



Community Inclusion Currency (CIC)

Tech Brief

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<http://grassecon.org>



Grassroots
Economics

<https://gitlab.com/grassrootseconomics>





Community (A) creates a CIC as a voucher for their own goods and services **1a**



Communities can add their CICs to a Common Pool to exchange **3**



Community (B) Creates a CIC **1b**



Local Projects and Trade **2**



Community (C) Creates a CIC **1c**

COMMUNITY INCLUSION CURRENCIES DASHBOARD



Jan 2020 - Dec 2020 Standard

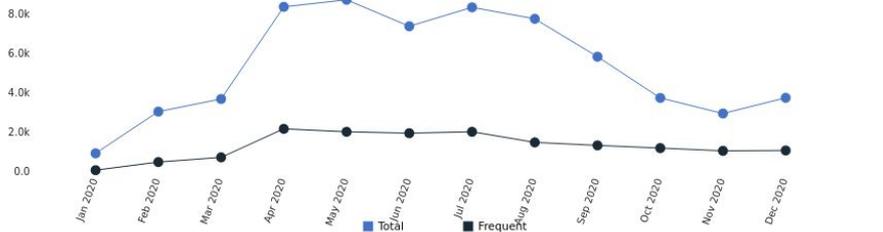
USERS

Registered Users 41.7k (total) ▲365% 33.9k (new) ▼61%	Traders 30.7k (total) ▲314% 1.04k (frequent) ▲2.58k%	Supply & Reserve 16.0M (supply in circulation) 1.98M (reserve)	Exchange & Price 1.00 (KES)
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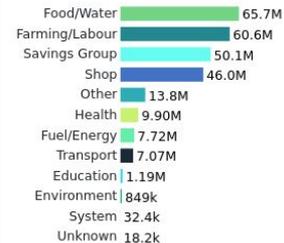
TRADES

Standard 263M (KES) ▲8.00k% 334k TXs ▲1.15k%	Disbursement 33.6M (KES) ▼63% 223k TXs ▲282%	Agent Out 6.17M (KES) ▼100% 269 TXs ▼100%	Reclamation 15.6M (KES) ▼100% 64.0k TXs ▼86%
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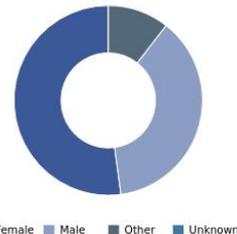
TRADERS



TRADE VOLUMES BY SPEND TYPE



TRADE VOLUMES BY GENDER

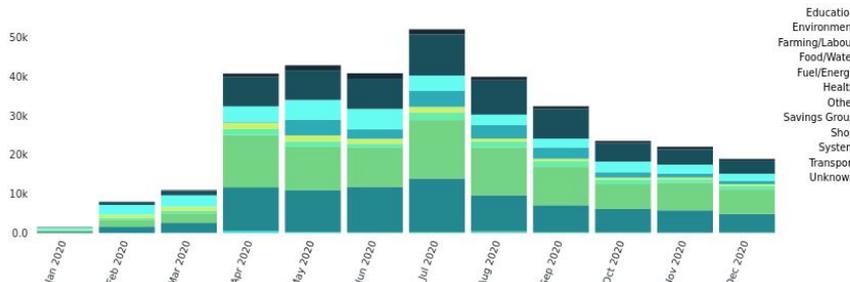


TOP TRADERS

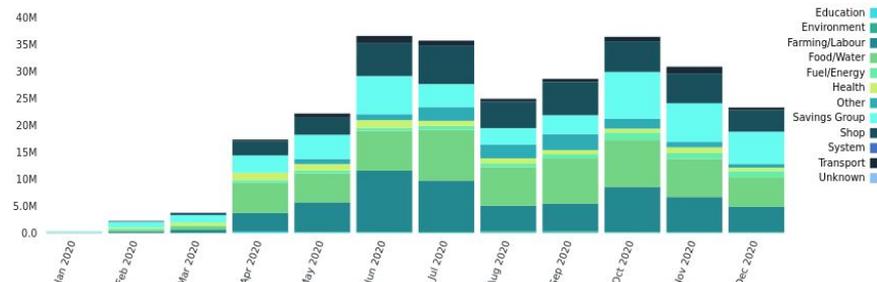
No	BusinessType	Gender	Volume	TXs
1	Farming/Labour	F	4.13M	1.15k
2	Farming/Labour	M	2.61M	585
3	Savings Group	F	2.52M	438
4	Farming/Labour	F	2.28M	729
5	Savings Group	M	2.11M	219
6	Savings Group	F	1.91M	245
7	Shop	M	1.84M	330
8	Savings Group	Other	1.66M	217
9	Farming/Labour	M	1.64M	445
10	Farming/Labour	M	1.60M	360

Spend Types Transactions Gender

NO OF TRANSACTIONS



TRADE VOLUMES



Overview - Guiding principles

- **Open Source** All code released
 - under GPL 3.0
- **Distributed Availability** regardless of
 - involved entities
- **Public** Anyone can add
 - resources to the network
- **Pluggable Implementers** can replace
 - and recombine components
- **Edgy Leave processing** and
 - sense-making to the client
- **Independent** Most code from scratch
 - Utility rather than platform

Grassroots Economics

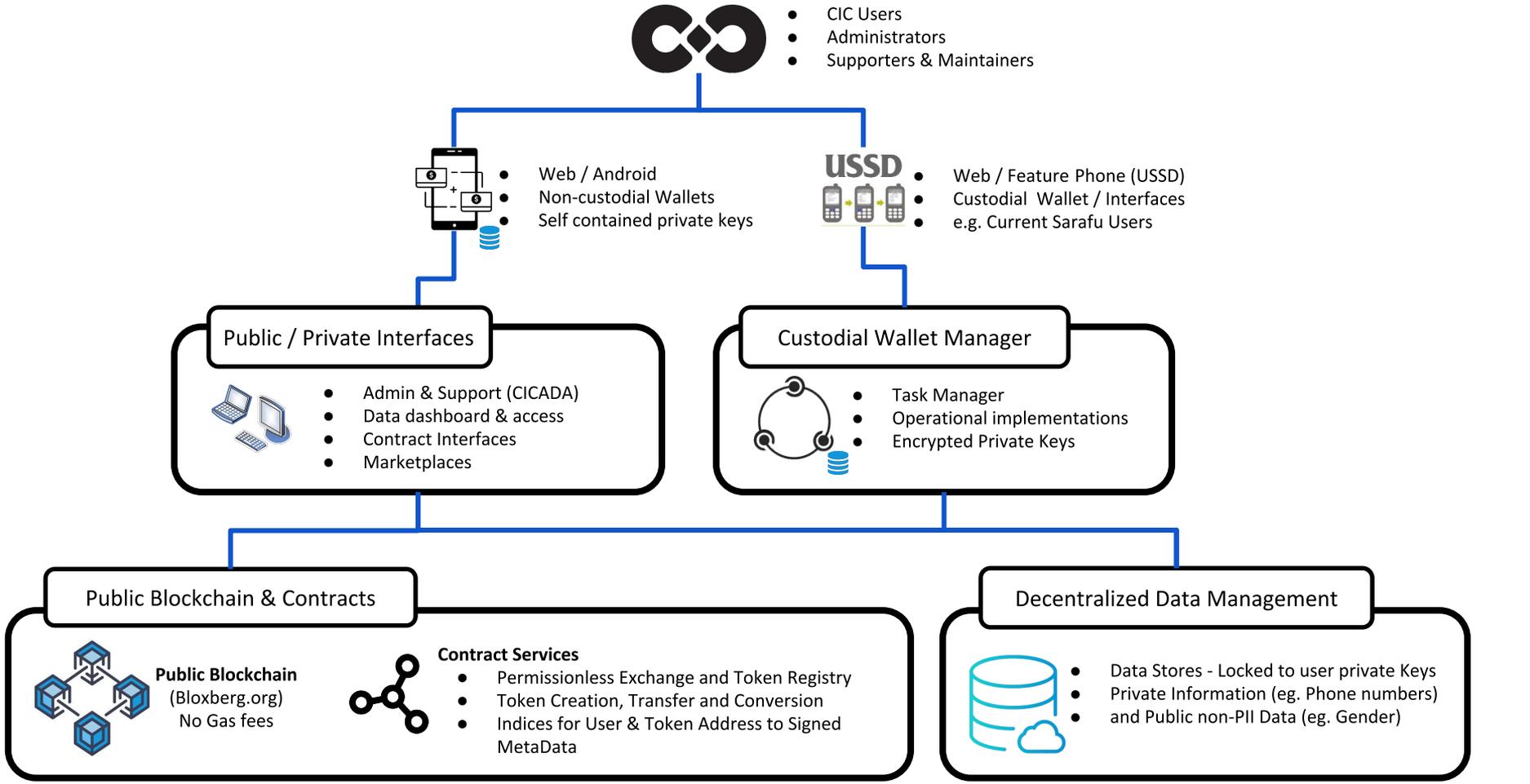


Grassroots Economics 
Group ID: 7914527

Grassroots Economics is a non-profit foundation based in Kenya that seeks to empower communities to build resilient economies.

Subgroups and projects Shared projects Archived projects Name 

  Bancor contracts 	Clone of https://github.com/bancorprotocol/contracts-solidity	★ 0	4 months ago
  BloxbergValidatorSetup 		★ 0	2 days ago
  CIC Auth 	Authentication module for all cic components	★ 0	3 months ago
  CIC Auth Proxy 	Simple reverse proxy layer implementing cic-auth for non-python backends	★ 0	1 month ago
  CIC Bonding-Curve Demo 	This is a web based, interactive demonstration of bonding curve built using React ...	★ 0	6 months ago
  CIC Cache 	Cache engine and API provisions for human interfaces	★ 0	1 month ago
  CIC CLI JS 	Includes the JS implementation of CIC CLI scripts	★ 0	2 months ago
  CIC Config 	Common configuration files across CIC components	★ 0	2 months ago
  CIC Docs 	Community Inclusion Currencies (CICs) are blockchain based tokens which can be i...	★ 2	3 weeks ago
  CIC ETH 	Suite of daemons and tools to monitor and index CIC blockchain events	★ 0	3 months ago
  CIC JS 	Typescript libraries for building CIC client applications	★ 0	2 months ago



Overview - Other key features

- Trust
 - Everyone builds trust and decide who to trust
- Cross-chain
 - Interoperability between consensus engines
- CRDT
 - Local-first metadata disseminated between peers
- P2P
 - Applications give each other news about the network

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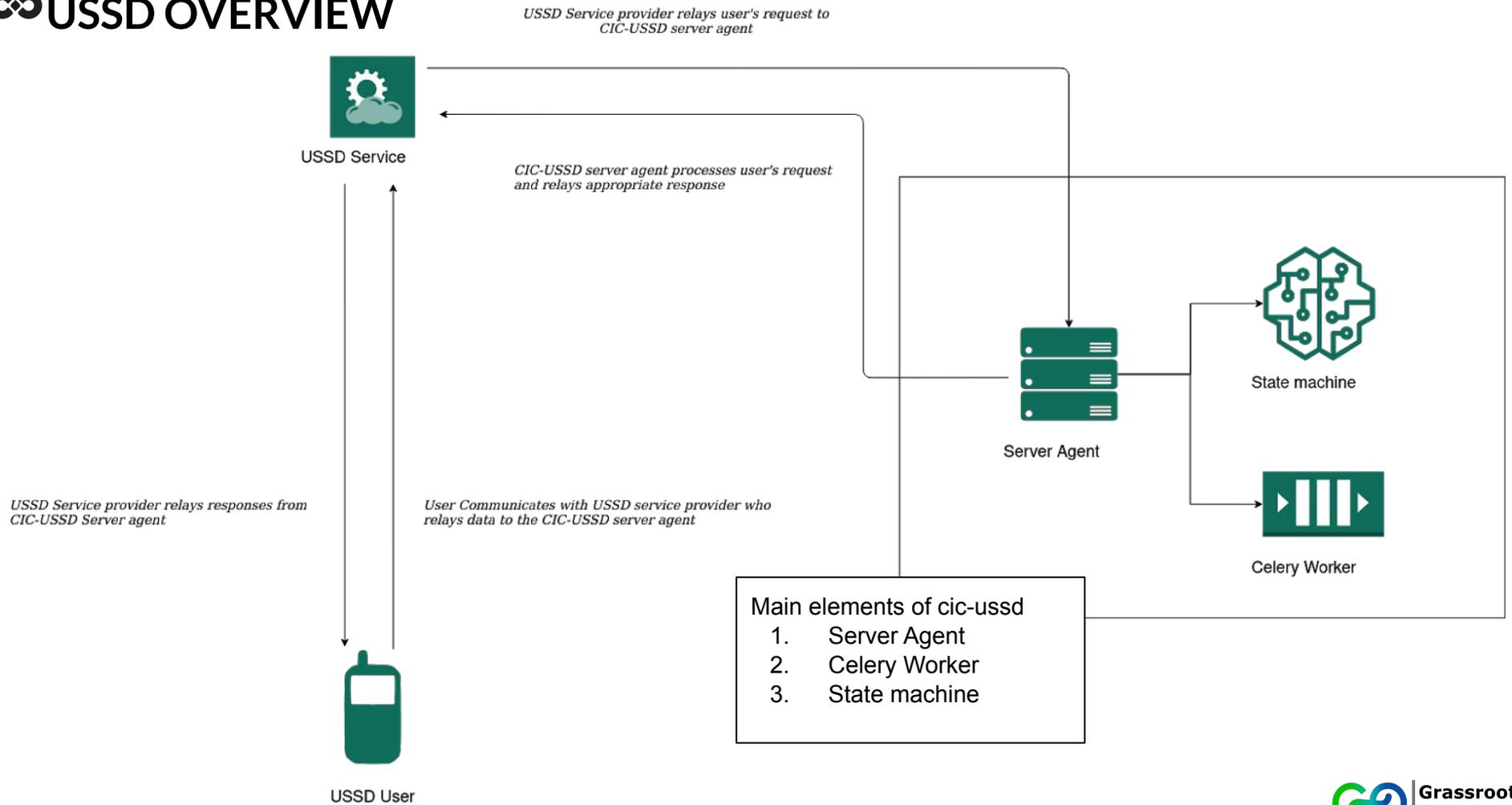
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cic_eth/api/api_task.py · la x +
< > C B https://gitlab.com/grassrootseconomics/cic-... | 🔒 🔔 🔍 🌟 ⚙️ 🏠 🌐 🌐 🌐
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Projects More + 🔍 📄 41 📄 8 📄 26 🌐
api_task.py 12.7 KB
Edit Web IDE Lock Replace Delete 🔒 📄 📄 📄
1 """API for cic-eth celery tasks
2
3 .. moduleauthor:: Louis Holbrook <dev@holbrook.no>
4
5 """
6 # standard imports
7 import logging
8
9 # third-party imports
10 import celery
11 from cic_registry.chain import ChainSpec
12 from cic_registry import CICRegistry
13 from cic_eth.eth.factory import TxFactory
14
15 app = celery.current_app
16
17 logg = logging.getLogger(__name__)
18
19
20 class Api:
21     """Creates task chains to perform well-known CIC operations.
22
23     Each method that sends tasks returns details about the root task.
24
25     :param callback_param: URL to HTTP POST result data, optional
26     :type callback_param: str
27     :param callback_task: Callback task that executes callback_param
28     :type callback_task: string
29     :param queue: Name of worker queue to submit tasks to
30     :type queue: str
31     """
32     def __init__(self, chain_str, queue='cic-eth', callback_param=None):
33         self.chain_str = chain_str
34         self.chain_spec = ChainSpec.from_chain_str(chain_str)
35         self.callback_param = callback_param
36         self.callback_task = callback_task
37         self.queue = queue
38         logg.info('api using queue {}'.format(self.queue))
39         self.callback_success = None
40         self.callback_error = None
41         if callback_queue == None:
42             callback_queue=self.queue
```

```
Registry.sol · master · Grassroots Economics / cic-contracts · GitLab - Brave
< > C B https://gitlab.com/grassrootseconomics/cic-... | 🔒 🔔 🔍 🌟 ⚙️ 🏠 🌐 🌐 🌐
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Projects Groups Snippets Help 🔍 Sign in / Register
Grassroots Economics > cic-contracts > Repository
master cic-contracts Find file Blame History Permalink
/ Registry.sol
Add token registry
Louis Holbrook authored 1 week ago a461f9fc 🔒
Registry.sol 743 Bytes Edit Web IDE 🔒 📄 📄 📄
1 pragma solidity >=0.6.12;
2
3 // Author: Louis Holbrook <dev@holbrook.no> 0826EDA1702D1E87C6
4 // SPDX-License-Identifier: GPL-3.0-or-later
5 // File-version: 1
6
7
8 interface Registry {
9     function owner() external view returns (address);
10    function identifiers() external view returns (bytes32[] mem
11    function chainOf(bytes32 _identifier) external view returns
12    function configSumOf(bytes32 _chain) external view returns
13    function set(bytes32 _identifier, address _address, bytes3
14    function seal() external returns (bool);
15    // TODO: extend RegistryClient, but flatten files
16    function addressOf(bytes32) external view returns (address)
17 }
```

```
AddressDeclarator.sol · master · Grassroots Economics / cic-contracts · GitLab - Brave
< > C B https://gitlab.com/grassrootseconomics/cic-... | 🔒 🔔 🔍 🌟 ⚙️ 🏠 🌐 🌐 🌐
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Projects Groups Snippets Help 🔍 Sign in / Register
Grassroots Economics > cic-contracts > Repository
master cic-contracts Find file Blame History Permalink
/ AddressDeclarator.sol
Add token registry
Louis Holbrook authored 1 week ago a461f9fc 🔒
AddressDeclarator.sol 934 Bytes Edit Web IDE 🔒 📄 📄 📄
1 pragma solidity >=0.6.12;
2
3 // Author: Louis Holbrook <dev@holbrook.no> 0826EDA1702D1E87C6
4 // SPDX-License-Identifier: GPL-3.0-or-later
5 // File-version: 1
6 // Description: The ERC20 standard interface as specified in EIP20
7
8 interface AddressDeclarator {
9     function addDeclaration(address _address, bytes32 _proof) e
10    function declaratorCount(address _objectAddress) external v
11    function declaratorAddressAt(address _targetAddress, uint25
12    function declaration(address _subjectAddress, address _obje
13    function declarationCount(address _subjectAddress) external
14    function declarationAddressAt(address _subjectAddress, uint
15 }
```



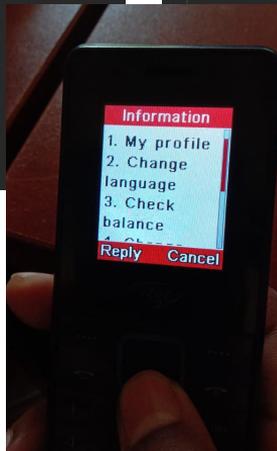
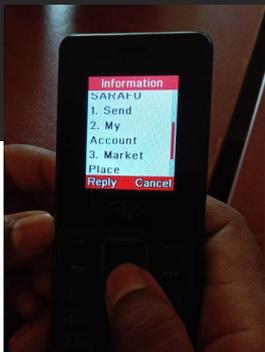
USSD OVERVIEW



THE USSD MENU

- 1 CON Balance
- 2 1. Send
- 3 2. My Account
- 4 3. Help
- 5

- 1 CON My account
- 2 1. My profile
- 3 2. Change language
- 4 3. Check balance
- 5 4. Change PIN
- 6 0. Back
- 7



Field Demo

[https://youtu.be/
UqobcADSUTQ](https://youtu.be/UqobcADSUTQ)

USSD: KEY FUNCTIONALITIES

Some of the notable capabilities

of the application:

- Callback Handling
- Event notification
- Optimizations

Grassroots Economics > CIC USSD

CIC USSD Project ID: 19870659

🔔 0 | ⭐ Star 2 | 🍴 Fork 1

↔ 235 Commits | 🌿 8 Branches | 🏷️ 0 Tags | 📄 1.5 MB Files | 💾 9.9 MB Storage

Standalone USSD cic-platform client service

master | cic-ussd / + | History | Find file | Web IDE | Download | Upload | Clone

Merge branch 'philip/versioning' into 'master' 6143f7fa
Philip Wafula authored 2 days ago

GNU GPLv3 | CI/CD configuration | Add README | Add CHANGELOG | Add CONTRIBUTING

Add Kubernetes cluster

Name	Last commit	Last update
.config	Philip/cic eth create user	4 days ago
cic_ussd	Philip/cic eth create user	4 days ago
doc	Philip/uml files	3 months ago
docker	Adds permission fix	3 weeks ago
emulator/browser	USSD browser emulator	2 months ago
scripts	Adds hashbang to instruct python on how to run script.	3 weeks ago
states	Philip/pre docker cleanup	3 weeks ago
test	Philip/cic eth create user	4 days ago
transitions	Philip/pre docker cleanup	3 weeks ago



CIC ADMIN DASHBOARD (CICADA)

Administration web app that enables the staff or humanitarian teams to interact with the user activity and provide user support to users experiencing issues.



COMPONENTS: DASHBOARD

Dashboard - Data visualization that provides information coming directly from the blockchain network.



- Dashboard
- Accounts
- Transactions
- Tokens
- Settings
- Admin



COMPONENTS: ACCOUNTS

Accounts - Viewing and management of all user accounts on the network. Provide assistance to users on the setup of their accounts and profile information.

The screenshot shows a web application interface for managing accounts. On the left is a dark sidebar with a logo and navigation menu: Dashboard, Accounts (selected), Transactions, CD Tokens, Settings, and Admin. The main content area is titled 'Accounts' and includes a search bar, a filter dropdown set to 'ALL', and '+ ADD NEW' and 'EXPORT' buttons. Below is a table of accounts with columns for Name, Phone Number, Created, Balance, Type, Status, Location, and Failed Pin Attempts. The table contains five rows of data. At the bottom right of the table area, it says 'Items per page: 10' and '1 - 5 of 5'. A footer at the bottom center reads '© 2020 Grassroots Economics'.

NAME	PHONE NUMBER	CREATED ↓	BALANCE	TYPE	STATUS	LOCATION	FAILED PIN ATTEMPTS	
Mc Donald	+25498765432	11/16/2020	450	group	Unapproved	Myari	2	<input type="checkbox"/>
Silver Fox	+25442518374	10/10/2020	817	tokensAgent	Unapproved	Mkariyeni	0	<input type="checkbox"/>
John Doe	+25412345678	08/16/2020	12987	user	Approved	Bofu	1	<input type="checkbox"/>
Hera Cles	+25498769876	05/28/2020	5621	user	Approved	Kayaba	3	<input type="checkbox"/>
Jane Buck	+25412341234	04/02/2020	56281	vendor	Approved	Lindi	0	<input type="checkbox"/>

The screenshot shows the 'Details' page for the account 'Mc Donald'. The sidebar is the same as in the previous screenshot. The main content area is titled 'Mc Donald' and shows account details: Balance: 450 RCI, Created: 11/16/2020, Address: 0xc8f1f93ac40d3950b45f9469b83725820a9166. Below this is a 'DETAILS' section with a 'NEW TRANSFER' and 'SAVE' button. The details form includes: STATUS (Unapproved), ACCOUNT TYPE (GROUP/ACCOUNT), Bio (Food), User Location, Name (Mc Donald), USER TOKEN (RESERVE), GENDER (MALE), LOCATION (Myari), Phone Number (+25498765432), Failed Pin Attempts (2), Business Category (Food/Water), and Admin (Hera Cles). There are buttons for 'Add User KYC', 'Reset Pin', and 'Delete User'. At the bottom is a 'USER' table with columns for Name, Account Type, Created, and Status, showing one user entry.

NAME	ACCOUNT TYPE	CREATED	STATUS
Mc Donald	group	11/16/2020	Unapproved
1 user			



COMPONENTS: TRANSACTIONS

Transactions - Keeps track of all transactions occurring in the network.

Home / Transactions

Transfers

TRANSFER TYPE: ALL TRANSFERS

Filter

View	Sender	Sender Location	Recipient	Recipient Location	Token	Value	Created	TYPE	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.00000666	Jan 19, 1970	Transaction	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.00009817	Jan 19, 1970	Transaction	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.00001153	Jan 19, 1970	Transaction	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.00005537	Jan 19, 1970	Transaction	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.000009581	Jan 19, 1970	Transaction	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.000003725	Jan 19, 1970	Transaction	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.000008059	Jan 19, 1970	Transaction	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.000007502	Jan 19, 1970	Transaction	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.00000971	Jan 19, 1970	Transaction	
*	Miyani	Kayaba	Bert Token	Kayaba	Bert Token	0.000002928	Jan 19, 1970	Transaction	

Items per page: 10 | 1 - 10 of 24

Home / Transactions

Transfers

TRANSACTION DETAILS

Exchange:

Transaction: Block: 69
Index: 0

Sender: dnc14958CD9A605AB0F9A3885036Aa02b9D4DF97
Sender Address: dnc14958CD9A605AB0F9A3885036Aa02b9D4DF97
[View Sender](#)

Recipient: 0x5c3c2b8f7763d65a2c2061d4f0a3f8f810e9
Recipient Address: 0x5c3c2b8f7763d65a2c2061d4f0a3f8f810e9
[View Recipient](#)

Amount: BRT 666000000000

Token: Address: 0x528c3E8B3e6dC646530440D88F83baDe45daC25b
Name: Bert Token
Symbol: BRT

Transaction: Hash: 0x664c48a27f4603c16ec0209e1c0b4d0e54c529f121c2b0d6f8b6f9e3b5
Success: true
Timestamp: Jan 19, 1970

[Record SMS](#)
[Reverse Transaction](#)

TRANSFER TYPE: ALL TRANSFERS



COMPONENTS: TOKENS

Tokens - Viewing of information on all tokens in the network.

Home / Tokens

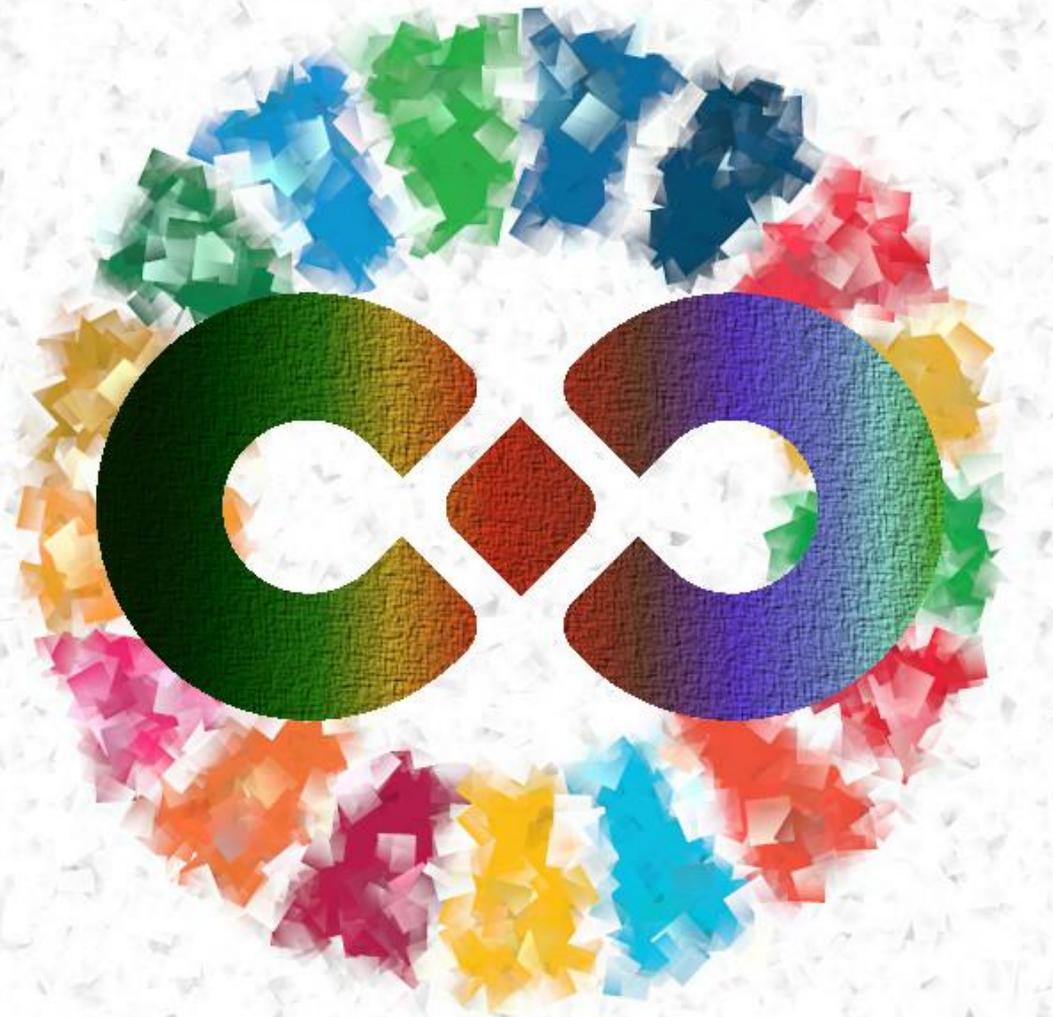
Tokens

Filter

Name	Symbol	Address	Supply
Giftable Reserve	GRZ	0xa686005CE37Dce7738436256982C3903f2E4ea8E	1000000001.0000001
Demo Token	DEMO	0xc80D6aFF8194114c52AEcD84c9f15fd5c8abb187	100
Foo Token	FOO	0x9ceD86089f7aBB5A97B40eb0E7521e7aa308d354	1000
testb	tstb	0xC63cFA91A3BF41cE31F1436f67D3ACBC977DB95	9.9e-14
testa	tsta	0x8fA4101ef19D0a078239d035659e92b278bD083C	9.981e-15

Items per page: 5 1 - 5 of 6 |< < > >|

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Thank you!



<http://grassecon.org>



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