Osiris: A 2D Decentralized Metaverse

OsirisMetaverse.com

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Abstract. Osiris is a 2D metaverse, a living breathing virtual world with games, currency, and player owned assets. The avatars of Osiris are known as Cosmic Kids which are ERC-721 utility tokens stored on Ethereum. Osiris is decentralized, being developed, directed, and owned in part by its community. The world of Osiris is known as the Nexus. It is constantly evolving and is focused on fun, classic, and casual games. In Osiris, play to earn drives incentives for participation, earning crypto currency for a variety of gaming and social experiences. Osiris focuses on pragmatic development of the 2D metaverse, in time becoming accessible from almost any mobile or desktop device. Our vision is to provide a platform for seamless, accessible, fun gaming experiences, empowering players while bringing decentralized technology to a mainstream player-base.

Preamble

Osiris exists here and now, but yet is in another dimension of space and time. Only the free spirited Cosmic Kids have discovered the portals which transport them from their rudimentary home worlds into the radical dimensions of Osiris the Metaverse. Although Osiris is only accessed by Cosmic Kids, they seek to share their wisdom with others and spread happiness throughout all worlds.

The Cosmic Kids radiate happiness and joy as they traverse in-between portals of the world of Osiris known as the Nexus. Cosmic Kids come and go from the Nexus freely, leaving no trace. Sometimes they visit Osiris as a momentary escape from the mundane, and sometimes simply to socialize with other like minded free beings.

The Blockchain & Beyond

In 2009, Satoshi Nakomoto published the Bitcoin network which addressed the previous failures in digital currency. This innovation was unique in its combination of the proof of work consensus mechanism and the utilization of crypto economics pairing a scalable incentive model. This enabled unknown third parties to safely transact without the need of central custodians. This revolutionary approach became the launching point of an entire industry focused on the integration of decentralized technology into existing systems.

Ethereum was first proposed in 2013 with the intention to address many of Bitcoin's shortcomings. Ethereum offered faster transactions, greater support for a vast developer ecosystem and notably introduced the Ethereum virtual machine. This enabled developers an accessible way to write applications which could be stored on the blockchain.

Decentralized Applications

While the internet by nature was designed to be decentralized, over time it became owned and operated largely in part by a select few corporate entities. By design, these corporations are not focused on the best interests of the individuals who utilize their services, but rather extracting as much from them as possible to advance their own cause. Decentralized applications offer a radical paradigm shift away from this model as the power returns to individuals.

Decentralized applications offer many benefits including, true asset ownership, lack of bias, control, or manipulation from central parties, and the ability to collectively empower movements which reward the greater good. As such, in time we believe the majority of existing applications will shift towards decentralized technology. This shift is

inevitable as more individuals become aware of the benefits of such systems. It is important to note that decentralized technology is still in a relatively nascent stage.

The Metaverse

The term Metaverse was first coined in the 1993 novel "Snow Crash" by Neal Stephenson. While there are many definitions of what a metaverse consists of, we define it as a dynamic virtual world, owned, directed and developed in part by its community. Visually, a metaverse can be imagined as the spatial internet.

Many projects have taken inspiration from this vision of a Metaverse. As an example, an early attempt named Activeworlds was released in 1995 initially created by a single individual and was later developed by its community to have a digital landmass the size of California.

Most projects which aim to embody the vision of a Metaverse take inspiration from the movie "Ready Player One". Additionally, there are several metaverses currently in development. Many of these projects have one thing in common: they are focused on graphic intensive, immersive 3D or VR based experiences with complexity behind such development being immense. These projects currently suffer from many limitations including lag, low frame rate, and being inaccessible as they require high speed internet or an expensive computer or VR devices simply for a reasonable end user experience.

To be clear, the development of such a metaverse is not the intention of Osiris. We are developing a lightweight 2D metaverse. As an analogy, we are focused on developing DOS, not Windows 95.

Osiris

Osiris is focused on pragmatic development of a 2D metaverse. It is a dynamic virtual world with games, crypto currency and player owned assets. The avatars of Osiris are known as the Cosmic Kids. These are ERC-721 utility tokens stored on the Ethereum network.

Osiris is a metaverse with pixel based graphics and will eventually be able to run on the majority of mobile and desktop devices. The Osiris alpha release is only the beginning of such development, as we intend to evolve, upgrade, enhance, and open up further towards decentralization in the many years to come.

Osiris is creating an open digital platform upon which a variety of experiences can be developed. The goal of Osiris is to empower players with play to earn, which rewards engagement.

Cosmic Kids

Cosmic Kids are the playable NFT avatars of Osiris the Metaverse. To access Osiris, start with acquiring a Cosmic Kid, a unique ERC-721 utility token on Ethereum. Cosmic Kids offer benefits such as passive income through leasing and voting rights in the DAO. There are 10,000 unique Cosmic Kids.

Rarity

Cosmic Kids have 170 total different attributes, each with different levels of rarity. Together this constitutes your Cosmic Kids rarity score. This is assigned based on the

cumulative difficulty of acquiring the combined total amount of unique traits representative of the avatar. This rarity score has a marginal effect on the amount of starting energy a Cosmic Kid has. As an upper bound, we estimate the difference among energy to be at 25% between the most and least rare Cosmic Kids.

Leasing

Cosmic Kid owners can assign their unused Cosmic Kids as available for lease. To do this the owner must sign a transaction which flags that Cosmic Kid as usable by others. The owner then receives a percentage of said lessee's Lumina earnings. This percentage amount is yet to be determined.

Energy

Every game or experience the avatar partakes in has a requirement of energy. Once the game is activated the cost of energy to participate is automatically depleted.

Energy is implemented to prevent unfair play and provide rate limitations so all Cosmic Kids have a fair chance of earning Lumina. Energy is the cost of partaking in play to earn experiences. However, gaining energy is free. Energy restores naturally over time while logged into Osiris. The only requirement to gain energy is running a small proof of work in the background. This is done to discourage automated bots from abusing the system.

Osiris Gameplay

Gameplay in Osiris, at its core, is focused around play to earn. Each active player or Cosmic Kid is essentially a miner. Osiris does not have a singular gameplay mode but is instead a platform for a variety of play to earn experiences. The alpha release of Osiris will have 6 Game-pods, 6 Mini-games, 3 Social Zones, and 6 Art Galleries. We will also begin to extend partnerships to game developers to add additional casual games into Osiris. The vision of Osiris is to become a platform for a wide range of experiences.

The Nexus

The world of Osiris is built on top of a 2D grid known as The Nexus. The Nexus has several different zones that represent a variety of experiences which Cosmic Kids can participate in. The zones have two main types of distinction. The first is in world experiences which are built on the grid directly and can be played in real time with other Cosmic Kids. The second type are Game-pod portals which transport your avatar into another full screen experience.

The zones on top of the Nexus will change over time, determined by how DAO governance votes. While initially the land will remain hard capped in size, over time we may expand to accommodate more zones and experiences, including such instances as custom art galleries or other user created zones.

The zoning for the alpha release of Osiris can be viewed at https://www.OsirisMetaverse.com/zones

Game-pods

Game-pods are portals to games from within the Nexus. These games are casual and lightweight, featuring fun gameplay modes. Each time you enter into a Game-pod portal your Cosmic Kid's energy is slightly depleted. Once gameplay is completed you are awarded Lumina. The Game-pods offered within Osiris are constantly changing and evolving. Game-pods have an external display which shows daily top scores, unlockable NFTs, daily jackpots and screenshots of the gameplay itself. The most popular and active Game-pods are featured in the central location of the Nexus.

Game-pods can be developed by third-party developers and the most popular Game-pods are featured within the Nexus. The initial focus for Game-pod development is on lightweight 2D casual gameplay experiences. The amount of energy required to enter Game-pods varies based on the typical max gameplay completion time. The initial Game-pods typically have gameplay modes which last several minutes.

Mini-games

Mini-games are experiences that you can play directly within the Nexus. These games run in real-time and you can see other Cosmic Kids participating as you play. For each round of gameplay your Cosmic Kid is awarded crypto currency and in return a certain amount of energy is depleted. Some Mini-games are more passive such as Fishing. In passive games the quality of items used can be upgraded and enhanced. Other mini-games are more active such as Bash-A-Mole. Mini-games are typically multiplayer experiences. Some Mini-games have a maximum capacity in which case Cosmic Kids can queue for gameplay.

Community Artwork

The Nexus has several areas where community artwork is displayed directly in the world. This artwork is pixelated and kept under a certain resolution. In the future, community members will be able to submit their own pixel based artwork for approval. Initially this process will be done once a month and approved pieces will appear directly in the Nexus.

Art Galleries

Similar to how NFT's can be browsed and purchased through websites, art galleries in Osiris represent a unique way to browse, display, interact, and purchase NFT's minted on Ethereum. With the initial release of Osiris we will have a community based art gallery where members can upload their OpenSea NFT Ids to the Osiris web application. This will pull relevant metadata and display their NFT directly in the Osiris Metaverse. These community art pieces will be browsable, with a full screen popup dialog to view the piece in full resolution, while appearing pixelated on the community map. A link will also be available where people can directly visit OpenSea and purchase the NFT. In the future direct buying functionality will exist in the Nexus.

Social & Event Stages

Social zones are areas of the Nexus where people can gather, listen to music, have discussions, or do presentations. These zones are similar to an interactive digital chat room. In the alpha version, three social zones will be available. Osiris offers chat dialogs. Future versions will implement unique animations such as dancing and emojis.

Play to Earn

Over many years Ethereum has attempted to scale, enabling more transactions per second on the main network along with a reduction in gas. Despite these efforts Ethereum is impractical to support game development at this time.

Our initial point of focus when beginning to develop Osiris was establishing a proof of concept behind a play to earn token distribution model which had the properties of being accessible and scalable, in a real time game environment while being on a secure blockchain. At the beginning of development of Osiris, over a year ago, we implemented a proof of this concept along with a play to earn model that included application logic on a blockchain known as Klaytn.

Our implementation of this model utilized a fee delegated proxy smart contract. This provided a smooth end user experience. This method enabled a way to distribute tokens at low cost, with fast finality, and prevented the need to break the end user experience with constant barrage of dialog windows. We believe a seamless end user experience will lead to greater user adoption. Additionally, under this model Klaytn provided suitable security while costing a fraction of what transactions cost on Ethereum.

The custom framework behind this execution we have named Augment. As this was one of the first focal points of development when creating Osiris, our intention currently is to explore additional EVM compatible options prior to the initial launch as it is important to select a side chain which will provide scalability in the years to come. Augment is a framework which works on any EVM compatible chain.

Tokenomics

After detailed consideration we have decided to launch two tokens to accommodate play to earn in the Osiris Metaverse. One token is a fixed supply token and the other is an adjustable supply token. These work together in unison to serve the greatest long term interests of the Osiris community. Initially a single token allows enough incentive to provide sufficient benefits behind the play to earn model. However, we want to ensure this model represents how the Osiris community can thrive in the many years to come.

In the release of the alpha version of Osiris, the core focus is on a currency named Lumina. Lumina is variable in its total supply and can be burned or minted as a means to adjust the available play to earn income. Initially, Lumina will only be minted solely to provide rewards for play to earn activities, however this is not scalable. Providing the ability to burn and mint creates a mechanism upon which the amount of earnings can be adjusted. This is done so that as the Osiris platform grows, the play to earn model can accommodate long term sustainability.

Lumina is minted on a daily basis which is known as the daily Lumina allocation. The intention of the daily allocation is to transfer Lumina to community members on a continual basis. Every time energy is committed to a Game-pod or Mini-game a certain amount of Lumina is earned.

OSI will be the second currency of Osiris and will be introduced sometime after the alpha release. OSI is fixed in its supply with no more than 201 Million ever being minted. OSI will release gradually and on a schedule over a period of 10 years.

Additionally, OSI can be staked for a period of 3, 6 or 12 months. This is implemented to reward long term holders. We intend to encourage Lumina and OSI liquidity pairs through decentralized exchanges. As a reward liquidity providers will receive a portion of OSI that is released. OSI tokenomics will be further discussed in an updated version of this publication.

Land Ownership in Osiris

In addition to ownership of the avatars within Osiris, the land of Osiris can also be owned. Land owners receive a percentage of daily Lumina allocation and have voting rights in the Osiris DAO. Land is minted as an ERC-721 token stored on Ethereum. Land is extremely limited and although the grid itself may increase in size, there will initially only be 1,900 parcels of land minted.

Architecture & Technology

Osiris collectively consists of 5 core services which work in unison. These are:
- Augment
- Game Client
- Game Server
- Game Launcher
- Webapp
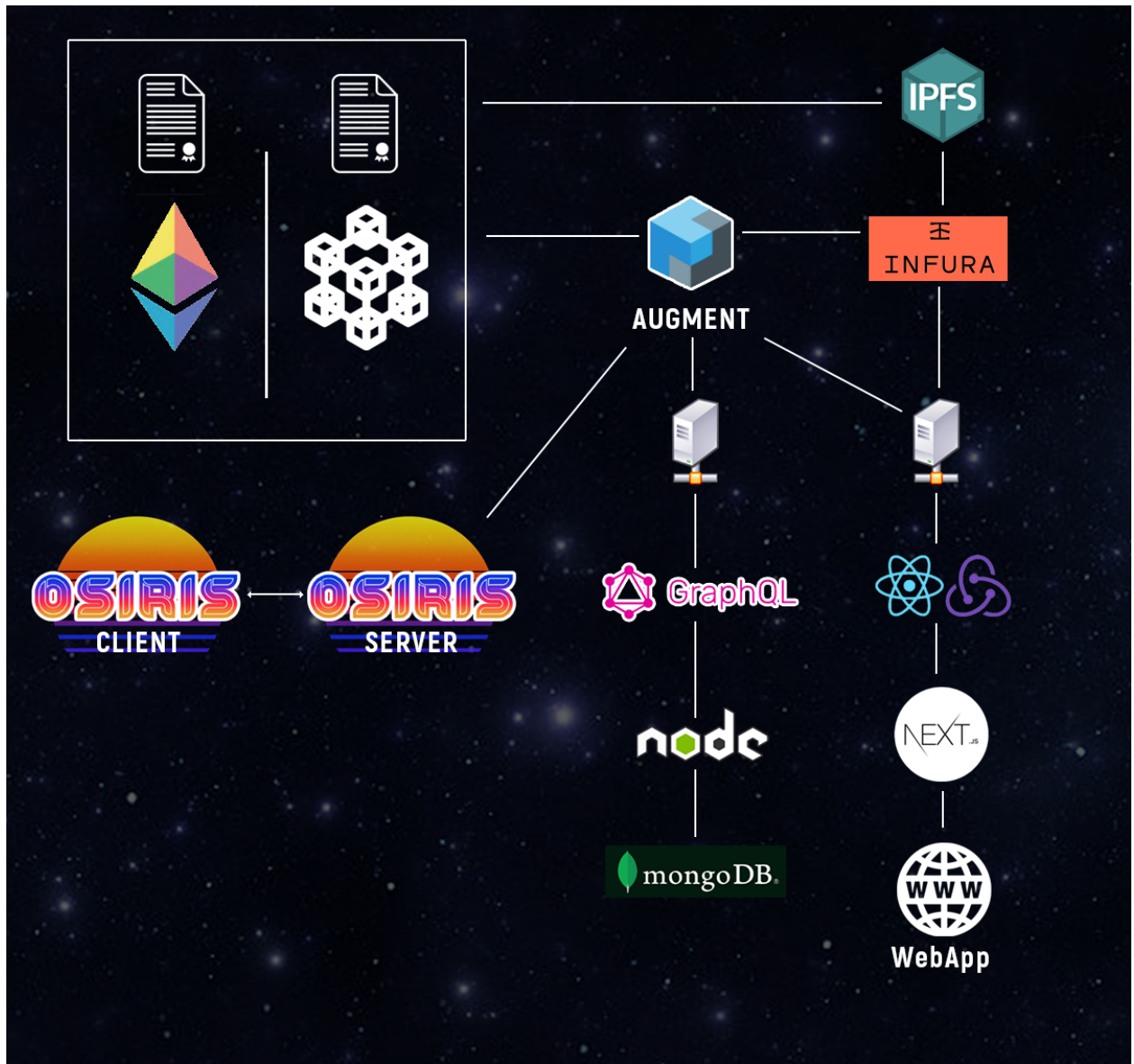
# Augment

Augment eases the missing pieces towards a frictionless end user gaming experience on the blockchain. This service acts as the bridge between game, server, and smart contracts and additionally provides seamless storage of non critical data which can be safely stored off chain.

Osiris Game Client

The majority of the client side code base is written in C# which provides the ability to target multiple platforms.

Osiris Server
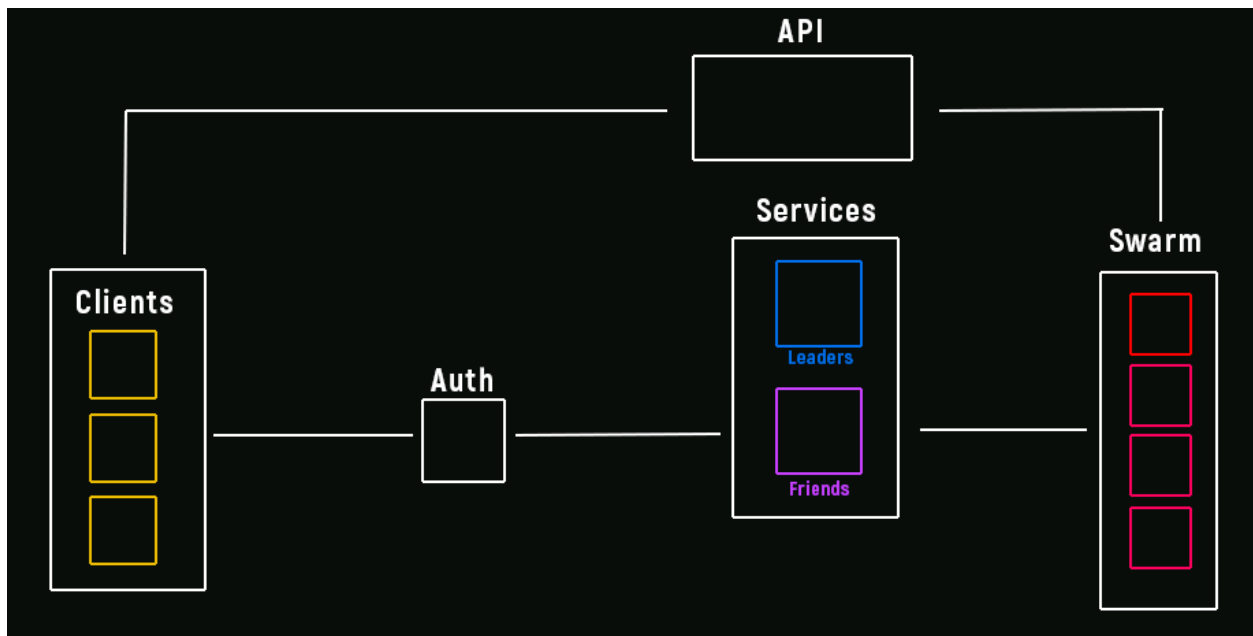
The Osiris server is built from the ground up on C# .NET in a scalable manner and can handle multiple packet transportation methods.

WebApp

Alpha Game Launcher

The web app is available as the standalone website, and additionally as a web view class within the game client.

The web app is expanding in the future to include:

- Scheduling an event in Osiris
- Uploading a DJ set for a social zone in Osiris
- Linking your OpenSea NFT id to be displayed within Osiris
- DAO voting

The Osiris DAO

DAO token holders will be able to participate in the governance of the platform where they can exercise voting rights on key decisions of the Osiris ecosystem.

The Osiris decentralized organization controls the future of Osiris to adapt and evolve over time. The DAO votes on important topics such as how to zone the grid, which community art to include in the Nexus, and which grants and proposals to accept. The weight of an individuals votes will be determined by the amount DAO tokens. The Osiris DAO is still in its early phase and will increasingly shift towards greater decentralized approaching its initial release in 2022.

Vision and Conclusion

Decentralized applications while still nascent, offer vast improvements over traditional software, notably the empowerment of individuals over large corporate entities. This technology in the coming years will reshape the world around us. We believe that the projects who truly embrace the principles of decentralization will thrive in the many years to come. Play to earn when successfully implemented offers new economic opportunities for a substantial amount of people which is our driving inspiration. Our mission at Osiris is to create the foundation of what is to become a fully decentralized metaverse.