Creating truly decentralized browser applications
Aragon is a project to empower freedom by creating tools for decentralized governance.
### Past votes

**#9 Token Manager (decentralizenow): Mint 1 tokens for 0xB0e4...6ae9**

- **Yes**: 33.33%
- **No** (Your Vote): 66.67%

- **Result**: Rejected

**#7 Token Manager (decentralizenow): Mint 1 tokens for 0xB0e4...6ae9**

- **Yes**: 100%
- **No**: 0%

- **Result**: Executed

**#6 ACL: Sets 0xb412...6e7 as the manager of the permission...**

- **Yes**: 100%
- **No**: 0%

- **Result**: Executed

**#8 Token Manager (decentralizenow): Mint 1 tokens for 0xB0e4...6ae9**

- **Yes**: 50%
- **No**: 0%

- **Result**: Executed
## Token Balances

<table>
<thead>
<tr>
<th>Token</th>
<th>Amount</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCC</td>
<td>26</td>
<td>$340,358.69</td>
</tr>
<tr>
<td>ETH</td>
<td>3.14</td>
<td>$1,823.28</td>
</tr>
<tr>
<td>ZRX</td>
<td>453</td>
<td>$584.37</td>
</tr>
<tr>
<td>DNT</td>
<td>137</td>
<td>$8.87</td>
</tr>
<tr>
<td>ANT</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>MANA</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>SPANK</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>SNT</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>MKR</td>
<td>0</td>
<td>$0</td>
</tr>
</tbody>
</table>

## Transfers

<table>
<thead>
<tr>
<th>Date</th>
<th>Source / Recipient</th>
<th>Reference</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>13/04/18</td>
<td>0x61d463f2613f04053bc875c72a9da22348da2eb5</td>
<td>Food aid</td>
<td>-753 BCC</td>
</tr>
<tr>
<td>13/04/18</td>
<td>0x39a4d265db942361d92e28b0039ca73ea72a2ff9</td>
<td>Requested airdrop (test tokens)</td>
<td>+453 ZRX</td>
</tr>
<tr>
<td>13/04/18</td>
<td>0x7208b0d48de808db0f4050083b09205f6d29</td>
<td>Ether transfer to Finance app</td>
<td>+3.14152 ETH</td>
</tr>
<tr>
<td>13/04/18</td>
<td>0x39a4d265db942361d92e28b0039ca73ea72a2ff9</td>
<td>Requested airdrop (test tokens)</td>
<td>+137 DNT</td>
</tr>
</tbody>
</table>
pragma solidity 0.4.24;

contract Counter {
    // Events
    event Increment(address entity);
    event Decrement(address entity);

    // State
    int public value;

    function increment() external {
        value += 1;
        Increment(msg.sender);
    }

    function decrement() external {
        value -= 1;
        Decrement(msg.sender);
    }
}

"opcodes": "PUSH1 0x80 PUSH1 0x40 MSTORE
0x10 JUMPI PUSH1 0x0 DUP1 REVERT JUMPI
0x20 PUSH1 0x0 CODECOPY PUSH1 0x0 RETURN
MSTORE PUSH1 0x4 CALLDATASIZE LT PUSH2
CALLDATASIZE PUSH29
0x10000000000000000000000000000000000000000000000000000000000000000000
PUSH4 0xFFFFFFFF AND DUP1 PUSH4 0x2BAEC
PUSH4 0x3FA4F245 EQ PUSH2 0x73 JUMPI DU
0x9E JUMPI JUMPI JUMPI JUMPDEST PUSH1 0x0 DUP1 REVERT JUMPDEST
ISZERO PUSH2 0x68 JUMPI PUSH1 0x0 DUP1
PUSH1 0xB5 JUMP JUMPI JUMPDEST STOP JUMPDEST
0x7F JUMPI PUSH1 0x0 DUP1 REVERT JUMPI
JUMP JUMPI JUMPDEST PUSH1 0x40 MLOAD DUP1 DUP
SWAP2 POP POP PUSH1 0x40 MLOAD DUP1 SWAP
CALLVALUE DUP1 ISZERO PUSH2 0xAA JUMPI
POP PUSH2 0xB3 PUSH2 0x130 JUMP JUMPI DES
0x0 DUP1 DUP3 DUP3 SLOAD SUB SWAP3 POP"
Client

Sandboxed app
### Vote

<table>
<thead>
<tr>
<th>TIME REMAINING</th>
<th>QUESTION</th>
<th>TOTAL VOTES</th>
<th>PROGRESS</th>
<th>ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:00:23.14:58</td>
<td>Should we fund disaster relief for victims of hurricane Irma?</td>
<td>33.33%</td>
<td></td>
<td>View Vote</td>
</tr>
</tbody>
</table>

### Closed Votes

<table>
<thead>
<tr>
<th>STATUS</th>
<th>QUESTION</th>
<th>TOTAL VOTES</th>
<th>RESULT</th>
<th>ACTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved</td>
<td>Token Manager (ngo): Mint 1 tokens for 0xc43b0c4b6d227f36362f7f1fb7e624b2a632630</td>
<td>50%</td>
<td></td>
<td>View Vote</td>
</tr>
<tr>
<td>Approved</td>
<td>Should we help reimagine democracy in the United States of America?</td>
<td>50%</td>
<td></td>
<td>View Vote</td>
</tr>
<tr>
<td>Approved</td>
<td>Finance: Create a new payment of 753 BCC. It will be executed 1 time at intervals of 0 days</td>
<td>50%</td>
<td></td>
<td>View Vote</td>
</tr>
<tr>
<td>Approved</td>
<td>Token Manager (ngo): Mint 1 tokens for 0x15bdcb6651f5a5e9c6f07b2a98b62708a505051</td>
<td>100%</td>
<td></td>
<td>View Vote</td>
</tr>
</tbody>
</table>
Web worker
CHAPTER TWO

Package management
CHAPTER THREE

Apps and manifests
"name": "Finance",
"description": "Manage organization assets: budget spending and record financial transactions",
"icons": [{
    "src": "images/icon.png",
    "sizes": "192x192"
}]
,"script": "/script.js",
"start_url": "/index.html"
```json
{
  "environments": {
    "mainnet": {
      "registry": "0x314159265dd8dbb310642f98f50c066173c1259b",
      "appName": "finance.aragonpm.eth",
      "network": "mainnet"
    }
  },
  "dependencies": [{
    "appName": "vault.aragonpm.eth",
    "version": "^4.0.0",
    "initParam": "_vault",
    "state": "vault",
    "requiredPermissions": [{
      "name": "TRANSFER_ROLE",
      "params": "*"
    }]
  }],
  "roles": [{
    "name": "Create new payments",
    "id": "CREATE_PAYMENTS_ROLE",
    "params": [
      "Token address",
      "Receiver address",
      "Token amount",
      "Payment interval",
      "Max repeats"
    ]
  }],
  "path": "contracts/Finance.sol"
}
```
CHAPTER FOUR

Sandboxing
CHAPTER FIVE

Background scripts
/**
 * Fetch the given script and create a local URL for it
 * 
 * @param {string} scriptUrl Real world location of the script
 * @returns {Promise<string>} Local url for the script
 */

export async function getBlobUrl(scriptUrl) {
  // In the future, we might support IPFS protocols in addition to http
  const text = await fetchUrl(scriptUrl)
  const blob = new Blob([text], { type: 'application/javascript' })
  return URL.createObjectURL(blob)
}

export class WorkerSubscriptionPool {
  workers = new Map()
  addWorker = (app, subscription, worker) => {
    this.workers.set(app.proxyAddress, { app, subscription, worker })
  }

  hasWorker = proxyAddress => {
    return this.workers.has(proxyAddress)
  }

  unsubscribe = () => {
    this.workers.forEach((_, [app, subscription, worker]) => {
      worker.terminate()
      subscription.unsubscribe()
    })
  }
}
CHAPTER SIX

Build a dapp
osarrouy@macbook:test2 → pando init
[initialized] [/Users/osarrouy/test2]
osarrouy@macbook:test2 → pando config
? IPFS node URL: http://localhost:5001
? Ethereum node URL: http://localhost:8545
? Account type Unlocked account
? Account: 0xB8B6ccf6DbF56a51f04Ceee5c88ba7F0eBF783bB
[updated]
osarrouy@macbook:test2 → pando remote add origin 0x623c73ebcf1fededea302f728989d8631feccf76
[added]
osarrouy@macbook:test2 → pando pull origin master
[pulled]
osarrouy@macbook:test2 → ls
test.md
osarrouy@macbook:test2 → nano test.md
osarrouy@macbook:test2 → pando stage test.md
[staged]
osarrouy@macbook:test2 → pando commit -m 'Modifications here'
[snapshot] [zdq6yFZ5Ehe511y51r4Jd9WrtVYj5D47mPLUHogbSCV97Jf1D]
osarrouy@macbook:test2 → pando push origin master
[error] [You do not own PUSH role over remote 'origin']
osarrouy@macbook:test2 →
Aragon 0.6 Alba
Experiment with governance at the speed of software

hack.aragon.org