GPUnion

WHITEPAPER

Decentralized
Cloud Computing Ecosystem

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TABLE OF CONTENTS

Introduction 01

GPUnion is a decentralized cloud computing ecosystem.Built on blockchain technology, GPUnion aims to save the large amounts of computing resources that used to be wasted on mining, and share this power across GPUnion ecosystem. Instead of random hash value mining, resources in GPUnion ecosystem are empowered with modern technologies including artificial intelligence, scientific computing, deep learning, etc. GUT (GPUnion Token) is used as the digital currency among GPUnion ecosystem to settle payments between providers and customers.

Demands of GPU are increasing rapidly. As the deep learning technology becomes more and more popular, data scientists and students are researching different opportunities in this area. GPU could be an essential tool to accelerate the training of deep learning model.

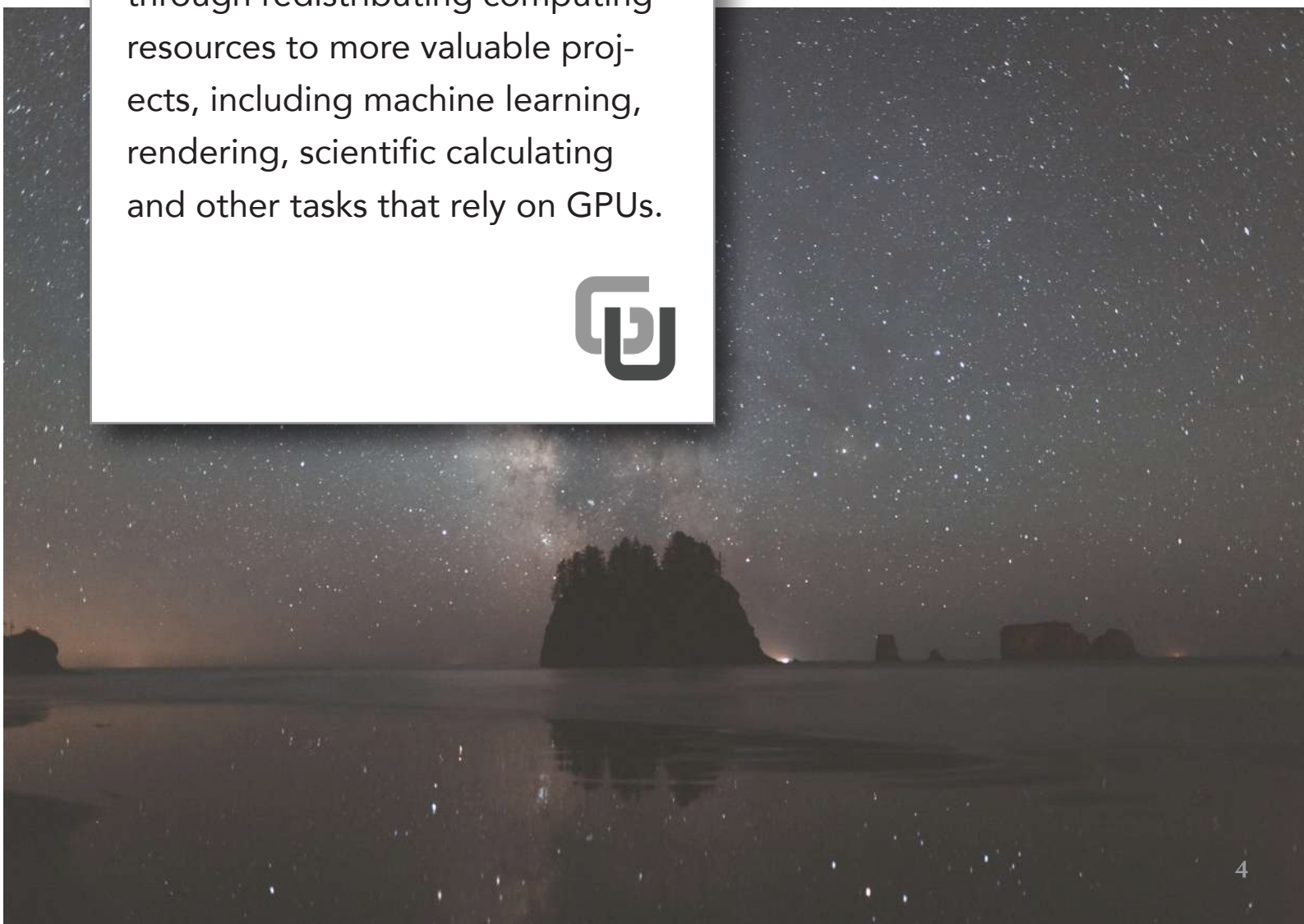
However, most potential users don't have access to stable and guaranteed GPUs. The common way currently is to either use cloud resources or purchase groups of GPUs, which will cost tremendously. With the successful launch of GPUnion project, affordable and powerful GPUs are available to everyone among the ecosystem.

Followed by the launch of GPUnion, numbers of GPU miners(x16r) will join the ecosystem of GPUnion. These miners are also GPU providers who are ready to share their GPU power to any customer in needs. Attracted by a much higher profit than mining on behalf of being GPU providers, more GPU owners will be willing to share their GPU through GPUnion ecosystem. This will resolve the growing conflicts between the hash power wasted for crypto mining and the complex GPU computing demanded by the development of computer science.

02

Mission Statement

Our mission is to change the world from establishing a sharing computing power platform. With our cutting edge technology and brightest professionals, we are dedicated to help both businesses and individuals scale and grow through redistributing computing resources to more valuable projects, including machine learning, rendering, scientific calculating and other tasks that rely on GPUs.

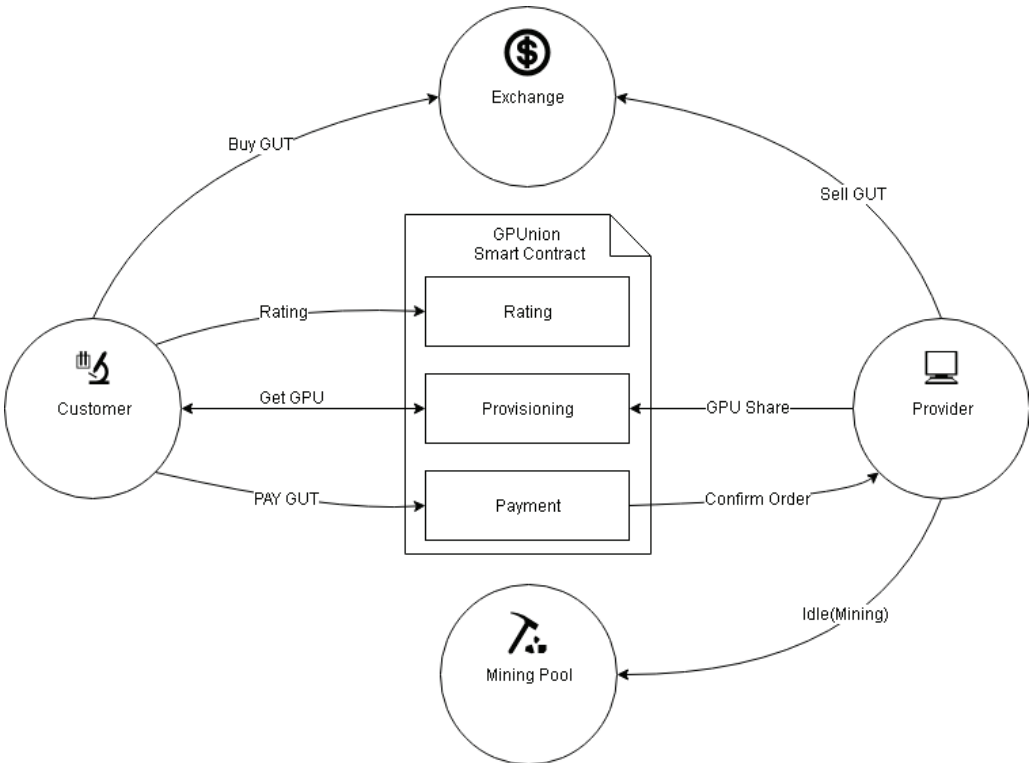


03 GPUnion Ecosystem

Overview

Providers, customers, mining pools, and exchanges are key roles involved in GPUnion ecosystem. Computing power is the digital assets that are being traded and transferred across GPUnion ecosystem.

Ecosystem architecture diagram:

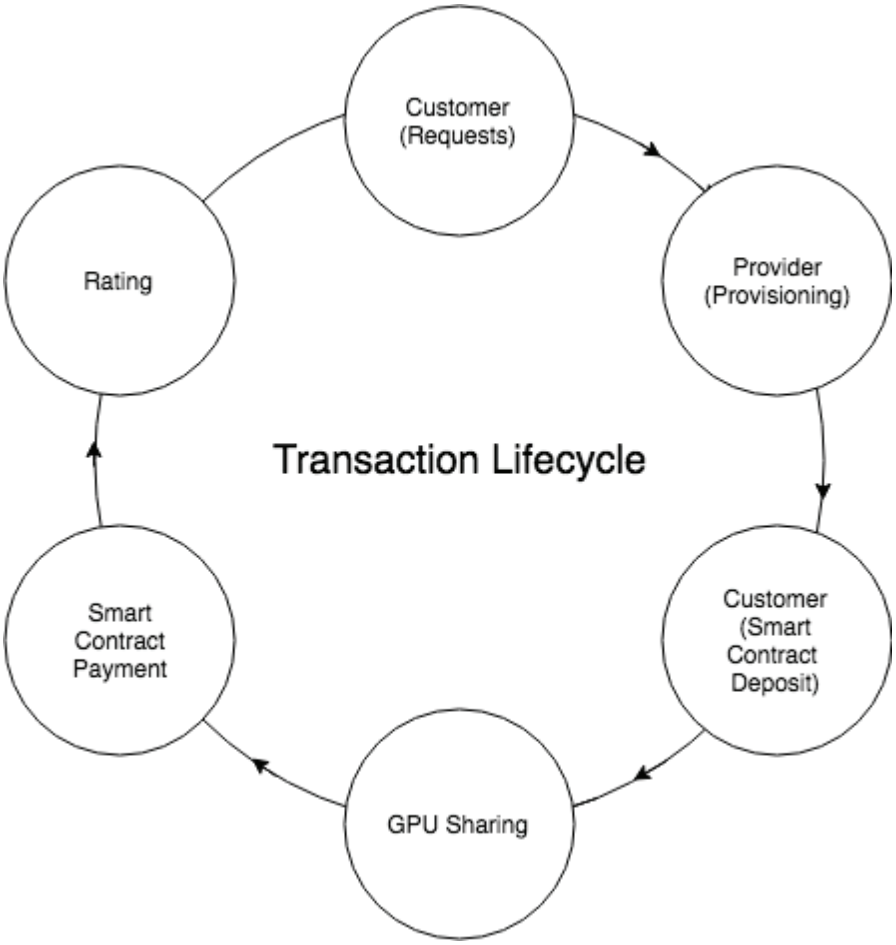


Providers:
GPU owners who share their GPU computing power to customers for computing tasks, and get GUTs as reward.

STATUS:
- Idle: Provider is registered and active in GPUnion ecosystem
- Sharing: GPU resource is provisioned and being available to legit customers.
- Reserved: Future usage of GPU resource is reserved by a specific customer on this provider, but mining is still allowed.
- Disconnect: Provider is not disconnected from GPUnion ecosystem

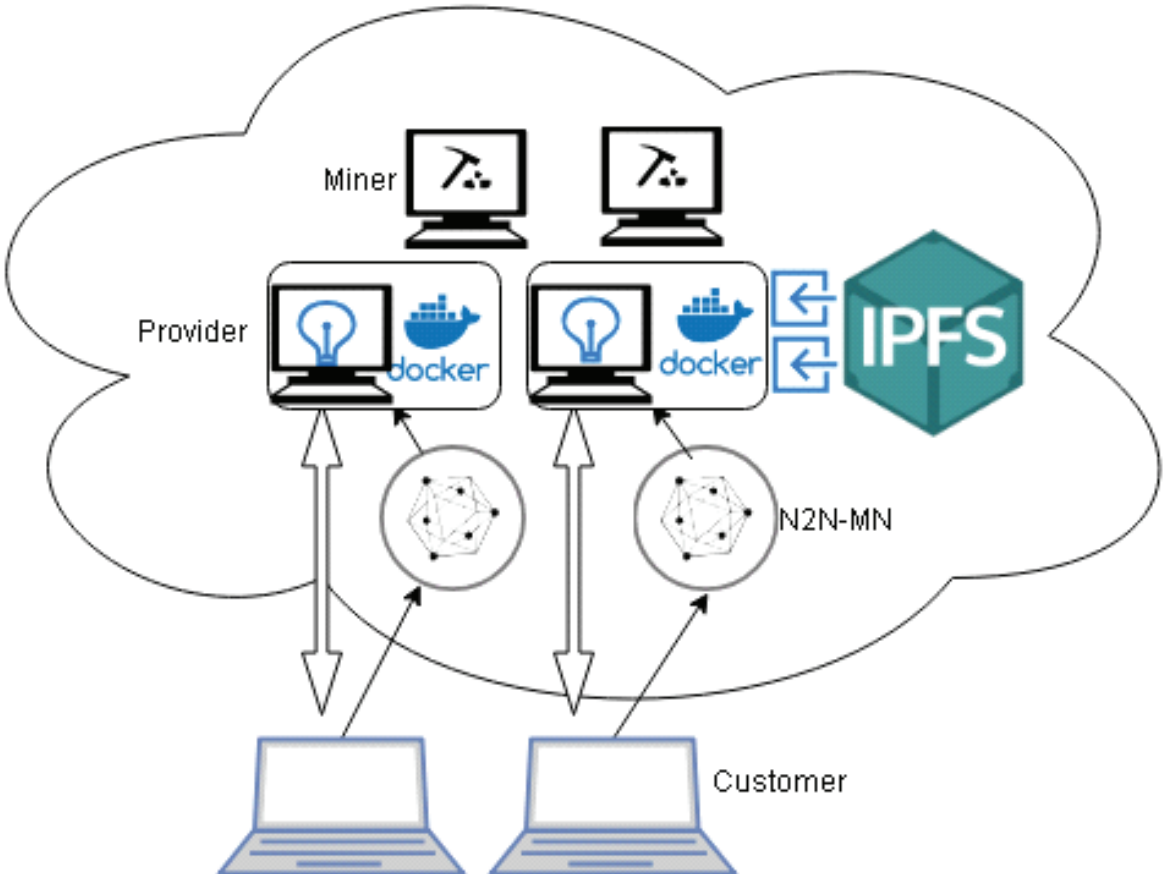
Customer:
Institutional researchers, movie studios, enterprises, or even individuals who need stable and guaranteed GPU cloud computing resources.
Smart Contract:
GPUnion ecosystem operates on smart contract.
Exchange: GUT listed exchange.

Computing power transaction lifecycle:



04 Project Overview

Architecture of GPUnion DVM(Decentralized Virtual Machine):



GPUnion DVM is a decentralized GPU resources sharing P2P network. It will have a new designed "N2N-MasterNode" to organize the network and maintain the service being high available. As the first DAPP built on GPUnion ecosystem, the mission of DVM is to share the mining hash power for scientific or research needs.

Milestones

Phase 1: DVM - Stone Age

Proof of Concept

- Reverse tunneling for P2P connection between hosts behind NAT
- Provider/Customer client prototype design & implementation
- Smart contract prototype design & implementation
- POC demonstration on Rinkeby Test Net

Phase 2: DVM - Bronze Age

- Adapt N2N technology for hole punching to establish connection between hosts with private ip
- Docker for environment flexibility, isolation and security on provider side
- Customer client + UI
- Provider client with CLI

Phase 3: DVM - Iron Age

- Rating algorithm
- Customer client GUI
- Provider client GUI
- Endorsing system
- Integration and testing in mainnet

Phase 4: DVM - Steam Age

- IPFS integration to allow docker image customization
- Recommendation system based on location, rating, etc

Phase 5: DVM - Information Age

Official Launch!

GPUnion Fog (Decentralized Cloud Computing):

GPUnion Fog is a Decentralized Cloud Computing Platform, followed by the launch of GPUnion DMV. Besides scientific purposes, GPUnion Fog enables a broader application of sharing power, which will, to a certain extent, facilitate the development of other industries accordingly. Regular users without a clear grasp of coding will be also able to finish complex analysis with Fog Computing Power in GPUnion.

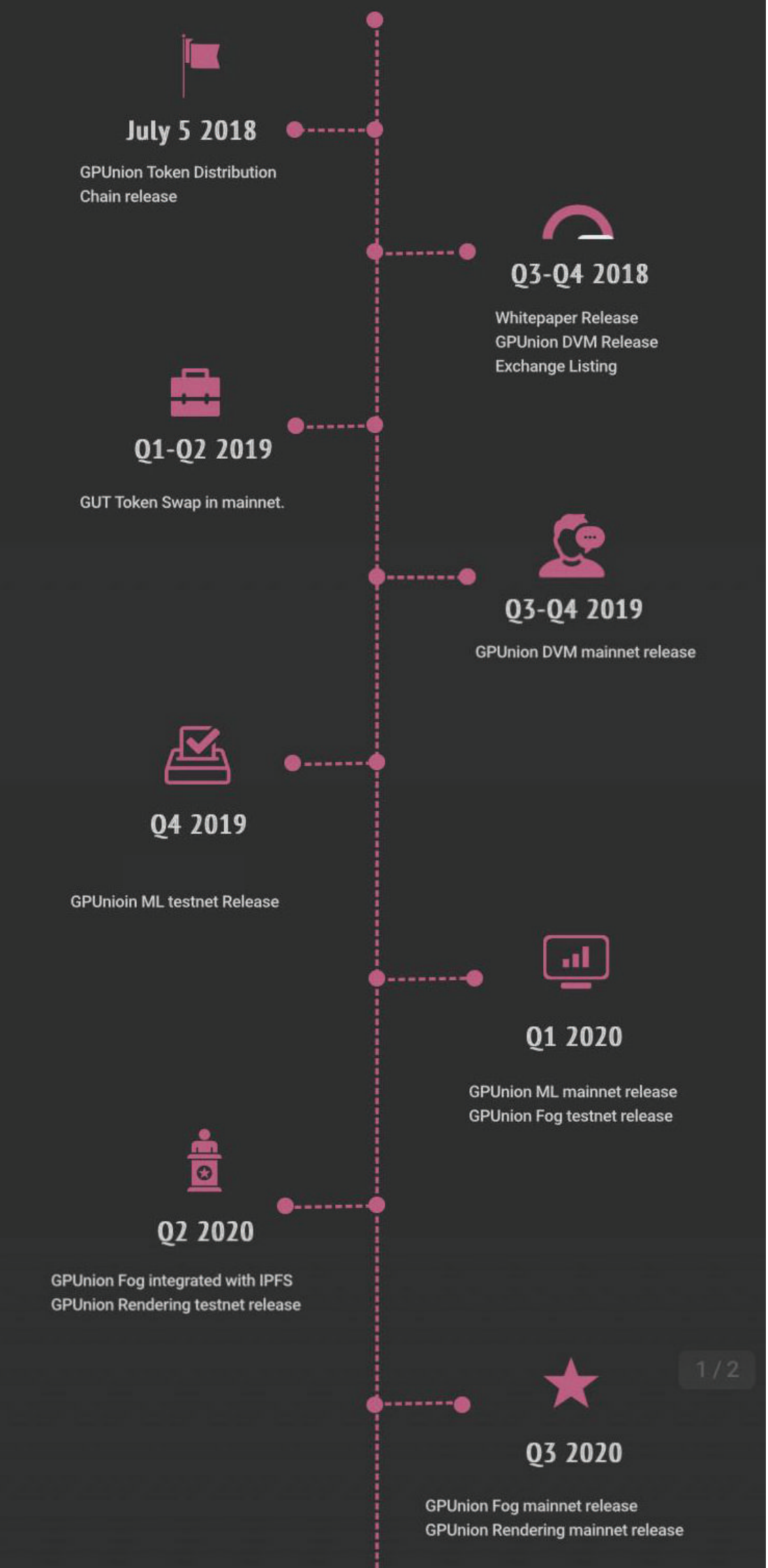
The Design of GPUnion Fog will be initiated after the official launch of GPUnion DVM.

Token Introduction

- Algo: x16r (Anti-asic, GPU friendly)
- Allocation:
- Total Coin Supply: 1,002,000,000 GUT
- 95% Minable, 5% premined as Operating Expense
- Token swap:

Token swapping is a two-step process. First, take a snapshot on GPUnion Token Distribution Chain block at a given height; Second, airdrop equivalent amount of GUTs to the mapped address owners on the mainnet. Since GPUnion Token Distribution Chain is only used for distribution purpose, the ecosystem will be operated on a major chain that supports smart contract. The token swap will take place on Q1-Q2, 2019, before the release of the first application, GPUnion DVM.

Roadmap


July 5 2018
GPUnion Token Distribution
Chain release
Q3-Q4 2018
Whitepaper Release
GPUnion DVM Release
Exchange Listing
Q1-Q2 2019
GUT Token Swap in mainnet.
Q3-Q4 2019
GPUnion DVM mainnet release
Q4 2019
GPUnioin ML testnet Release
Q1 2020
GPUnion ML mainnet release
GPUnion Fog testnet release
Q2 2020
GPUnion Fog integrated with IPFS
GPUnion Rendering testnet release
Q3 2020
GPUnion Fog mainnet release
GPUnion Rendering mainnet release
1 / 2