Value
Index: User ID [md5]	e8612b6ec287b942b9421a464c13ac95
Email Address [email]	mark@smalley.my
Name [string]	 Mark Smalley
Title [string]	Co-Founder & CEO
Company [string]	Neuroware
Company URL [url]	http://neuroware.io

6 of 6 : 245a9ed7c9ed5f239b03df4a39a4a459bbe6c7d02f87b7b8e5b4c6c0b03d8426 (encoded 10 months ago)


Path	Value
[323435613, 965643763, 396564356, 632333962, 303364663, 461333961, 346134353, 962626536, 633764303, 266383762, 376238653, 562346336, 633062303, 364383432, 36, 3, 1]	MD5/e8612b6ec287b942b9421a464c13ac95


5 of 6 : 69b6bc991951cde99a8b28ca67ac9730d8c9d04a4d79d07a578b403e3b1fb (encoded 10 months ago)


EDIT RECORD


COMMIT CHANGE


CREATE AND MANAGE DISTRIBUTED BLOCKCHAIN DATABASES


CORTX


DASHBOARD


DOMAINS


USERS

DATABASES

API

EXPLORER

WALLET

SETTINGS

databasesnew databaseimport databasepublic data directoryhelp

credits : 11,000,0000flushlogout

You are currently logged-in with your private key!
Please remember to logout when you are done editing in order to remove the private key from localStorage.

sort by

Most Recent

search databases

af1850ac00bc1c42ef6bddc9c2fdaa0ab86e339d41786710acfbcf8c3cdf6097

OPEN

Key	Value
Index: ID [md5]	80c374f4d331e84b9618b8b68c4750ec
Name [string]	Cortex v0.0.1
URL [url]	http://localhost/neuroware/everstore/

2f9805d2f32853b9e47785225261d37f074d666fcc0f0c94c54cb9995fa4161f

OPEN

Key	Value
Index: ID [md5]	abd05c4ec8bf854d52292cff0de34e75
Name [string]	ATA-Plus v0.0.1
URL [url]	http://localhost/neuroware/everstore/?skin=ata&logout=true

ADD NEW RECORD


ID


Name


URL


COMMIT


CORTEX ALSO INCLUDES ITS OWN API AND DOCUMENTATION


CORTEX


DASHBOARD


DOMAINS


USERS

DATABASES

API

EXPLORER

WALLET

SETTINGS

api docsconsole

credits : 11,000,000,000flushlogout

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CortexJS

Raw API Requests

Everstore API

BlockAuth API

Search

SEARCH

api.blocks.latest(<chain>, <count>, <callback>)

This function calls upon `spinal.neuroware.io/<chain>/blocks/latest/<count>`

The `count` variable defines how many of the latest blocks to return.

The `callback` function is called upon completing the AJAX request.

```
api.blocks.latest('btc', 5, function(blocks) {
  console.log(blocks);
});
```

api.blocks.get(<chain>, <ids>, <callback>)


This function calls upon `spinal.neuroware.io/<chain>/block/id/<ids>`


The `ids` variable defines which blocks to return and can be a string or an array.


The `callback` function is called upon completing the AJAX request.


```
var block_ids = ['block_heights', 'and_block_hashes'];
api.blocks.get('btc', block_ids, function(blocks) {
  console.log(blocks);
});
```


AS WELL AS A IT'S OWN BUILT-IN BLOCK-EXPLORER


CORTX


DASHBOARD


DOMAINS


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API

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WALLET

SETTINGS

explorerhelp

credits : 11,000,0000flushlogout

You are currently logged-in with your private key!
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blockstransactionsaddresseesmarketsgraphs

SearchSEARCH

latest blocks

SEE ALL BLOCKS

Height	Age	Transactions	Size (KB)
403,716	12 seconds ago	783	399,714
403,716	12 seconds ago	783	399,714
403,716	12 seconds ago	783	399,714
403,716	12 seconds ago	783	399,714
403,716	12 seconds ago	783	399,714


latest transactions

SEE ALL TRANSACTIONS

Hash	Inputs	Outputs	BTC Value
30e34f2ba622b31ffa93b67f03d60208d8ce81033b797972b564b6aa9a5945b	7	2	0.000343518
30e34f2ba622b31ffa93b67f03d60208d8ce81033b797972b564b6aa9a5945b	7	2	0.000343518
30e34f2ba622b31ffa93b67f03d60208d8ce81033b797972b564b6aa9a5945b	7	2	0.000343518

Daily Transactions

Last 7 Days



Day	Transactions
Mon	1
Tue	3
Wed	2
Thu	4
Fri	7
Sat	2
Sun	6

currency calculator


US Dollar


BTC=US\$


market conditions


JSON FEED


WITH GRAPH QUERIES FOR ADVANCED ANALYTICS AND TRACING


CORTX


DASHBOARD


DOMAINS


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explorerhelp

credits : 11,000,000,000flushlogout

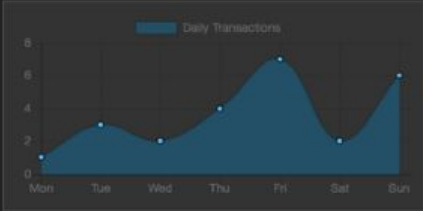
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blockstransactionsaddresseesmarketsgraphs

SearchSEARCH

Daily Transactions

Last 7 Days



Day	Daily Transactions
Mon	1
Tue	3
Wed	2
Thu	4
Fri	7
Sat	2
Sun	6


currency calculator

US Dollar


BTC=US\$


market conditionsJSON FEED


Statistic	Value
-----------	-------





NOT TO MENTION INTEGRATED MULTI-CURRENCY WALLETS


CORTEX


DASHBOARD


DOMAINS


USERS

DATABASES

API

EXPLORER

WALLET

SETTINGS

dashboardadd domainadd useradd databaseadd api keyhelp

credits : 10,000,000,000flushlogout

You are currently logged-in with your private key!
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DASHBOARDACCOUNTSCONTACTSENDHELP

Search your wallet

Recent Transactions


1.066 Bitcoin (Testnet) to My First Wallet	21 DAYS AGO
0.01066 Bitcoin (Testnet) from My First Wallet	22 DAYS AGO
0.001 Bitcoin from My First Wallet	22 DAYS AGO
0.1066 Bitcoin (Testnet) to My First Wallet	22 DAYS AGO
0.01 Bitcoin to My First Wallet	22 DAYS AGO
14 Dogecoin to My First Wallet	22 DAYS AGO
2 Dogecoin from My First Wallet	22 DAYS AGO


BTC > USD - Market Conditions


REFRESH


US\$ 677.06 BTC to USD	218,458 Daily TXs
1.4 Billion Daily US\$ Sent	2,056,343.22 Daily BTC Sent
15.7 Million BTC Discovered	10.7 Billion Market Cap US\$


ALSO ABLE TO CREATE AND MANAGE CUSTOM TOKENS


CORTX


DASHBOARD


DOMAINS


USERS

DATABASES

API

EXPLORER

WALLET

SETTINGS

walletnew walletimport wallethelp

credits : 11.00000000flushlogout

DASHBOARDACCOUNTSCONTACTSENDHELPTOKENS




Search your wallet

Your Tokens & Contracts





These are your Ethereum based token contracts and public account credentials.

CREATE TOKENSWATCH TOKENSCREATE ACCOUNT

Track existing custom tokens, create and manage token accounts - and even generate new custom token eco-systems from scratch.


Token Name	Contract Address	Decimals	Symbol	Total Supply	Actions
Neuroware Sdn Bhd	0x4AE75feE889d57d3229817565032b1428CB9b673	2	%	100.00 %	  


10 records per pageShowing 1 to 1 of 1 entriesPrevious1Next


Account Name	Address	Tokens	TXs	Balances	Actions
My First Wallet	7c7eb521767063e5f73059dbd106a77b67318bec	Ethereum	1	1.066 ETH	   
		Neuroware Sdn Bhd	0	0.01 %	


10 records per pageShowing 1 to 1 of 1 entriesPrevious1Next


WITH OPTIONAL MULTI-SIGNATURE ESCROW CONTRACTS


CORTEX


DASHBOARD


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walletnew walletimport wallethelp

credits : 11.00000000flushlogout

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DASHBOARDACCOUNTSCONTACTSENDHELPTOKENS

Search your wallet

Your Accounts

These are all the different accounts you have in different blockchains. More advanced filtering coming soon!

EXCHANGE COINSADD NEW ACCOUNT

You are currently communicating with the blockchains via BlockCypher and have 1 account and 1 contact stored on this device


Account	Blockchains	Current Addresses	Balances	Actions
My First Wallet	+ ADD CHAIN		Total: US\$ 5.16	🔍 🔄 REMOVE ALL
+ ADD CONTRACT	Bitcoin (Testnet)	n2C6A7MCduFwK8GsSHfIS74Y15dOvu78YI	0.00000000	🔍 🔄 ✉ 🔄 ✕
+ ADD CONTRACT	Bitcoin	1JCGyGLHsRrNy6tUMTx9NLMNhVc9jmD5xv	0.00890000	🔍 🔄 ✉ 🔄 ✕
+ ADD CONTRACT	Dogecoin	DDkUM427ZNPXsKiS63pw1HDk32bybXshJT	9.98765433	🔍 🔄 ✉ 🔄 ✕
	Dogecoin (2 of 3)	A3VIEyhRcXdPJRkp1BAR2d4pLRdaLJG3Ma	5.00000000	


10 records per page


Showing 1 to 1 of 1 entries


Previous1Next


CAN BE EASILY EXTENDED WITH THEMES AND PLUGINS


CORTEX


DASHBOARD


DOMAINS


USERS

DATABASES

API

EXPLORER

WALLET

SETTINGS

settingsexportimportresethelp

credits: 0.00000000flushlogout

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Dogecoin (Testnet) Blockchain / Cortex V0.0.1 / Schema / Explore

credits: 0.00000000FLUSHLOGOUT

COMMITTS

DATASTORES

SCHEMA

EXPLORE

EMBED

DOCUMENTATION

sort byOrder

search schema

Datastore: Databases [data]

EDITDELETE

The Databases datastore is public and currently contains the following 3 fields

Field: ID (datastore Index)

EDIT

Key	ID
Type	md5
Properties	public

Field: Name

EDITDELETE

Key	Name
Type	string
Properties	public

ADD NEW DATASTORE

name of datastore

select naming type

DEFINE DATASTORE INDEX

Index Label

select index type

select index properties

OPTIONAL DATASTORE FIELDS

Label for Field 2

select field type

select field properties

Powered by Neuroware



THANK YOU FOR YOUR TIME

please email us for more information - founders@neuroware.io