

Blockchain Name Systems and the Global DNS



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ICANN 81

13 November 2024

Introduction

- ⦿ The ICANN community is becoming more interested in how blockchain name systems interact with the global DNS
- ⦿ Recent ICANN publications
- ⦿ Some highlights about the differences between blockchain name systems and the global DNS

Recent ICANN publications

- ⦿ People in many different parts of the ICANN community asked for more information on blockchain name systems
- ⦿ They also wanted to know more about blockchains themselves because the name systems are tightly bound to the blockchain technologies
- ⦿ ICANN published two documents earlier this month to cover these requests

OCTO-039 and OCTO-040

- ⦿ [OCTO-039](#), *Introduction to Blockchain Name System Technologies*
- ⦿ [OCTO-040](#), *Introduction to Blockchain Technologies*
- ⦿ Both are technical and neutral
- ⦿ Neither promotes or disparages the technologies covered

Differences

- ⦿ There is just one global DNS
- ⦿ There is a wide variety of blockchain name systems, so you can't generalize safely
- ⦿ Things will change in the coming years as blockchain name systems try to differentiate from each other

Account identifiers (“wallet addresses”)

- ⦿ Some blockchain name systems have their own coins, others are associated with the more popular coins such as Bitcoin and Ethereum
- ⦿ The global DNS now has the WALLET RRtype that can specify any coin type
- ⦿ Some blockchain name systems allow you to specify just the blockchain account that created the name
 - In the global DNS, this would be like permanently associating a domain name with the credit card that paid for it
- ⦿ Others let you specify any number of accounts

Using global DNS names that are not delegated (1)

- ⦿ There is just one root zone for the global DNS, and it lists every TLD
- ⦿ “alt-tlds” are TLDs that are used in alternative name systems like blockchain name systems
- ⦿ Blockchain name systems that use alt-tlds make many assumptions about users:
 - Users will always use the correct resolver
 - The chosen resolver will have all the alt-tlds the user cares about
 - The user only cares about account identifiers, not IP addresses

Using global DNS names that are not delegated (2)

- ⦿ Name collisions can happen between blockchain name systems because there is no single central coordinator
 - There was an early effort (Web3 Domain Alliance) that failed
- ⦿ Name collisions can happen between blockchain name systems and future delegation in the global DNS

Some alt-tlds are also in the root zone

- ⦿ There is no definition for how to “integrate” blockchain name systems with the global DNS
- ⦿ The names might look the same, but they represent completely different name systems
 - The data behind might be different
 - The resolution of the names is done quite differently
- ⦿ Proving that the same entity controls both names is difficult when one entity is a contract and the other is a human

There's probably plenty more to talk about

- ⦿ ...and it will keep changing in the future.