Arab Network Whitepaper

The Revolution of the Arab World

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I. Introduction

Problem Statement

Cryptocurrency and Smart contract platforms have generated significant interest and viable solutions for digital payments, DApps and potential stores of value. However, compared with their centralized counterparts, current public blockchain platforms appear to have severe limitations, especially in terms of scalability, impeding mainstream adoption and postponing public use.

Ethereum, the most widely used smart contracts platform much of its success can be attributed to the introduction of its decentralized applications by EVM, Solidity and Web3J. While Dapps have been a key feature of Ethereum, scalability has proven to be a significant limitation; today Ethereum transaction fees are breaking all records and historical highs. Although considerable researches have been undertaken to address these problems, however so far, the results have been negligible.

ARAB Network Solution in Brief:

In terms of scalability, **Arab** is already able to serve up to 15000 transactions per second making it one of the fastest blockchain in the world.

Arab has achieved this milestone by changing the consensus algorithm of the blockchain from proof of work to proof of stake with delegation.

Arab is a delegated proof of stake model that twenty-one nodes are responsible for producing new blocks; it guarantees scalability and network performance. Users don't have to wait for every node to confirm a transaction. Instead, users have to wait for fifteen of the twenty-one total nodes to reach consensus. This makes ARAB Blockchain very scalable and able to perform exponentially more transactions per second.

Arab blockchain works differently, and transaction costs are non-existent. Instead of paying gas, users lease their tokens to cover bandwidth to pay for a transaction. Instead of spending ETH, it is possible to recoup the token coverage when we decide that we no longer want to provide our transaction by selling our tokens.

Arab is implementing EVM as a smart contract on the Arab chain, allowing developers to deploy and run their Ethereum Apps using ARAB EVM and benefit from the advanced features of Arab, like fair distribution, fast block times and cost-efficient transactions.

Background

In spring 2020, our team started actively researching the existing solutions to build a blockchain with a technology that best suited our community. After several months of research, it became clear that EOSIO is an unbeatable candidate for the case. In Q3 2020, we started building on EOSIO Software, and in Q4 2021, we launched the ARAB testnet, which is a public DPoS blockchain.

ARAB Network Vision

ARAB Network is committed to research & development through the various stages of growth, allowing the team to educate and advise the Arab community about the opportunities using blockchain.

ARAB Network will release a number of native applications to push adoption and enable the Arab community and our partners to leverage the platform and ecosystem to achieve results in the short time possible.

The vision is to revolutionize all the different public and private organizations that rely on old methods and systems through a decentralized platform that allows deployment of next gen smart contracts to make all operations more transparent, thereby helping reduce time, cost and reinforcing the peoples trust in the system.

II. Why Arab?

Transaction Fees Do Not Depend on Token Value

One of the major benefits of the Arab blockchain is that the amount of bandwidth available to an application is entirely independent of any token price. If an application owner holds a relevant number of tokens on Arab blockchain, then the application can run indefinitely within a fixed state and bandwidth usage. In such case, developers and users are unaffected from any price volatility in the token market and therefore not reliant on a price feed. This independence from volatility in the token market is particularly helpful, as Bitcoin and Ethereum transaction fees killed many worthy startups.

Fees

Currently, native Arab transactions have no fees. Native Arab fees are set by block producers, voted in by token holders.

DPoS Consensus

Delegated Proof of Stake uses less computational resources compared to proof of work and it is more community-driven comparing to proof of stake. Less computational resources mean by using this consensus algorithm there will be less burden on the customer and the community can participate in this system without having the fear of bulky transactional fees and mining costs.

Arab Blockchain and Byzantine Fault Tolerance of the DPoS Consensus

BFT comes from the famous cryptography problem, explained using the Middle Ages story of the hypothetic generals of Byzantium, who are leading the army against an enemy (Persians) and because the empire is in moral and financial decay — there are high chances that one or several of the generals (not ruling out the commander of the force himself) are traitors. In the conditions of the blockchain world, where many nascent ecosystems usually rely on unverified providers of computational resources (and this does not necessarily mean “bad” providers) the BFT becomes particularly valid. It significantly lowers the risk of fraud by one or several BPs. BPs have additional incentive to function properly, besides BFT algorithms. This incentive is a social capital, which BPs are striving to get during the voting for the actual BPs. Compromising this social capital and trust is risky and economically unjustified.

III. Arab Protocol

Block Producers

Arab Blockchain consists of an unlimited number of nodes, of which unique 21 are selected as active block producers (BP) by means of automated voting every 126 seconds, we produce our blocks exactly every 0.5 seconds and exactly one block producer is authorized to produce a block at any given point in time. If a BP misses a block and has not produced any block within the last 24 hours, they are removed from consideration until they notify the blockchain of their intention to start producing blocks again. This ensures the network operates smoothly and minimizes the number of missed blocks by excluding unreliable BPs.

Selection Criteria

1. **Technology**

   In order to be eligible, a BP candidate team must be able to run secure and reliable servers necessary to actually produce blocks, operate a full node, and offer API endpoints to users. Our block producers should also be ready to scale out their infrastructure, and provide sufficient processing capacity, storage, and network bandwidth. Both cloud and bare metal servers are accepted. However, our management team will examine specific details of how those are operated. Cloud-based teams should run their software via multiple providers in order to minimize reliance on any single cloud service. Teams operating bare metal servers should have secure data centers with sufficient backups.

2. **Community**

   Arab Network philosophy is about rewarding diverse community members with various areas of expertise via their participation in block production Therefore, we will incentivize BPs from various industries and technology layers. We are particularly looking for BPs, having not only great technical expertise but also able to lead and inspire other community members.

3. **Ethics and civilized dispute settlement**

   Running decentralized blockchain is a sophisticated matter from many standpoints, including relations between the community members. Developer's ego and "fork battles" ruined and diminished market valuation of many interesting projects, including Bitcoin and early Ethereum.

4. **Geographical and institutional decentralization**

   To hedge our blockchain from political risks, we invite BPs from various regions, countries and economic backgrounds to apply. We will do our best to avoid situations when the majority of our BPs are located in a single country.

Voting and Proxies

Any user who has staked ARAB tokens can vote.

Each user can vote for up to 30 BP candidates using the full weight of their stake. For example, if a user has 100 ARAB staked, the user can cast 100 votes each for up to 30 BPs. Thus 21 unique block producers 11 of them are chosen by the preference of votes cast by token holders and the rest (10 Bps) are run by Arab network. The selected producers are scheduled in an order agreed upon by 15 or more producers.

We then split up the BP funds to maintain higher value for those most trusted in the community and those who run 1 of the active 21 BPs. We use the same active/standby proportion as EOS with major changes that will encourage BP to compete and contribute to the growth of Arab Network, with 25% of the BP pay going to active producers and 75% going to standby BPs calculated from a percentage of the votes received.

The reward 20 % of the Arab Network BP will be used for maintenance 80% will be distributed to the most contributive PB.

Arab Network will also use its voting power to encourage Active BP that contributed to the growth of the network

Users have the option of voting directly for block producers, but they can also delegate their voting power to another account to vote on their behalf. The delegated account, called a proxy, has no control over the original user's account — the user can proxy her vote trustless without handing over any keys. The proxy is authorized to direct that user's voting power towards certain block producers, but the user can revoke proxy's voting privileges at any point.

Accounts

Arab Network permits all accounts to be referenced by a unique human-readable name of 2 to 32 characters in length. The name is chosen by the creator of the account. All accounts must be funded with the minimal account balance at the time they are created to cover the cost of storing account data. Account names also support namespaces such that the owner of account.

Fee and Account Levels

Transaction fees are a significant obstacle to entry for a variety of successfully-developed Blockchains. We have created a multilayer approach to consumer credentials based on two simple criteria using a "receiving country" philosophy developed:

Account Levels	TX activities	Requirements
Novice	Can Receive Only funds	The customer only installs a wallet and signup
|Account owner	Can send & receive + Pays fees for each TX	Should have the minimum amount of ARAB coin
Staker	Same as above, but without fees	staked ARAB coin

As we see, “Novice” is a basic account level for customers who are trying our solution for the first time. All you need to do to become “Novice” is simply install the wallet. After the customer gets her first Arab Coins (1 ARAB at least), she becomes an “Owner.” This customer type can not only accept but also send funds to other ecosystem participants. For readers interested in understanding more about our account levels, we describe this technology in the Hybrid Account Model section below

Functional Infrastructure

User Authentication

In our CA module user should be logged in and can access the wallet using the two-factor authentication function in which he basically has to prove that he is a registered user and after that, we send that data into (jwt) format for credentials authentications.

Note that our wallet is non-custodial and users have to keep their private keys and account details safe because if the private key is lost no one can recover the account.

Transaction History Module

Transaction history module is basically a separate node deployed for our blockchain explorer in which an API gives data to the explorer so that people can follow their block production, transaction history,

staking information and their accounts details basically all the information stored in the blockchain. So finally, we can say that this module helps people to check the internal transaction anatomy of the Arab Network.

Migration Servers

We have also built several migration services to make Arab blockchain more user-friendly for a better experience like details that are not exactly blockchain-specific can be handled for such as emails, OTP mobile numbers.

IV. ARAB Ethereum virtual machine

ARAB EVM is an Ethereum Virtual Machine running on ARAB blockchain, delivering a turn-key solution for developers to operate their apps on an Ethereum-compatible, high-throughput, scalable, and future-safe platform, with low transaction costs for their users.

Architecture

How EVM on ARAB is structured and how it is related to the underlying ARAB blockchain

ARAB EVM design

EVM is implemented on ARAB as a smart contract: all activities that would normally be run by the EVM on an Ethereum node are run by a smart contract on the ARAB blockchain. An Ethereum compatibility JSON-RPC server provides the API Ethereum applications are expecting. It does this by translating the native ARAB state from the EVM smart contract to Ethereum expected format.

- Since the EVM is just another smart contract on the ARAB blockchain, multiple EVMs can exist on the same chain at the same time. They are differentiated by their ARAB account name.
- ARAB does not have the concept of logs, whereas Ethereum nodes provide the built-in eth_getLogs call to query logs. ARAB has logs query/streaming and history management as an external service called Hyperion.
- EVM transactions need to be able to pay native ARAB fees for transactions. This process is managed by the Ethereum compatibilbe JSON-RPC server that has a native ARAB account associated with it. This account is used for broadcasting transactions to the EVM contract.
- EVM smart contract uses native ARAB token as gas instead of ETH. More can be read on gas fees

ARAB' advantages over EVM chains

Block Time

Blockchain	Block time
ARAB Bblockchain	500 ms/2 transactions per second
Ethereum	12-15 seconds (plus mempool and miner pick up delay of several minutes)
Binance Smart Chain	3 to 5 seconds
Polygon	2.2 seconds

Consensus Mechanism

Blockchain	Consensus
ARAB Bblockchain	Delegated Proof of Stake (DPoS)
Ethereum	Proof of Work (PoW)
Binance Smart Chain	Proof of Authority (PoA)
Polygon	Proof of Authority (PoA)

Fees

Currently, native ARAB transactions have no fees. Native ARAB fees are set by block producers and voted by token holders.

Blockchain	Fee model
ARAB Bblockchain	native ARAB transactions have no fees & ARAB EVM fees are expected to be < 0.1% of Ethereum gas fees for identical transactions
Ethereum	Very high ($30 for a token transfer)
Binance Smart Chain	Dictated by Binance
Polygon	At the time of writing this document, the fee model for Polygon could not be established

ARAB Governance

Blockchain	Governance model
ARAB Bblockchain	Token-holder voting and democracy
Ethereum	Very high ($30 for a token transfer)
Binance Smart Chain	Binance dictatorship
Polygon	Polygon team dictatorship

Frontrunning protection

Front-running is an attack in which a bot interrupts a regular transaction while it is being packed by setting a higher gas cost to finish a transaction at a preferred rate before the attacked transaction occurs. Mempool is a collection of Ethereum transactions that have been broadcast to the network and are awaiting block packaging. It is the foundation for implementing front-running. By continually monitoring transactions in the Mempool, the front-running robot evaluates and selects targets that may be attacked

ARAB maintains binding restrictions for validators. Any block producer detected manipulating transaction order would be blacklisted by on-chain governance. Because of the fast block production, it is less probable that someone can frontrun transactions in a public mempool. ARAB native, and even more so ARAB EVM, have fixed transaction costs. Unlike previous systems, there is no way for one account to pay a greater fee/gas price in order to have their transaction completed faster than another user's transaction. As a result, frontrunning in ARAB and ARAB EVM transactions is functionally eliminated.

Blockchain	Frontrunning
ARAB Bblockchain	Prevented through governance
Ethereum	multiple existing frontrun bots
Binance Smart Chain	multiple existing frontrun bots
Polygon	multiple existing frontrun bots

V. Arab Network ecosystem

Arab Network will offer a series of open source smart contracts which our community will use to deploy, utilize and interact with Arab blockchain.

1.ARAB Wallet

ARAB wallet is a decentralized cross-chain wallet that allows users to manage their digital assets. It integrates various functions such as credit, digital assets and NFTs, financial lending, cross-chain

swap, news push, and various practical dApps, as well as supporting multiple mainstream public chains and their diversified digital assets.

Based on the BIP44 proposal, Arab has a fully dedicated multi-currency wallet. The local currency of our wallet is ARAB. Users can send and receive cryptocurrency, review recent transactions, and manage blockchain resources.

BIP44

Created by Trezor founders Marek Palatinus and Pavol Rusnak, Bitcoin Improvement Proposal 0044, or simply BIP44, is a document that improves the previous governing standard, BIP32. It specifies multi account hierarchy for deterministic wallets, namely: address type, registered coin types, account types (sending or receiving funds, purpose), change, and public derivation. By being BIP44-compatible ARAB wallet ensures it can interact with most of the existing blockchain wallet solutions for transferring and receiving funds. The advantage of BIP44 is the support of multiple accounts.

Multi-Currency

The ARAB Wallet initially supports Arab Coin,Bitcoin, Ethereum, BNB, Dashcoin, Litcoin, Dogecoin, Bitcoincash and ERC-20 USDT. We plan to add support for more cryptocurrencies. Another good reason for multi-currency support is the development of our crypto rewards program.

Hybrid Multilevel model

Arab has a hybrid account model where users can either send funds with PR without fee depending on the account type which could be owner are stacker moreover for receiving the fund you need no coins are taking ability if you want to receive only funds at a basic level you can receive the fund without holding any type of amount so this multi-layer account level system creates this system more convenient for the new users and more profit in planning for the people who are holding amount and staking

Level 0 “Novice”

At this level, the account will be considered as novice “Novice” users can only receive transactions and hold. In case they want to create transactions, then they should upgrade to “Owners”.

Level 1 “Owner”

At this level, the user has the ability not only to receive but also send funds and also ARAB coin the local native currency. Owners pay a fixed fee for each transaction they create regardless of the recipient’s account level.

Level 2 “Staker”

It has an account owner who has created an account within our system, bought some RAM, and staked NET and CPU. Basically, “Owner” is also a proper Arab blockchain user. The difference between these two is that “Owner” does not stake resources. We don’t charge Stakers with transaction fees.

DApp Browser

Fully functioning Web3 browser that can be used to interact with any decentralized application (DApp)

Meticulously crafted tool that provides a seamless, simple and secure connection between you and any decentralized integrated interface that is fully optimized for mobile so you can enjoy the content designed specifically for your device.

Interaction with Arab servers

Our Wallet interacts with other blockchain nodes on Arab blockchain to check account balances and statuses; it also interacts with Arab Server Infrastructure to authenticate customer account, sync transactions history, and to receive critical updates, such as migration notification, wallet software update.

A typical DPoS transaction can be considered confirmed with 99.9% certainty after an average of 0.25 seconds from the time of broadcast. In addition to DPoS, Arab add asynchronous Byzantine Fault Tolerance (BFT) for faster achievement of irreversibility. The aBFT algorithm provides 100% confirmation of irreversibility within 1 second.

2.ARAB Dex

Arab Dex is a decentralized exchange that offers limit/market trading (on-chain matching) with zero fees, implemented entirely on contracts, and has the potential to launch new markets freely without the need for listing permissions

ArabDex is a decentralized exchange with additional services such as Launchpad and more to come in the future, making it a one-stop DeFi platform.

3.ARAB Explorer

Unlike any block explorer, featuring a user-friendly design ARAB explorer allow you to browse through blockchain data and find ARAB transactions. Past and current ARAB transactions, balances of wallet addresses, block summaries and more can be found. Blocks are containers of data that save information regarding the ARAB transactions confirmed in a specific time period, the ARAB rewards assigned to validators, timestamps and more.

4.ARAB Metaland

Introduction

ARAB Metaland is the first virtual reality platform powered by the ARAB blockchain. Users may develop, enjoy, and monetize content and apps. Land in **ARAB Metaland** is permanently held by the community, providing them complete ownership over their works.

Users claim ownership of virtual land on a blockchain-based parcel database.

Landowners have control over what material is published on their parcel of land, which is identifiable by a set of cartesian coordinates. Content might range from static 3D landscapes to interactive systems such as games.

ARAB Metaland, unlike other virtual worlds and social networks, is not run by a centralized organization. There is no one person with the authority to change the laws of software, the contents of land, the economics of currency, or to prohibit others from accessing the globe.

Use Cases

Applications

The ARAB Metaland programming language will enable the creation of apps, games, sites, and dynamic 3D sceneries. This scripting language will be developed to handle a broad variety of features, such as object creation, texture loading, physics handling, encoding user interactions, sound, payments, and exterior calls, among several others.

Advertising

Billboards near or in high-traffic lands can be used by brands to promote their products, services, and events. Some areas may become virtual replicas of Dubai city or Abu Dhabi. Brands may also position items and create shared experiences to interact with their target audience in ARAB Metaland.

Digital Collectibles

We anticipate that users will publish, share, and collect unique digital assets issued by their creators on the blockchain. These digital assets will be exchanged inside this world.

Social

Groups that now meet in online forums, chat rooms, or even centralized multiplayer games might move their communities to **ARAB Metaland**. Offline communities may also find a home in **ARAB Metaland**.

Summary

ARAB Metaland will be the first distributed virtual world platform that allows developers to build and commercialize apps on top of it. The scarcity of land on which to build apps produces hotspots that catch user attention, generating money for content providers. In-world, ARAB coins will be used to acquire land, products, and services. ARAB coins will also be utilized to encourage content production and user adoption, therefore launching the first decentralized virtual world in the Arab world.

VIII. Token Allocation (to be discussed)

ARAB is the native utility token of Arab network; 1 million ARAB tokens will be minted at genesis to operate the blockchain with an inflation rate of 1% for payments to node validators. The tokens purchase the following resources CPU, bandwidth, and RAM. The tokens are transferable and may be sold;

ARAB holders can also take part in blockchain governance. The token allocation is as follows

- 50% of the total supply will be locked for 5 years. Token release relies on the community vote and market demand.

- 10% of the tokens will be distributed through token sales

- 10 % of the tokens will be used for development, marketing and linear vesting for 24 months

- 20% will be reserved for team and advisors who support the project

Token Unlocking Mechanism

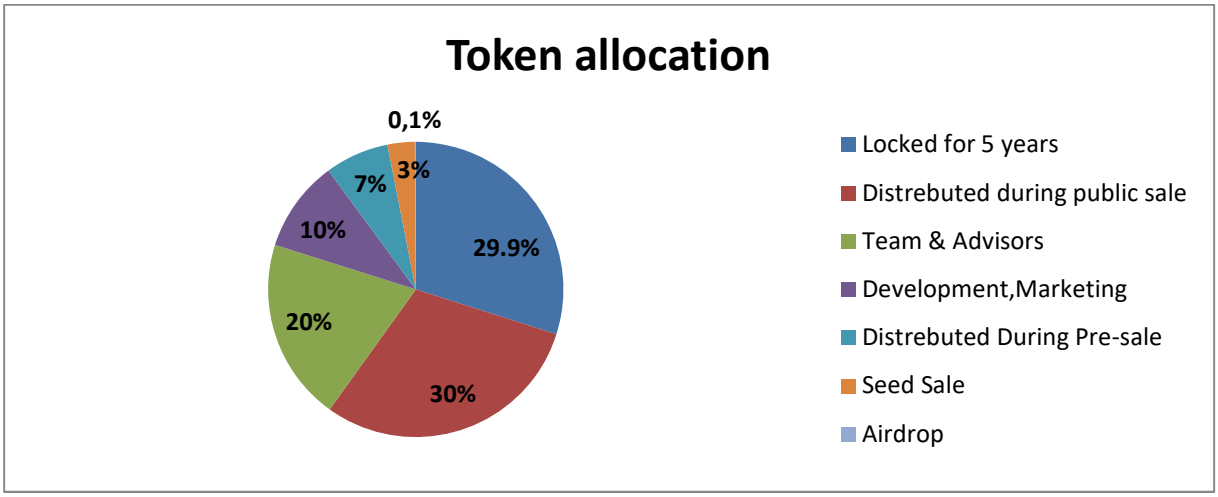
Seed Sale Vesting Period: 20% of the token will be released at TGE (Token Generation Event), and the rest will be vesting 15% each quarter.

Pre-Sale Vesting Period: 20% of the token will be released at TGE, and the rest will be vesting 20% each quarter.

Team & Advisors vesting period: 1 % of the token will be released 90 days after TGE, and the rest will be vesting 20% each quarter after month 12.

Development & Marketing: 10% will be released 90 days after TGE and the rest will be vesting 20% each quarter.

Public Sale: ARAB Network will allow token holders to vote on when and how much of the 30% will be sold.


Token allocation
0,1%
3%
7%
10%
29.9%
20%
30%
Locked for 5 years
Distrebuted during public sale
Team & Advisors
Development,Marketing
Distrebuted During Pre-sale
Seed Sale
Airdrop

Arab Network Development Roadmap

Q3.2020

-Studying the Arab world's need for blockchain technology

Q4.P1 2020

- Seeking for the latest blockchain technologies
- Team Buildup
- Setting up the whole infrastructure

Q4.P2 2020

Arab blockchain project launch

- Blockchain node analysis and connection
- Website Development
- DPoS consensus protocol up and running
- Explorer front end development

Q1. 2021

Launch the Testnet of Arabnet explorer and wallet.

- Whitepaper Buildup
- Performance ramped to 15000+TPS

Q2. 2021

Arab wallet App Development (Android & IOS version).

Q4. 2021

- Testing & Security Audits
- Whitepaper v1 released
- Arab wallet App Android & IOS version release
- Launch ARAB pre-sale
- Launch ARAB on Dexs

Q1.P1 2022

Deploy Dapp platform for developers

Full Smart contract Dev tutorials

- Applications Examples

• Demo
• Documentation
• Testnet Faucet
• Release **Arab Dex**

Launch of Arab EVM project

Q1.P2 2022
Release ARAB Metaland beta

List Arab on major exchanges

Risk Statements

Purchasing ARAB involves substantial risk and may lead to a loss of a substantial or entire amount of the capital involved. Before purchasing ARAB Coins, you should carefully assess and take into account the risks, including those listed in any other documentation. A purchaser should not purchase ARAB Coins for speculative or investment purposes. Purchasers should only purchase ARAB if they fully understand the nature of the ARAB Coins and accept the risks inherent to the ARAB Coins.