Unlocking Cross-Chain Smart Contract Innovation With CCIP

January 19, 2022   Chainlink

In his recent presentation The Future of Chainlink, Chainlink Co-founder Sergey Nazarov discussed the

Chainlink   Developers   Products   Use Cases   Ecosystem   Community   Resources   Start building

presentation.

Share

f

t

in

The Future of Chainlink | Sergey Nazarov

CCIP is the application of Chainlink's highly secure consensus mechanism—that helps secure over $75 billion and has operated successfully for multiple years—to the problem of cross-chain communications. It is not just about moving tokens; it is actually about communications. This is the big distinction of what CCIP does.

CCIP will create many distinct bridges, and those many distinct bridges will move tokens between chains and between applications. But in the opinion of many of the people building CCIP, that is a very limited scope. Just implementing the ability to move tokens is really not enough to take our industry into a world of what we call cross-chain smart contracts.

CCIP Securely Connects all Public and Private Blockchains

CCIP: Securely Connecting all Public and Private Blockchains
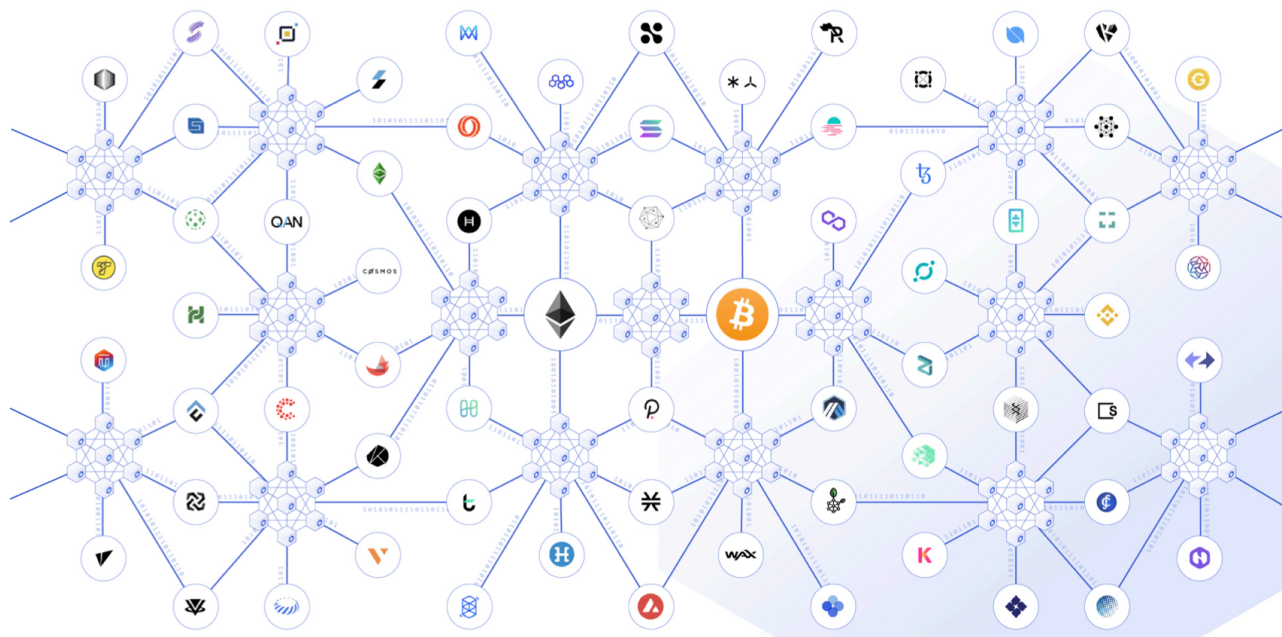
"You will be able to generate with the emergence of CCIP a smart contract that is actually multiple contracts on multiple chains interoperating with each other." – Sergey Nazarov

This is the third large evolution of how the definition of a smart contract will expand. The first evolution was going from one contract to two or more. The second evolution was going from multiple contracts on a single chain to those contracts using trust-minimized off-chain systems in the form of oracle networks to acquire data and to acquire computation to interface with all of those systems reliably. The third large shift and expansion in how smart contracts are going to be defined is the creation of a cross-chain smart contract composition capability.

What Defines a Smart Contract Continually Changes/Grows
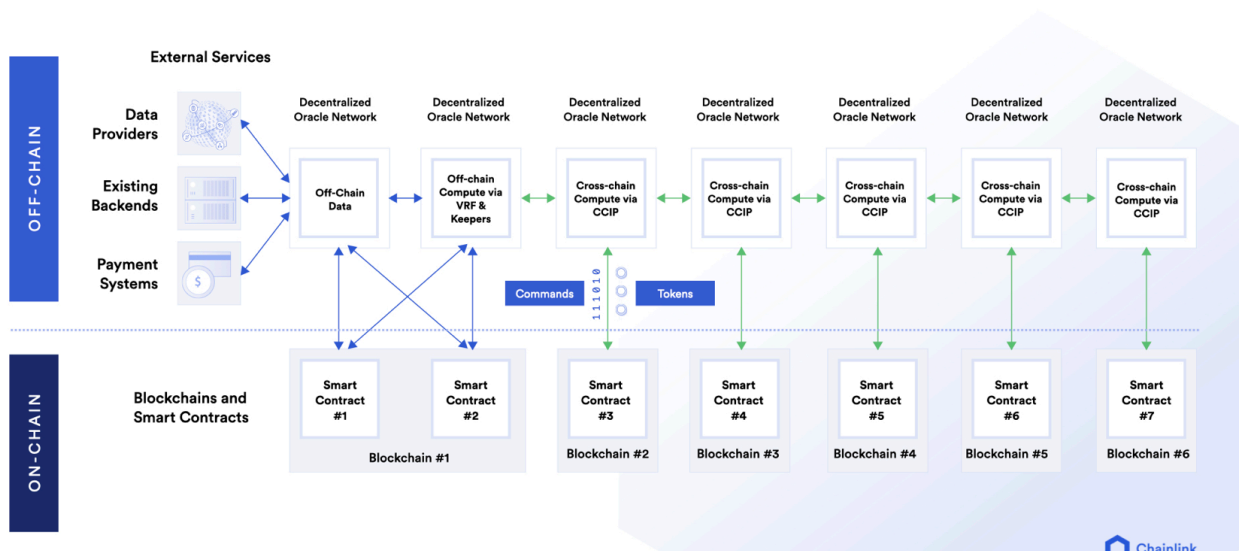
You don't just generate a smart contract or a set of contracts on one chain and that's your smart contract. With the emergence of CCIP in this coming year, you will be able to generate a smart contract that is actually multiple contracts on multiple chains interoperating with each other. This will be another huge leap, similar to how the generation of price data has been a huge leap for the emergence of DeFi, and the generation of verifiable random numbers and various off-chain computations in an oracle network have caused huge improvements for NFTs and gaming.

The ability to create cross-chain smart contracts will allow developers building smart contracts to utilize various pieces of code on a wide range of different chains, just like how multiple different pieces of code are used in multiple different clouds. Web developers utilize the service and the piece of code that's best suited for a task. That is how web applications are built, and what the Chainlink Network and ecosystem will enable developers to do by providing this cross-chain capability.

Smart contracts will have a much more useful format, known as a cross-chain smart contract. These contracts will still be hybrid smart contracts because they utilize off-chain data and computation services provided by oracle networks, whether for verifiable randomness, keepers services, or other off-chain services.

"Developers will actually have the ability to build smart contract applications the same way that web developers are building high-quality web applications." – Sergey Nazarov

At the general level, that's what the blockchain industry, the Chainlink Network, and the Chainlink system need to accomplish to get the next million developers coming into the blockchain industry. To allow them to build the way they are used to building in the current web industry. They're able to build high-quality applications quickly, cost-efficiently, and with easily usable applications. That is what we need to provide as an industry, an ecosystem, and a community.

While oracle networks for data provide that functionality for DeFi applications, and oracle networks

for computation and random numbers provide that for gaming and NFTs, the ability to stitch together multiple pieces of smart contract code on multiple different chains is going to redefine how developers build applications in the blockchain industry. You'll be able to use the chain that you want to use for what it's good at. You'll be able to use certain main chains for the security guarantees, other chains for certain speed or scalability guarantees, and even many other chains essentially as storefronts.

You'll have multiple contracts on those chains that get value from those blockchains' users. This will result in essentially one large smart contract, composed of multiple on-chain contracts and off-chain services that provide bridging in the form of communication, the ability to get data, and the ability to do trust minimized off-chain compute that was previously inaccessible, but necessary.

The Cross Chain Smart Contract Infrastructure Stack

*"This is the large innovation of CCIP. It creates what we feel is a cross-chain smart contract stack, with CCIP as a key protocol at the center enabling communication."
–Sergey Nazarov*

That protocol can be used on decentralized oracle networks like Chainlink, and it can have key additional capabilities such as the Anti-Fraud Network to prove that transactions going through are accurate and reliable. This will enable key innovations like programmable token bridges and various cross-chain bridges built by people in the Chainlink community and ecosystem. These cross-chain applications and smart contracts can all still be used from existing interfaces, wallets, and systems, as well as various enterprises and current web 2.0 systems.

This will complete the three categories of what the Chainlink Network and decentralized oracle networks do generally. Going from the provision of validated data to off-chain computation, and then to cross-chain communications such that you will be able to send messages between contracts for them to use each other's services. You will be able to send tokens between contracts with minimal additional work, giving rise to cross-chain smart contracts that are enabled by highly validated data and bolstered by the ability to get random numbers, keepers computations, and various other advanced computations such as FSS.

This is where the Chainlink Network is going—combatting various issues and providing clear cryptographic guarantees to users. Decentralized oracle networks provide a unique type of value to their developers and developers' users, heralding an entirely new category of more advanced hybrid smart contracts. We've seen how initial versions of highly validated data, randomness, and off-chain computation jumpstart more advanced DeFi contracts, but really that is just the beginning. This can be expanded far beyond that, in the same way that the web world initially received some of its key services, which resulted in an explosion in services driven by the demand created by applications.

Start building with Chainlink today by visiting the developer documentation, joining the technical discussion on Discord, and/or reaching out to an expert.

To learn more about Chainlink, visit the Chainlink website and follow the official Chainlink Twitter to keep up with the latest Chainlink news and announcements.

Related posts

Education

What Is a Dynamic NFT?

Learn what dynamic NFTs are, why they're useful, and how they're expanding the NFT design space.

Read more

Education

How Chainlink Powers Decentralized Governance

A blog post exploring how DAOs can leverage Chainlink to further transparency, decentralization, and automation.

Read more

Education

Cryptographic Truth: The Future of Trust-Minimized Computing and Record-Keeping

In this deep dive, learn the fundamentals of cryptography, game design, and how blockchains and oracles combine to enable a global truth machine.

Read more

Community

Join a forward looking group of smart contract enthusiasts.

Press

Read the latest Chainlink news and media features.

Stay updated on the latest Chainlink news

☐ Yes, I agree to receive email communications from Chainlink.*

Sign up

Developers

Docs

Developer resources

Developer experts

APPLY

Bootcamp

Using Data Feeds

Using Randomness

Using Chainlink Keepers

Using Any API

Node operators

Products

Market and Data Feeds

VRF

Keepers

Proof of Reserve

Cross-Chain Bridging

Use Cases

Overview

DeFi

Enterprise

Insurance

NFT and Gaming

Community

Community overview

Grant program

Events

Become an advocate

Code of conduct

Resources

Whitepaper

Blog

What Is DeFi?

What Is an Oracle?

Chainlink

Ecosystem

Data Providers

Press

Team

Contact

Talk to an expert

Security

Support

Custom Chainlinks

Social

Twitter

YouTube

Discord

Telegram

What Is a Smart Contract?

Brand assets

Press inquiries

WeChat

FAQs

Reddit

What Is an NFT?

Kakao

What Is the Metaverse?

What Is Web3?

Chainlink

Chainlink®   © 2022 SmartContract

Privacy Policy   Terms of Use

Chainlink Ltd SEZC