Ether Domain Name Services

White Paper

A Decentralized Domain Name Services for the next generation of
the Internet World towards the Metaverse

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Our Company

Introduction

Blockchain-based naming systems evolved from the traditional Domain Name System (DNS). The primary purpose of DNS is to translate human-readable domain names to corresponding IP addresses which identify resources on the Internet. This resolution is made by using domain name servers which are centralized and typically owned by some large organization that provides authority. However, the decentralized network will build a new, completely open, and decentralized naming system on the blockchain. The ecosystem will support the resolution of domains, for example, hello.meta, to different types of resources depending on the desired use case. A wallet or plugin will be provided to the user to resolve the decentralized domain name. Thus, this wallet manages the decentralized resources with the relative token and the gateway to the new decentralized world from the traditional Internet world.

Every domain is represented as a non-fungible token (NFT) which is representing the ownership of a designated owner. The owner can map the domain name to the designated hash address within the Web 3.0 resources. In additions, like the traditional DNS, the owner can manage the subdomain name and take record in the NFT.

Preliminaries

The DNS is the part of the Internet's plumbing users may not often think about it unless it stops working. It's a different story for web hosting providers and site owners; they deal with DNS directly because they depend on it to translate human-friendly web addresses into machine-friendly IP addresses.

Every website has a domain name registered with a domain name registrar. The registrars work with registry operators, which manage registries—databases of domain and registrant information— and top-level DNS servers. At the root of the tree is IANA, the Internet Assigned Numbers Authority. IANA is administered by ICANN, the Internet Corporation for Assigned Names and Numbers. It maintains the root zone files and delegates domain name management of top-level domains like .com to registry operators. When top-level DNS servers go down, so do large chunks of the web, which happens with alarming regularity. The system depends on the trustworthiness of registrars and registry operators, and it's a weak point for criminals and censorious governments can attack.

Decentralized domain name aims to remove DNS's dependence on ICANN and the registries. Instead of registering a domain name with a registrar, the domain name would register on a blockchain. Because blocks are ordered, and the blockchain is distributed, no one can register a name twice.

Decentralized DNS systems don't aim to replace every part of the domain name system. Instead, they act as the alternate root of the existing ones. Namecoin was released in 2011 but has not seen widespread adoption. Unstoppable Domains is another entry in the field. Handshake is an interesting new contender which bills itself as a "decentralized naming and certificate authority."

Functionality

The decentralized domain name service, named Ether Domain Name Service (EDNS), manages the designated file location access. Users can register their domain name on top of the Top-level domain (such as .META) with the smart contract based on the ERC-1155 token standard. As a result, it is possible to support existing public chain ecosystem such as the Ethereum or IPFS. It is also possible to be traded in the NFT market, as the domain name is mapped to an NFT in the ERC-721 token standard.

As the future of the blockchain network provides a decentralized storage with web hosting services, it is assumed that a default subdomain with "www" is reserved for anyone browsing the web throughout the network. In the existing Internet world, the crypto wallet (such as MetaMask) become a role as the gateway/proxy to access the decentralized network. The wallet is a plugin which requires to install to the existing modern web browser, and it can manage the registered EDNS to access the decentralized network without memorizing a very long hash code address.

The EDNS has the following features:
 ・A smart contract stores the domain name (including subdomain name) and supports any language.
 ・The domain name owner can control the domain name through the crypto wallet.
 ・Backward compatibility to traditional web application, accessible from any modern web browser.
 ・The owner can custom-defined the domain name, which is unique within decentralized network.
 ・The domain name can be traded at the marketplace.

Decentralized Domain Name

A decentralized domain name is an identification string that defines a realm of administrative autonomy, authority or control within Web 3.0. It is used for application-specific naming and addressing purposes. In general, a decentralized domain name identifies a hash address that is defined in the public blockchain network.

The decentralized domain names are formed by the rules and procedures of the EDNS. Any name registered in the EDNS is a decentralized domain name. It can be organized in subordinate levels (subdomains) of the EDNS root domain, which is nameless. The first-level set of decentralized domain names are the top-level decentralized domains such as the prominent domains meta, ass, 404, music. Below this top-level decentralized domain in the EDNS hierarchy are the decentralized second-level name that are typically open for reservation by EDNS owners who wish to connect to a different location within the decentralized resources in Web 3.0, create other publicly accessible resources or run the decentralized web sites.

The Name Chain

Similar to the current domain name system, the EDNS is maintained by a public blockchain (Name Chain). The crypto wallet which can resolve EDNS can give answers to EDNS queries from the Name Chain and resolve the EDNS to the hash address of the actual location. The hash address is mapped to a decentralized resource such as decentralized storage or decentralized web hosting. In addition, one owner can own more than one EDNS and map to the same hash address.

The component in EDNS

To access a decentralized storage with EDNS, the user should install a plugin to the modern web browser as a gateway to access to the decentralized network. The EDNS is a component of the decentralized resource locator (DRL) used to access the decentralized resource. For example:

Protocol Second-level domain

DRL: xtp://www.example.meta

Sub domain Top-level domain
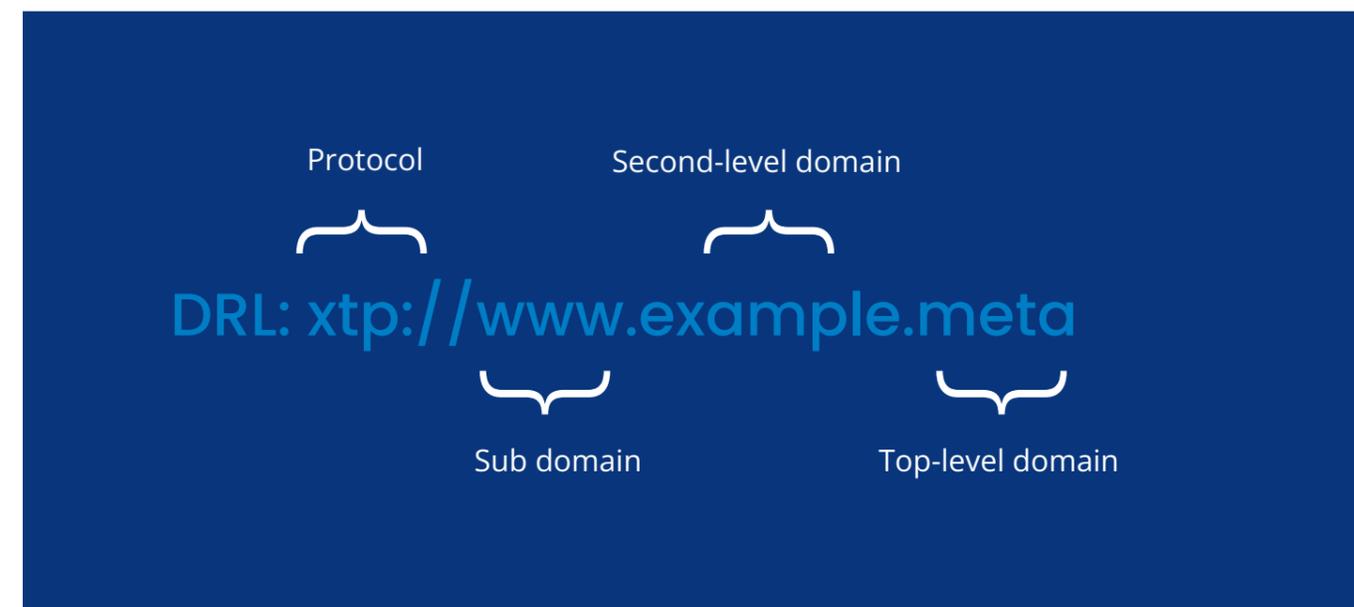
Note that xtp protocol is the name to signal the gateway accessing to the decentralized network instead of the Internet. If the gateway (plugin) does not install to the modern web browser, the browser will return nothing (or recognize as a keyword search in the search engine).

Second-level Name Registration

User can register Second-level Name of EDNS through the official EDNS website. The registration record is registered with a NFT which can resell in the NFT market. If the owner wishes to map the EDNS to their decentralized resource, the management website under EDNS can map the name to the designated hash address. In addition, the management website is also able to manage the

Subdomain

Similar to the current domain name system, the owner of the EDNS can manage any subdomain under the main EDNS. The subdomain of ENDS can be mapped to any decentralized storage bucket, folder, or hash address.

Risk warning and disclaimer

Systemic risk

Refers to the possible changes in returns due to the overall common factors, which affect the returns of all securities in the same way. For example, policy risk-digital assets have entered supervision in some countries in the world. If the judicial institution's policy changes, there is a particular possibility that participants will lose due to policy reasons; in the market risk, if the overall value of the digital asset market is overestimated, Then the investment risk will increase, and participants may expect the project to grow too high, but these high expectations may not be realized. At the same time, systemic risks also include a series of force majeure factors, including but not limited to: natural disasters, large-scale failures of computer networks worldwide, political turmoil, etc.

Risks between teams

There are many teams and projects in the current blockchain technology field, fierce competition. There is intense market competition and project operation pressure. Whether Ether Domain Name Service Limited can break through many excellent projects is widely recognized, linked to its team capabilities, vision planning, etc., and affected by many competitors and even oligarchs in the market, there is the possibility of facing vicious competition.

Project coordination and marketing risks

The Ether Domain Name Service Limited team will spare no effort to achieve the development goals set out in the white paper and extend the project's potential for growth. However, in view of the unforeseen factors in the overall development trend of the industry, the existing business models and overall planning ideas do not fit well with the market demand, resulting in unsatisfactory profitability. At the same time, since this white paper may be adjusted as the details of the project are updated, if the updated details of the project are not obtained in time by the participants, or the public is not aware of the latest progress of the project, the participants or the public may be concerned about the project due to asymmetric information. Insufficient cognition affects the follow-up development of the project.

Technical risks of the project

First, the Ether Domain Name Service Limited is constructed based on several open-source cryptographic algorithms, and the rapid development of cryptography is bound to bring potential risks of being cracked; secondly, technical support such as blockchain, distributed ledger, decentralization, and disapproval of tampering With the development of the core business, the Ether Domain Name Service Limited team cannot fully guarantee the implementation of the technology; again, in the process of project update and adjustment, vulnerabilities may be found, which can be compensated by issuing patches, but the extent of the impact caused by the vulnerabilities cannot be guaranteed.

Hacking attacks and crime risks

In terms of security, the amount of a single supporter is small, but the total number of people is large, which also puts forward high requirements for the security of the project. Electronic tokens have the characteristics of anonymity and difficulty in traceability, and are easy to be used by criminals, or attacked by hackers, or may involve criminal acts such as illegal asset transfers.

Other risks currently unknown

With the continuous development of blockchain technology and the overall situation of the industry, Ether Domain Name Service Limited may face some unforeseen risks. Participants are asked to fully understand the team background, understand the overall framework and ideas of the project, adjust their vision reasonably, and participate rationally before making participation decisions.

Disclaimer

The introduction and explanation of the basic situation of the Ether Domain Name Service Limited in this white paper is not and cannot be regarded as an offer or promise for investment or cooperation with any specific or unspecified subject, and it is not and cannot be regarded as a commitment or guarantee of the project by the project team. The project team reserves all rights to modify, delete, add, repeal, explain and other related actions in this document. Those who intend to participate, invest, or cooperate in this project must clearly understand all the risks of this project. Participants should enter into a written cooperation agreement to join in this project, and the cooperation agreement should complete and specify the cooperation, participation, or investment matters. Participants shall indicate in the written or verbal form that they have fully understood and accepted all the project's risks or may generate and bear corresponding responsibilities.

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Decentralized naming service for wallets, websites, and more

www.edns.domains