“To be yourself in a world that is constantly trying to make you something else is the greatest accomplishment.”

Ralph Waldo Emerson

The ORIGYN NFT is a Sovereign Digital Experience that Runs on the Perpetual Operating System

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ABSTRACT

The Perpetual Operating System™, perpetualOS™, helps the user navigate a new world where unique digital assets meet real-world objects and experiences.

The system exposes several useful and custom dApps from a common URL interface. These dApps help users navigate an increasingly complex technology and enable many features that provide users with more control over the content, objects, and experiences they own and enjoy.

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Why do we Need the Perpetual Operating System?

We find ourselves in a world where:

We have experienced hyper-financialization that funnels economic gains to those able to navigate an opaque and complex financial ecosystem.

We have benefited from a movement of open and decentralized systems seeking to unbundle these ecosystems into a set of accessible and egalitarian DeFi solutions.

We see this same cycle spreading to areas beyond DeFi via maturing decentralized technology where we can apply many of the lessons learned.

Current mega-networks sustain themselves by directing your attention toward the experiences their advertisers want you to have, but the rise of NFTs (Non-Fungible Tokens) and the communities they build and manage trend away from an era where our experiences and relationships are arbitrated through centralized entities.

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In our research on NFTs, community building and the way smart contracts intersect the real world, we found the need for an “experience operating system” to provide the open, elective, and decentralized tools required to compress the complexity of the state-of-the art into a human-consumable interface.

By putting the tools back in the hands of experienced owners, creators, and organizers, we can de-financialize the externalities of our experiences and refocus those resources on the quality of our experiences.
The experience operating system built by ORIGYN is called the Perpetual Operating System (perpetualOS).

The perpetualOS exists to let human beings organize their passions, experiences, memories, and relationships on their terms, as well as to amplify the rich and diverse cultural experiences around them in perpetuity.

Once successful in this endeavor, the perpetualOS provides a pathway for creators to directly connect with their intended audience in a way that protects their intellectual property and their rights to the long tail of revenue their ingenuity produces.

But why?

Can’t one walk out into the world, engage, interact, and gain all the advantages without relying on technology, social graphs and, for all that is holy, an operating system?
We appreciate the optimism and wish you well on your journey to attempt to interact with our new world in pure meat space.

In today’s world, however, we see a reality where our interactions with the Parent-Teacher Organization at the local elementary school run through Facebook, and hundreds of smaller grievances interrupt us every day with ads, distractions, bad faith, political noise, and dissatisfaction-inducing infinite feeds. The perpetualOS is an offensive against this world in an attempt to empower users to enhance their lives through technology for the benefit of the collective.

So why do we need a perpetualOS precisely? If we don’t participate in shaping this world, helping to build tools and technologies that benefit a broader group of people, we continue to operate at the mercy of those who do not have our best interests in their motivations.

What is the perpetualOS?

The perpetualOS is a framework for connecting people to experiences using technology.

The end goal is to provide users with an adequate amount of information at the point where the digital connects with their life. It is oriented around connecting users to authentic experiences, capturing those experiences, and sharing those experiences.

An experience is a bit of a vague term, and we don't want to over-specify what an experience is in the context of this paper. We believe that the future holds "experiences" that no one is even conceiving of at this time, and we want our system to accommodate those. As an attempt at definition, we will say that an experience in this context is an activity that a user engages in for some period of time in which they expect to gain some personal, social, or even financial enrichment. The goal in our version, the perpetualOS, is to enable, enhance, and accelerate those kinds of "experiences."

NFTs were popularized in the early 2020s as a vehicle to express oneself and engage with a community. You will hear a lot of definitions for what an NFT is, and many will try to convince you that it is something special and new. To be straightforward, an NFT is just a smart contract. Always was. Always will be.

The label "NFT" reduced the generalized smart contract available in the implementation of an NFT standard to a comprehensible concept that was easier to understand, but all the power of a smart contract is still there.

What NFTs added to the smart contract soup was a memetic handle for people to grab onto, helping them to better understand what a smart contract could do. In one instance, a picture of a monkey can be only mine until I'm ready to sell it. I can own it, display it, get social credit for it, get perks because of it and more, but it is really just a smart contract associated with a set of bits and bytes that look like a funny cartoon. It may be a cool smart contract, but it is just a smart contract.

The first smart contracts revolved around money and financial instruments. Money is important, and it certainly intersects the lives of several techno-savvy people who understand the value of owning their own means of payment and finance. When NFTs came along, they began to intersect with a broader group of people around much less tangible "things." People began having unique experiences because of the cryptographically secure things they "owned." Still, this access was limited to the technically savvy.

To move beyond the technical savvy, we need to attack the problem from two sides.

First, we must give more "real world" handles to these experiences, where the less technically savvy can grab hold of them and engage with ease.

Riding a unicycle is possible, but a second wheel and some handlebars will expand your user base significantly. As another example, the tech to build Facebook existed for decades. However, it wasn't until it reduced the tech to the human-understandable actions of posting on a wall, inviting friends, and sharing baby pictures that a viral loop allowed Facebook to co-opt a decade of the world's collective attention. The perpetualOS attempts to translate these "cool tech" inventions on the Internet Computer to human-relatable actions that allow a user to get more out of interactions than they have to put into them.

Secondly, we must find a way for people to have access to lots of different experiences without having to go through a middleman.

The perpetualOS is the software that will let people connect with unique experiences and share them with others who have similar interests.

The Components of the perpetualOS

Collections leverage planned scarcity to create a fear of missing out and to attempt to raise the value of the assets that are part of the collection.

sNFTs create a rich history and encourage their caretakers to preserve and augment the value they can bring to the world.

Stars are categories of topics. They can be people, places, things, sNFTs, concepts, events, etc.

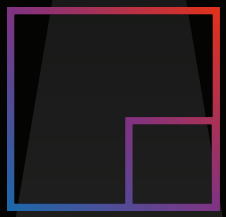
https://prptl.io/_

The URL gives users simple and consistent access to the perpetualOS.

perpetual OS™

Constellations are groups of related Stars. A collection of sNFTs, the related events, concepts, etc. may make up the constellation.

Social Spaces give predefined meeting places for people who are interested in common experiences.



The dApps help users interact with the experiences they own.

Galaxies are groups of Constellations that make up a broad category.

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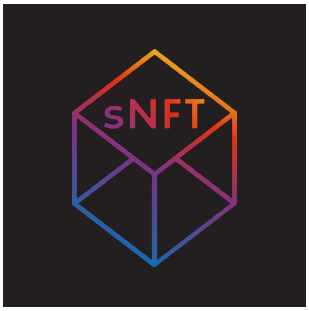

The sNFT

The sNFT (Sovereign NFT) is the perpetualOS's version of the NFT. Unlike a "standard" NFT, sNFTs are Sovereign Digital Experiences.

They are sovereign because they are fully operating members of the economic order and can seek the best place to realize their value. They are digital in that they are unique digital representations of either physical items or intersection points where a digital object meets the real world. They are experiences because, instead of being another consumer thing that goes into a drawer or landfill to be forgotten, they create a rich history and encourage their caretakers to preserve and augment the value they bring to the world.

This object likely needs a new name altogether. Though we prefer "Sovereign Digital Experience," we also recognize that turning the titanic is perhaps a fight not worth fighting, so we refer to these experiences as sNFTs from this point forward.

All ORIGYN NFTs are sNFTs.

EXAMPLES

ORIGYN Digital Certificates for watches

Bored Ape Yacht Club NFT (standard NFT)

The digital twin of a unique sneaker (sNFT)

A digital Pokémon card (maybe a standard NFT or maybe an sNFT with game mechanics built in)

Collections

Collections are groups of sNFTs created by a common entity. Typically, these are from the same creator and produced at a common time to represent access to or ownership of an experience. Examples of this may be an sNFT collection granted to the attendees of a particular conference or a set of sNFTs representing a unique release of a sneaker.

Collections leverage planned scarcity to create a fear of missing out and attempt to raise the value of the assets that are part of the collection. The increased value of collection items and their limited availability help assure that the users engaged with the collection collectively value the assets in a similar manner. This helps enhance the experience of owning the asset for everyone.

EXAMPLES

The Bored Ape Yacht Club Collection

A set of digital certificates for a watch brand

A digital twin collection of custom sneakers

The URL

The now-familiar URL gives users easy access to the perpetualOS. Simple and consistent addressing allows users to reach a wide swath of experiences and tools to interact with those experiences.

EXAMPLES

https://prptl.io/wallet

https://prptl.io/-/bayc/-/monkey-6/preview

https://prptl.io/com.app.your_co

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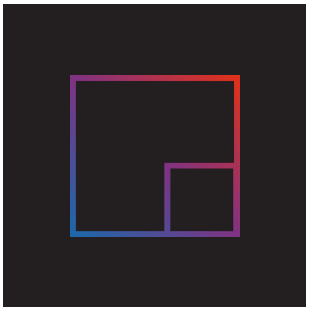


The dApps

The perpetualOS allows developers to create dApps (decentralized applications) to help users interact with the experiences they own.

These dApps can be as simple as a transaction history for the sNFT. They can also be as complex as a social fabric where users who share a common interest can interact and enhance their experiences. Developers can also build games and provide engaging experiences for users through dApps.

STANDARD DAPPS

The Wallet allows a user to interact financially with an sNFT or collection.

The Ledger allows a user to explore the history of an sNFT or collection.

The Data Explorer allows a user to explore the data inside an sNFT or collection.

The Board allows users to interact socially with other users in the context of an sNFT or collection.

The dApp Explorer allows users to explore available dApps that can be added to their perpetualOS experience.

The Abstract Program Interface allows users a visual and dynamic way to interact with the underlying internet computer protocol.

The Marketplace allows a user to interact with either the collection level marketplace functions of a collection or the marketplace functions of an individual NFT.

The Collection Manager adds dApps to their collections, as well as manages storage, users, functionality of the NFT collection, minting and the library.

The sNFT Explorer allows a user to search the network and discover new content.

Social Spaces

Social Spaces give predefined meeting places for people who are interested in common experiences. This new friend and relationship network will emerge organically through network effects. As users interact socially, they will have the ability to limit engagement to other owners, previous owners, or wide-open discussions.

As users interact with sNFTs, collections, stars, constellations, and other users, the perpetualOS will begin to build an un-owned and user-sovereign "trust graph" similar to the web-of-trust employed on freenet "sone" messaging system.[1]

[1] http://www.draketo.de/english/freenet/friendly-communication-with-anonymity

Stars

Stars are an overlapping category of topics. The best analogy might be non-transient hashtags. They can be people, places, things, sNFTs, concepts, events, etc.

EXAMPLES

***devcon_2023**

***2024_olympics**

***pirates_otc_disney_fl_ride**

Constellations

Constellations are groups of related Stars. A collection of sNFTs, the related events, concepts, etc. may make up the constellation. Generally, they have something significant in common.

EXAMPLES

****ethereum**

****olympics**

****disney_fl, **ethereum.*devcon_2023**

****olympics.*2024_olympics**

****disney_fl.*pirates_otc_disney_fl_rid**

Galaxies

Galaxies are groups of Constellations that make up a broad category.

EXAMPLES

***crypto**

***sports**

***theme_parks**

***luxury**

***collectibles**

Ultimately, users will be able to communicate across streams and topics using ***Galaxy.Contellation.Star notation. This helps users track what they want, when they want it.

The Users of the perpetualOS

The perpetualOS has three major user groups. The creators of experiences, the engagers of experiences, and the curators.

The perpetualOS exists to directly link creators with those that would consume and engage with their creations. It preserves the intellectual property rights of creators while helping to increase their profitability by cutting out the middlemen that extract rent along the distribution pathways. The gain is awarded to the creators and the underlying open network.

The second target group of perpetualOS users includes anyone looking to engage in experiences at a level provided by a hyper-connected and digitally-enabled world.

The perpetualOS connects to a user's cryptographic pseudo-identity and lets them manage the things they own, the experiences they have rights to, and the digitally enabled inventory in their collection. We use pseudo-identities as opposed to true identities to maintain the privacy and unique roles that a user may want to engage in. It is unlikely that a user would want their weekend soccer hooligan persona mixing with their nursery school teacher persona that they engage with during the week. Pseudo-identities can become as strong as real identities over time as one collects a rich history of experiences and patterns. See the research by Buterin, et al., on soul-bound tokens and distributed identity[2].

Users will encounter the perpetualOS unknowingly. When they engage with their first sNFT, they will do so via some of the basic dApps offered by the perpetualOS to purchase and review their sNFT. Once in these dApps, rich cross-pollination of functionality will ease them into the full functionality of the perpetualOS.

The perpetualOS also offers a connection point for users. While each user has their own corner of the perpetualOS, there are many areas where users will encounter the pseudo-identity of other users.

The third user is the curator. Curators will be able to collect interesting experiences and distribute them as packaged data sets that users will interact with. Curators will interact with the perpetualOS by creating dApps that can be installed by sNFT owners or collection owners in their context.

[2] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4105763

Creators

When creators create a new sNFT collection, they get significant “batteries included” functionality provided by the perpetualOS.

Each sNFT canister comes with a set of authoring tools allowing them to create standard and templated creations. The perpetualOS API will provide a pathway to custom and unique creations. As part of the creation process, various dApps, functionality, and pre-prepared experiences can be added to the collection.

This possibility extends beyond the minting process and gives creators the ability to interact with the owners of their creations continually into the future. The marketplace functionality built into each sNFT provides a commercialization option for creators that may want to support continued updates, adaptations, and new experiences for their collectors.

Experience Seekers

When experience seekers interact with sNFTs published through the perpetualOS, they receive functionality far beyond what the original creators intended.

An app store and rich builder community can provide the owners with new and novel interactions with their sNFT that creators did not envision at the time of creation. The perpetualOS also allows owners to see the world through the eyes of their sNFTs.

Each dApp in the perpetualOS lets developers understand the context that their users are interacting from and to present a view of an application or experience from that particular social, financial, or data context. As an example, a video dApp can show a list of videos that users have access to because of their ownership of a particular sNFT. Similarly, a social network could display conversations and relationships revolving around one particular experience restricted to owners of a particular collection.

Curators

Curators will have access to a significant amount of inventory through the perpetualOS. They will be able to curate and customize specific markets for their particular target users.

With the ability to mix and match experiences and objects across a wide array of available inventory, they will be able to create new combinations and interactions that go well beyond the initial intent of individual creators and providers.

How the ORIGYN sNFT Enables Sovereign Digital Experiences

The ORIGYN platform seeks to provide an authentication network for tangible and digital objects that protects the value created by human ingenuity. To accomplish this task, the ORIGYN network needs an sNFT that is capable of delivering on that promise.

The ORIGYN sNFT provides a broad range of functionality that brings the promise of NFTs in line with the new, scalable infrastructure offered by the Internet Computer.

The result is an object that elevates durable and digital goods from a traditional form of limited marketability to a new public and perpetual market where goods can provide maximum and sustainable value to humankind and from which users can enjoy sovereign digital experiences.

First, we should acknowledge that a broad and rich set of infrastructure exists for existing NFT technology. While we feel that much of that infrastructure is now antiquated and hindered by the limitations of the tech at the time it was created, we have done what we can to support current standards and provide a path to support the existing infrastructure.

The ORIGYN sNFT will endeavor to be compatible with both the DIP721 standard and the EXT standard on the Internet Computer. It will also provide pathways to compatibility with ERC721-style NFTs on EVM-based networks.

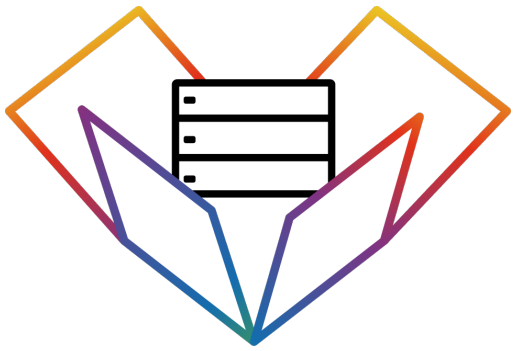
Storage

ORIGYN sNFTs provide an affordable facility for NFT creators to store significant data inside their NFT. Creators are no longer required to store data "off-chain."

Ingress and storage costs of data on the Internet Computer are many magnitudes cheaper than other chains. As of the time of writing, a standard iPhone photograph (3.3MB) can be uploaded to the IC for about $0.031 and stored for a year for $0.0165[3]. This enables any significantly valuable asset with digital imagery to include the data alongside the ownership and authentication record. High-resolution digital video may still provide some cost hurdles, but we believe these hurdles will soon disappear with storage subnets on the Internet Computer.

ORIGYN sNFTs are still completely compatible with traditional storage methods like IPFS and centralized file storage. However, in the long run, the public will benefit from having colocated media. We explore more reasons to colocate media on the chain in the Compute section.

We have enabled Collections to add storage containers that makes the size of their collections infinitely scalable.



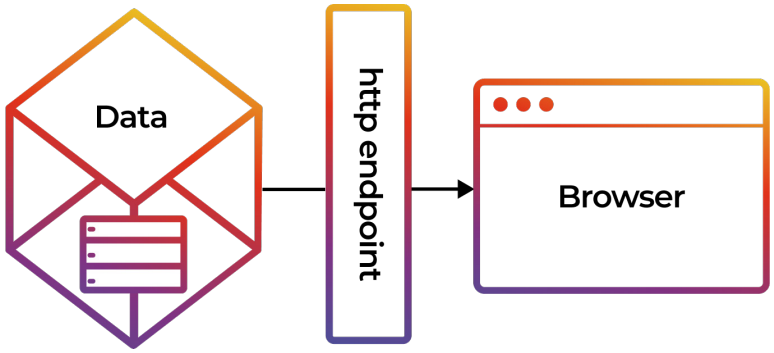
[3] https://twitter.com/dominic_w/status/1490349135249035264?s=21&t=-s5xFOZlUP5b8pXstdwgTg

Addressability

Traditional NFTs store their media across a wide range of heterogeneous systems that all have different access methods. Sometimes these access methods can be disrupted. An Amazon S3 hosting provider can stop paying their bill and your NFT can disappear.

On IPFS, all hosting providers can “unpin” your NFT’s media and cause you to lose access to the file. IPFS and other services depend on centralized gateway providers to translate your image requests from an https:// request into a protocol that the host network understands.

The ORIGYN sNFT has a built-in https:// query functionality via the perpetualOS and allows you to directly reference the media inside your NFT from an https:// URL from any web or mobile application. These access URLs can further update and redirect image requests based on other contexts in the NFT or on the Internet Computer. We will cover this more thoroughly in the Compute section.

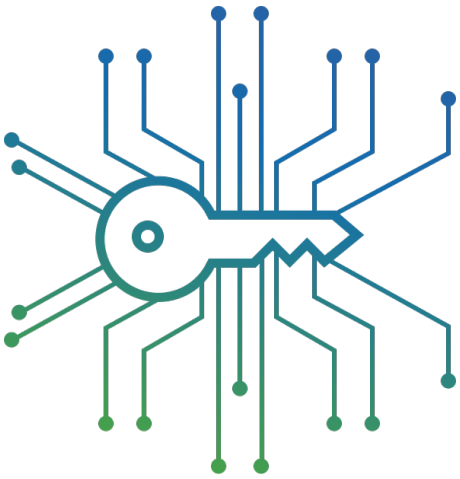


Native Bridges

The Internet Computer utilizes chain key cryptography that lets a private key be shared across a large and decentralized group of key holders. These keyholders can cooperate on combining the key and signing transactions.

This functionality means that ORIGYN sNFTs will have the ability to have their own Bitcoin/Ethereum/EVM addresses. As the Internet Computer begins to roll out native integrations, these NFTs will be able to respond to events on other chains.

This functionality brings a host of advantages from drastically reduced gas and processing costs to simplified bridging exercises for interoperating with marketplaces on other chains.



Compute

ORIGYN sNFTs can compute over the content in their media. This means they can change the view for a user based on the context elsewhere on the Internet Computer.

This can be as simple as the NFT being marked private and only returning a valid image to the owner or as complicated as applying a set of transforms to the image based on the state of a game canister. Compute over content enables a new world of on-chain and tracked composable content.

Classic NFTs cannot perform this same kind of differentiation and compute without employing complicated zero-knowledge schemes, and even those are limited in creating new content.

Marketable NFTs

The ORIGYN sNFT has a number of other features, including an internal market, wrapping resistance, fractionalization, governance, and a robust reward structure. Before we explore these concepts, we need to address Sovereign Digital Experiences.

ORIGYN sNFTs are perfectly capable of acting as traditional NFTs with all the trappings of a traditional ownership structure. ORIGYN sNFTs have another mode called “marketable NFTs” that give the NFTs a life of their own and make them first-class actors in the economy.

Traditionally, market makers have acted as middlemen connecting buyers and sellers and extracting rent along with facilitated transactions. The ORIGYN sNFT puts the object itself in the role of market maker and rewards the saved rent to owners that choose to engage in the new form of marketplace..

Wrapping Resistance

The ability to implement this type of system depends on the cooperation of a number of factors, actors, and crypto principles. Typically, a smart contract or digital object is owned by an address. The entity behind that address could be another smart contract—a human, a corporation, or a Decentralized Autonomous Organization (DAO).

This is a very powerful concept, but it does allow for one unfortunate situation that must be engineered against.

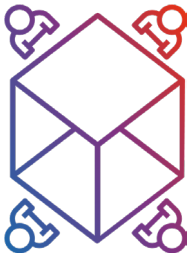
A smart contract can “wrap” another smart contract and sell access to only the outside wrapped contract. The outer canister can ignore logic in the internal contract (e.g., code that pays the original artist of a piece of art a royalty on every sale). To keep this from happening to our marketable ORIGYN sNFTs, we need to endow the NFT with code that allows it to escape the outside wrapper.

We put the marketplace for our marketable NFTs inside the NFT so that any market participant can interact with the object and initialize a change in ownership. The wrapper contract cannot block this interaction. When this occurs, the wrapper must conform to the rules of the contract or suffer a slashing event that causes it to lose a significant amount of OGY stake. We cannot completely eliminate wrapping, but we can greatly disincentive it through this method.

This wrapping resistance protects the integrity of the object and its expected behaviors across the marketplace, rewards systems, and node network.

This also creates a requirement for payments to flow through our NFT canisters. In doing so, we ensure that a user has compensated the originators for the value transacted on the network. Nodes can mitigate this and stand in as value arbiters as well. Ultimately, we are building trust between the value transacted and the originator publishing on our platform.

Governance



Proper governance of NFT assets is still possible with wrapping resistance. The governance structure is incentivized to follow the same rules of the contract as all other participants in the marketplace. This may complicate the governance of individual objects in the short term, but as tools and services increase, **DAOs will be able to engage with sNFTs on an equal playing field with individuals.**

Fractionalization, Particalization and Child NFTs

The concept of Fractionalization, Particalization, and Child NFTs is handled through the governance interface. This decouples NFT owners and originators from the future governance of their NFT.

Further, the implementation of the governance structure is left to the entity that forms the DAO/structure of the governing body. We will provide reference implementations of compliant DAOs that honor the spirit and letter of the native NFT contract.

Additional penalties or restrictions may be put in place for non-compliant DAO structures that seek to transact value without honoring the core NFT contract.

The World from a URL

Traditional operating systems run from the command line or use a visual Graphical User Interface to abstract command-line actions. Both paradigms launch programs that users can interact with. The perpetualOS uses the now-famous URL to let users navigate the experience graph.

Familiar entry patterns will allow users to quickly navigate to interactive programs they can use to manage their assets, tokens, experiences, and relationships.

https://prptl.io/

The perpetualOS starts with an easy-to-remember URL. This URL hosts a user's portal page. The perpetualOS comes with a default portal page, but developers can use the application framework to create alternative home page experiences for users. All home pages will provide a standard way to switch to different homepage experiences and assume different pseudo-identities.

https://prptl.io/{app_namespace or - }/

The first argument is called the app namespace. It can either be the default "-", which defaults to collection or loads an app namespace registered with the global perpetualOS namespace service. The command space has a number of predefined and reserved commands in the command space.

All default applications can be configured and changed by the user in the same way as the home page. Developers can create different experiences, and users can assign the relevant experience to their pseudo-identities.

App namespaces will be distributed as ORIGYN sNFTs themselves. These marketable NFTs will require app creators to maintain a sufficient stake for the value of the app namespace that compensates the network for the use of the public good.

Developers can register their dApps for acceptance by the perpetualOS community.

dApps must be open-sourced, reviewable, and comply with community-based guidelines to be listed by default. Users can manually load unregistered dApps via canister_id.

THE FOLLOWING "STANDARD dAPPS" WILL ALLOW USERS TO ACCESS COMMONLY NEEDED FUNCTIONS

Wallet shows token, nft, account balances relevant to the pseudo-identity.

```
https://prptl.io/wallet
```

Identity lets a user manage their identity, including access methods.

```
https://prptl.io/identity
```

dApps let a user explore, manage, and revoke access to perpetualOS dApps.

```
https://prptl.io/dapps
```

Collection. collection/collection_id/{command or app or -}/token_id/{command or app or -}/ library_id lets a user access a collection and the token or libraries inside the token.

```
https://prptl.io/-/{collection_namespace or canister_id}/{app_id  or -}/
```

Users will be able to access collections via collection selected namespace. These namespaces will be ORIGYN sNFTs themselves and are subject to the marketable schema that keeps collections on the hook for compensating the network for the use of the public good.

Stars, Constellations, and Galaxies will emerge organically and be manageable via ORIGYN network governance.

```
https://prptl.io/star/star_id/{command or app or -}
```

lets a user access the experience dApps for a star.

```
https://prptl.io/const/constellation_id/{command or app or -}
```

lets a user access the experience dApps for a constellation.

```
https://prptl.io/galaxy/galaxy_id/{command or app or -}
```

lets a user access the experience dApps for a constellation.

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Messages

https://prptl.io/messages/{command or app}/{identity_string or group_string}

lets a user access and configure their messaging dashboard or access specific messaging contexts.

Standard NFT Features

https://prptl.io/...nft_id.../primary

Reference for the primary asset for an NFT.

https://prptl.io/...nft_id.../hidden

Reference for the asset to show before an item is published.

https://prptl.io/...nft_id.../preview

Reference for an asset to show when there is a preview.

https://prptl.io/...nft_id.../ex

Reference for an asset to show that gives the users an authored experience.

How Data is Handled on the perpetualOS

Data runs the perpetualOS. sNFTs, dApps, and other elements provide metadata to other objects via a standard stable variant pattern, which enables document objects to exist on the Internet Computer. Metadata should follow a set of patterns.

These data patterns will be defined in detail in a future version of this document.

Each object on the perpetualOS supports a standard data explorer dApp that allows users to investigate and manage the data in those objects. Developers can define apps that manage each level of data.

Each pseudo-identity on the perpetualOS has a corresponding on-chain wallet that can handle data assets. Assets, especially those that include personally identifiable information, should be stored in the identities wallet.

This gives the users the ability to revoke access to the data without eliminating the ability to guarantee the crypto security of the data and transactions that depend on it. When a user rejects data in their wallet, they cut off access, but the hash of the data remains so that other applications can confirm their witnesses that may have included the data.

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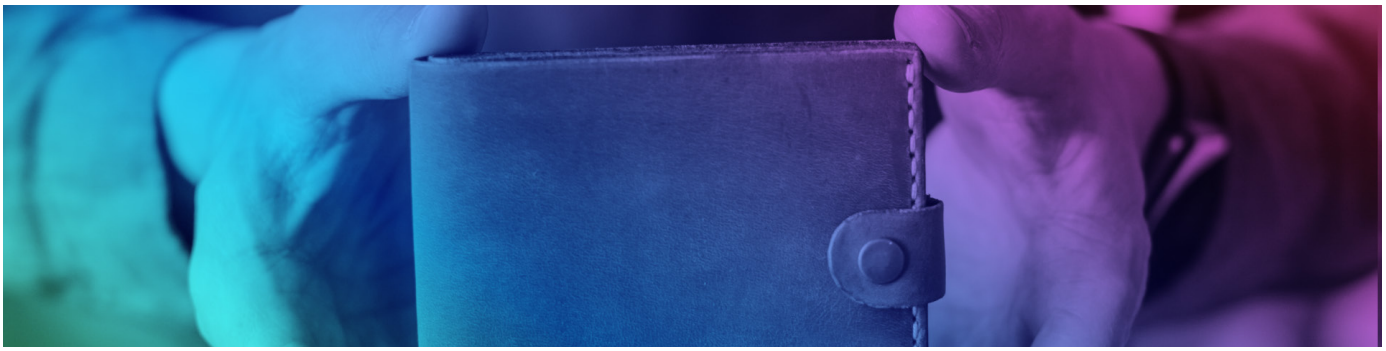
The perpetualOS is a Blockchain

The perpetualOS runs on top of the Internet Computer blockchain, but the applications that run on perpetualOS should also have characteristic blockchain properties.

Deterministic. The commands, data, and interactions with perpetualOS applications should be deterministic.

This means that if replayed on top of the same codebase, they should have the same results. In instances where randomness is used, it should be in a verified framework such as using the random beacon of the IC.

Auditable. The commands, data, and interactions should be logged in a transparent replayable log. Data can be encrypted in the log, but there should be crypto verifiability of how data in the application got there and who put it there.



The perpetualOS is a Wallet

The perpetualOS exposes an on-chain wallet that lets users have an always-on presence on the system that allows for automatic and simplification of user interaction.

The wallet allows for the storage of financial assets, experience assets, and data assets. Users can add various access methods and security schemes to the wallet so that users can secure their assets to the level they feel comfortable with.

The wallet supports pseudo-identities by spawning proxy canisters that give a new identity to each pseudo-identity on the system.

Since the wallet is always on, the user can give other applications access to data streams from other applications. Users can manage and revoke access to these data streams and commands at their discretion.

This wallet is accessible from any Internet Computer compatible wallet.

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The perpetualOS is a Social Layer that Connects your Experiences to your Digital Life

The perpetualOS provides a social layer free of commercial motivations that allow users to connect in an authentic way around the cultural touchstones that are important to them.

Connecting around objects — Each object loaded into the perpetualOS gains a digital twin that lives forever on the network. Users can connect with these objects and maintain lasting relationships with object owners over time.

Connection around topics — Objects inspire community and active discussion on topics. The perpetualOS generates these communities using our Star and Constellation system. Stars and Constellations are community driven and grow organically over time.

Connection around concepts — The flow of objects and topics generates high-level concepts that users may want to engage in. Users can engage at these meta-levels to help creators understand the appetite and preferences of users

The perpetualOS is Extensible

The perpetualOS is extensible in that it supports independent, third-party development of applications for the system. Developers can create productive, entertainment, financial, and social applications that plug directly into the platform.

The Data API

— Allows apps to store data inside of sNFTs
— Allows apps to store user data inside a user identity
— Allows apps to query data from other apps

The Market API

— Allows apps to start the sale of sNFTs
— Allows apps to manage the market interactions with sNFTs
— Allows apps to manage user tokens

The Identity API

— Allows apps to access identity-specific data in a secure and private manner
— Allows apps to create pseudo identities for users and to manage those identities

The Social API

— Allows apps to navigate social connections in a permissions way
— Allows apps to message users according to the rules set by users

The Object API

— Allows apps to query the state of sNFTs on the network
— Allows apps to create and manage sNFTs on the network
— Allows apps to search the data on the network

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Security Concerns

Some security concerns emerge with the use of the perpetualOS that need to be handled by developers wanting to protect their user's data and identity. Because perpetualOS dApps are all accessed from the same base URL, traditional security guidelines and assurances offered by the Internet Computer's Internet Identity service do not apply.

DApp developers should use the provided identity API to assure that users have anonymity across DApps where desired. Users of traditional wallets like "plug" will need to manually manage their security. Other services like NFID or the native perpetualOS on-chain wallet will provide features that allow users to default to unique principals per canister and allow users to manage that identity themselves. The APIwill route the proper identity to the proper canister in a way that preserves an anonymous identity per application.

DApps should not add the perpetualOS URL to their Canister Chose Alternative Origin record, as it will give any perpetualOS app access to act as the user from any other perpetualOS dApp. In situations where this is necessary, we will need to wait for the forthcoming principal access delegation feature.

Roadmap

This is a living document and will continue to evolve as we add more features and details emerge from the development of the perpetualOS.

Coming Soon

— Definition of the data schema and more details about where data lives and is kept private on the perpetualOS.
— More API Definitions.

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[1] http://www.draketo.de/english/freenet/friendly-communication-with-anonymity
[2] https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4105763
[3] https://twitter.com/dominic_w/status/1490349135249035264?s=21&t=-s5xFOZlUP5b8pXstdwgTg

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