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Coadjute Case Study

The Next Generation of Property Market Infrastructure

Powered by **Corda**, Coadjute's DLT network connects the existing software of the property market to enable multi-party workflows and tokenization of funds and titles. **The Coadjute Network** opens the door to a new era of collaboration, speed and security in real estate transactions and mortgage settlements.

> "Moving home is one of the biggest and most important transactions many people will do in their lives. Our goal is to make the process faster and easier, with confidentially and security critical considerations. This is why we have built our network using R3's financial-grade trust technology, because we believe people's data should be treated as safely and securely as their money.

Dan Salmons,
CEO, Coadjute

COADJUTE®

About Coadjute

Coadjute is a property technology business headquartered in London. Their Coadjute Network is an open network that connects the parties involved in residential property transactions using Corda, cutting the cost and increasing the speed of property deals. Formed in 2018 following a blockchain trial with the UK's HM Land Registry, Coadjute connects the parties involved in residential property transactions through their existing software, improving communication and collaboration throughout the end-to-end process. The Coadjute Network went live in Summer 2021 and is rolling out across the UK.

The industry problem

Residential property transactions in the UK often take five months and almost one-third don't reach completion. Although today's property market is largely digitized, it lacks integrated, unified digital capabilities that reflect the industry's pivotal role in the wider property ecosystem. The majority of legal advisors have a case management system and most real estate agents some type of customer relationship management system.

Yet, as the end-to-end property process involves many businesses, the fact that each player's systems are siloed and aren't interoperable means there's no shared source of truth. The result is that no participant has complete visibility over the process, and constant human intervention is needed to keep it on track. These disconnected systems and processes mean every participant must expend valuable time and money chasing, sharing and checking information.

The solution

The Coadjute Network is an open property market infrastructure that connects the various systems and software applications used across the residential housing market value chain. It enables users across businesses using different systems to participate seamlessly in the end-to-end process of managing and completing property transactions. The Digital Completion APIs enable mortgage lenders to transfer money to other participants, issue tokenized money, sign transactions, accept redemption claims and destroy tokens after redemption.

Results

Coadjute's goal is to transform the process of buying and selling residential property, shortening the time it takes by a projected 50%, improving efficiency and security for the industry, and providing a better experience for buyers and sellers. Coadjute's Digital Completion capability aims to bring a single source of truth on completion, reducing fraud and streamlining reconciliation. The Coadjute Network is now live in the UK property market and rolling out nationally. Coadjute is launching a Digital Completion Sandbox in partnership with R3, and leading banking software and legal services providers. Coadjute's Sandbox provides a learning and development platform for Digital Completion, including the digital tokenization of money and titles. It enables mortgage lenders, conveyancers, brokers, the UK's HM Land Registry and other participants to run individual experiments, and also to collaborate in a close-to-production pilot of the next generation of property market infrastructure.

The pain point

An urgent need for digital connectivity in the property transaction value chain

Today, property transactions are plagued by inefficiency. A transaction typically requires multiple untrusting parties to collaborate in a complicated process that eventually concludes with the exchange of funds and the transfer of property title.

There are four stages of a property transaction process.

- **Offer:** Sales and marketing of the property; ends with an accepted formal offer

- **Exchange:** Complete searches, due diligence, and draft contracts; ends with an exchange of contracts

- **Completion:** Prepare financial transaction; completion occurs with the exchange of funds

- **Post-completion:** Records title transfer documents to Land Registry; ends with the update of title
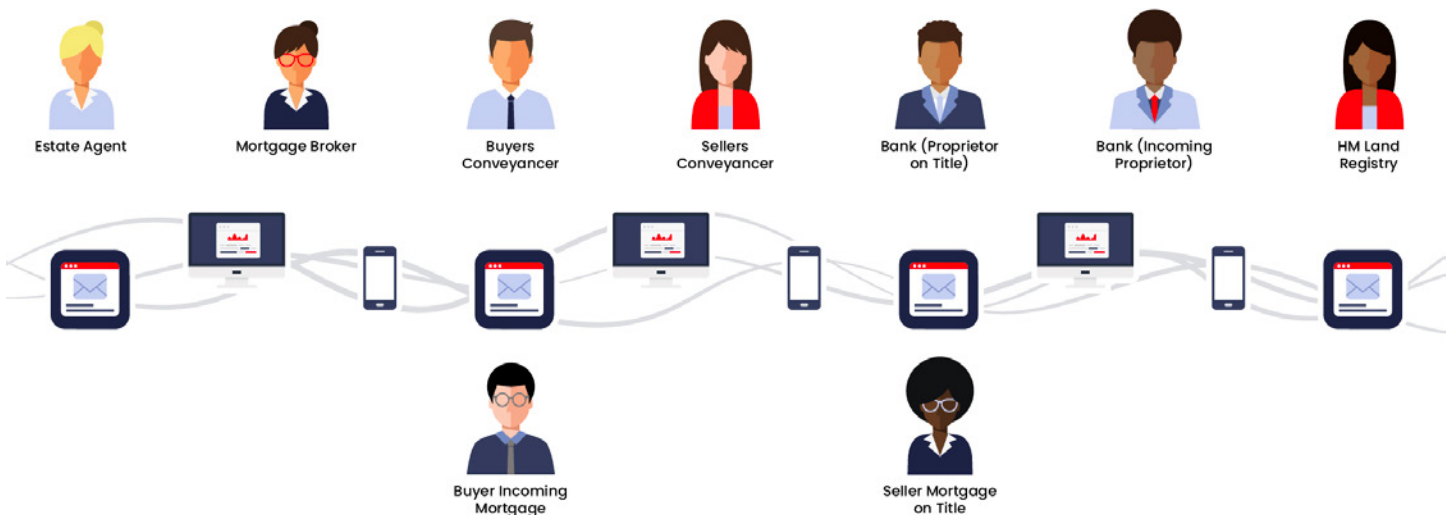
The key parties involved in the transaction include the buyer, the buyers mortgage lender, the seller and the seller's mortgage lender. However, there are other parties that provide services to support the transaction. These include real estate agencies, legal firms, mortgage brokers (intermediaries), surveyors and the land registry.

The problems arise from the transaction lifecycle taking place on siloed internal systems across multiple businesses. Although today's property market is largely digitized, it lacks integrated, unified digital capabilities that reflect the industry's pivotal role in the wider property ecosystem. When a part of the transaction process is contained within a single business, it is often digitized and automated. For example, most real estate agents use some form of customer relationship management system and most legal advisors have some sort of case management system. But then, each business involved in the transaction stores their own data and maintains it separately from the others. Inevitably, this siloed data is inconsistent.

Without a single source of truth, every party has an incomplete view of what is happening with the transaction. The result is a fragmented and opaque transaction process. And because there is currently no way of seamlessly traversing multiple businesses and internal systems, the process breaks down.

Human intervention is required to synchronize and align data, and to ensure that the transaction progresses. These interventions occur at numerous standalone portals, point-to-point application programming interfaces (APIs), email, telephone, and in some cases, fax. The result is that all parties waste time exchanging and reconciling data.

Figure 1: A broken multi-party process dominated by fragmented communication channels and manual processes.

Estate Agent   Mortgage Broker   Buyers Conveyancer   Sellers Conveyancer   Bank (Proprietor on Title)   Bank (Incoming Proprietor)   HM Land Registry

Buyer Incoming Mortgage   Seller Mortgage on Title

Delivering the solution

A next generation property market infrastructure

When Coadjute set out to build a solution for property markets, they recognized its decentralized nature. And although communication between parties could be facilitated by a traditional centralized database, Coadjute found issues with ownership and operation in the trustless environment of the property market. This led Coadjute to instead consider DLT, where each party can retain and control its own data. Coadjute then explored public blockchains but given the potential issues around privacy, security and transaction cost fluctuations, the company knew it needed a permissioned, enterprise-grade DLT.

Corda was built to meet the exacting requirements of regulated markets. The deciding factors for Coadjute included its unrivalled privacy and confidentiality, unique flow framework to easily automate business processes and true peer-to-peer transactions—where transaction data can only be seen by and validated between the parties involved. Coadjute CEO Dan Salmons explains, "When we're talking to banks and other parties in the property market about a network that provides secure connectivity, to be able to say that it involves Corda—a highly credible technology that's already used by many of the major banks around the world—it brings real credibility to what we're doing, and real confidence in the security of our solution."

By enabling the various systems in the residential property ecosystem to connect, communicate and exchange information in a secure, trusted, and confidential way, the Coadjute Network creates an integrated and transparent end-to-end transaction process across all participants. The Coadjute Network does this through features accessed via open APIs and embedded in the existing software used by market players. It's a distributed system where all data sits with the parties using the network and is securely synchronized and shared peer-to-peer. So, while Coadjute can provide a hosting service, it never needs to see the data.

Coadjute's Core capability acts as the connectivity layer. Its core APIs provide users with collaboration and synchronization services, including: connecting with other companies and users; creating deals with partners in private workspaces; publishing and subscribing to transaction-related events; achieving multi-party consensus around changes to key deal facts; secure messaging within property deals; and secure document exchange.

The Coadjute Digital Completion capability connects the software that mortgage lenders, their customers and other businesses use to secure the network's virtual shared ledger. The Digital Completion APIs enable mortgage lenders to easily transfer money to other participants, issue tokenized money, sign transactions, accept redemption claims and destroy tokens after redemption.

Connecting the parties involved in a property transaction, as well as the businesses that support them, to a shared ledger enables four new capabilities (covered in the subsections below). The Coadjute common and shared property market infrastructure underpins these capabilities, unlocking the opportunity for dramatic innovation and transformation within the property industry.

> We chose Corda because it is financial grade, used by the leading banks, and therefore has the highest levels of privacy and confidentiality, which is really important.
>
> **John Reynolds,**
> **COO, Coadjute**

Figure 2: Coadjute property market powered by Corda
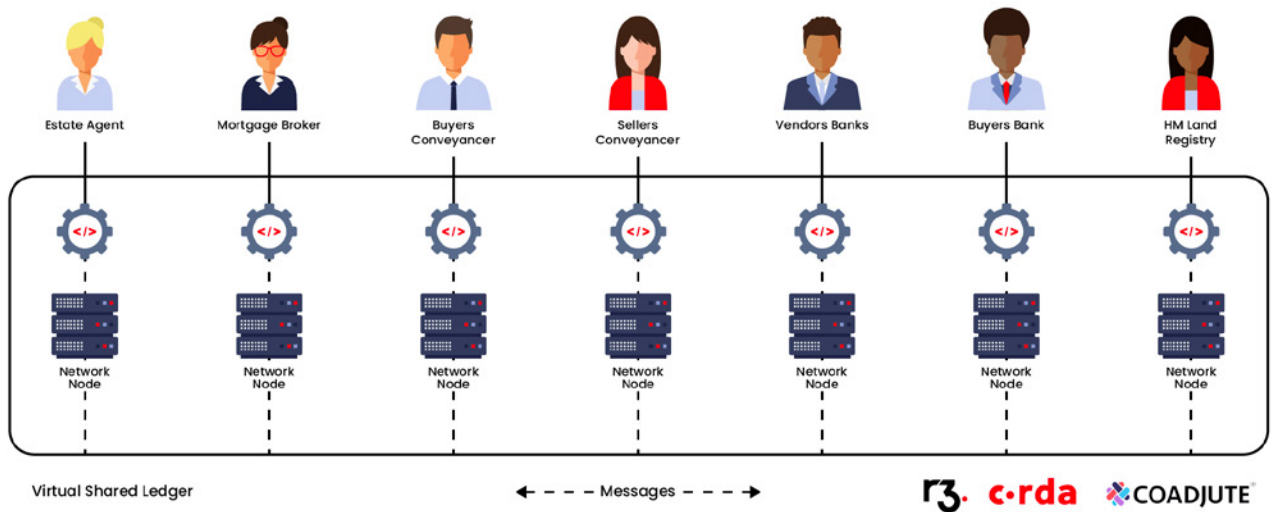

1. Multi-party workflow

A property transaction involves multiple parties, as well as the businesses that support them. Each organization has its own internal systems with unique business processes. At present, there is no way to connect these systems to each other. Without a single source of truth, the transaction process becomes riddled with inefficiencies, which in turn creates unnecessary costs and risks.

The Coadjute Network connects the software that runs the property market to create a shared version of the truth. Users of connected systems can then participate in shared property transactions from within their existing operational software. For the first time, all the parties involved in a transaction know that the details they see are the same as their counterparty.

A shared network among all the participants in a property transaction makes for far more effective collaboration and provides a single source of truth for the transaction process. Utilizing Corda's flow framework, the process can traverse multiple organizations in a real-time, multi-party workflow.

Figure 3: A better way to collaborate with a synchronized multi-party workflow
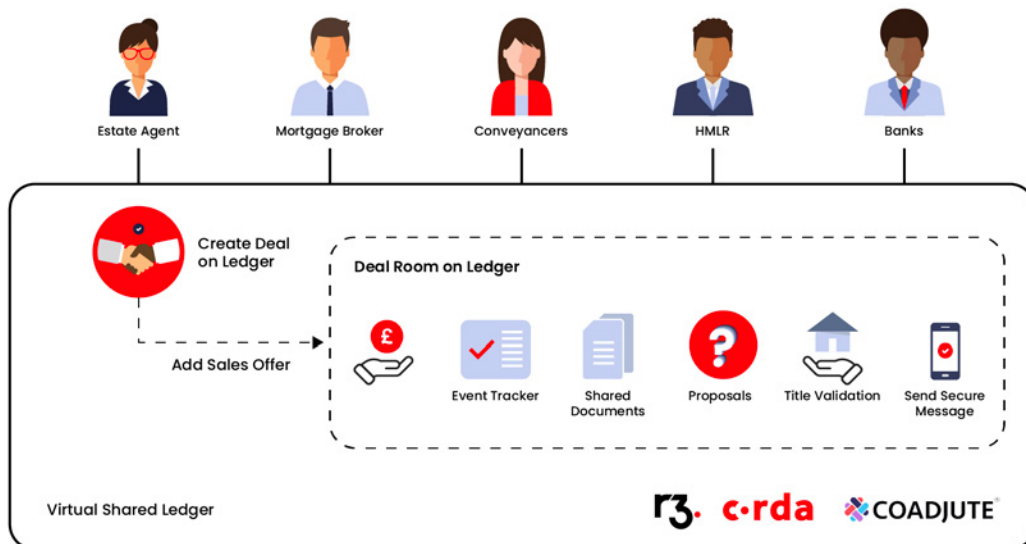
2. Digital currency

In the past few years, money has been going through a digital transformation. We can see this development across the globe in initiatives such as Alipay, Libra, Digital Yuan, USD Coin and WeChat Pay. At the same time, central banks are responding to the surge in e-money and stablecoins by exploring how they might offer central bank digital currencies (CBDCs).

Electronic money (e-money) is broadly defined by the European Central Bank (ECB) as 'an electronic store of monetary value on a technical device that may be widely used for making payments to entities other than the e-money issuer'. Tokens issued on a DLT network that are backed by cash in either a central or commercial bank are known as stablecoins.

The Coadjute Network uses the Corda's Tokens SDK to enable the issuance of stablecoins to support the mortgage completion process.

1. **Pledge**—Deposit and lock funds in an account

2. **Issue Tokens**—1:1 claim on fiat balanced in a deposit account

3. **Transfer**—Transfer tokens to the recipient on the DLT network

4. **Redeem**—Holder of tokens redeem for deposit account balances

5. **Destroy**—Tokens are burned

Digital currencies on The Coadjute Network have many advantages for the property markets, including:

- **Convenience:** Embedded into services that businesses and consumers are using

- **Security:** Can define the specific purposes for which funds can be used

- **Lower transaction costs:** Transfers in e-money on DLT are low cost and real-time

- **Extendable:** API-driven to enable developers to extend the functionality the payment

- **Complementary:** Can interoperate with digital assets to enable Delivery vs Payment

The inherent advantages of digital currencies provide a new opportunity to streamline and de-risk the settlement or completion part of the transaction where money moves between parties.
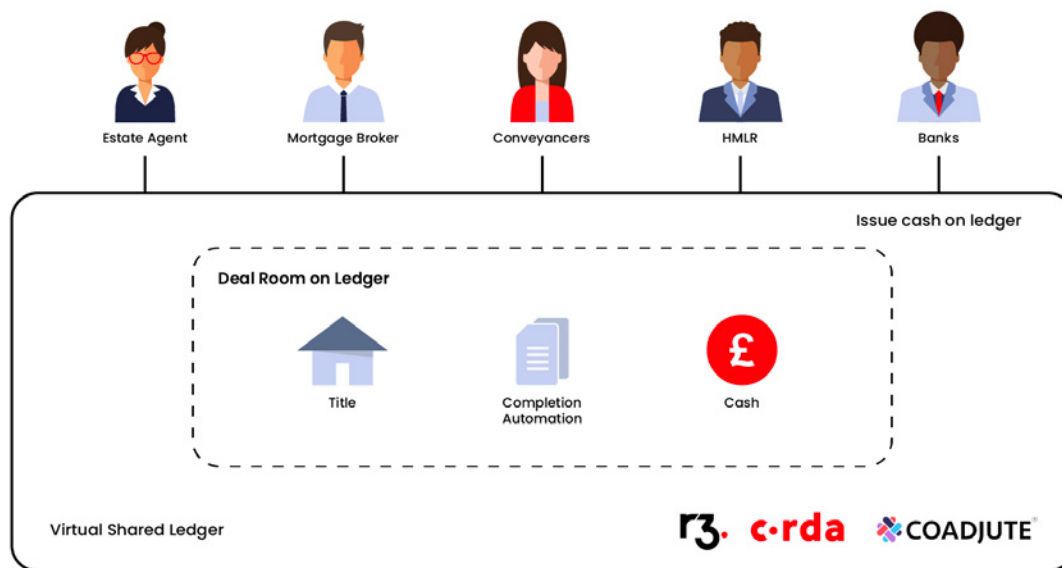
3. Digital completion

In today's property transaction process, inefficiencies are most pronounced at the completion phase: the stage at which money is exchanged. Every year, over £240b of cash related to property transactions moves around the UK banking system. It seems surprising then, that there is no common infrastructure available for managing these transfers.

A typical UK property transaction involves eight main flows. These flows also involve smaller flows, such as payment for identity, HM Land Registry or data services.

1. Buyer transfers funds to their conveyancer

2. Buyer's lender transfers funds to buyer's conveyancer

3. Buyer's conveyancer pays funds to vendor's conveyancer

4. Buyer's conveyancer pays HMRC SDLT

5. Seller's conveyancer pays vendor's lender

6. Seller's conveyancer transfers funds to vendor

7. Seller's conveyancer pays estate agent

8. Seller pays capital gains to HMRC

Each of the parties in the process above spend most of their time preparing, orchestrating and validating payment flows by telephone and email. They have no shared means of preparing and executing the movement of money. This creates problems with efficiency, fraud, completion and delays.

The Coadjute Network's Digital Completion capability unlocks a handful of benefits in a property transaction. The capability significantly reduces the cost of completing property transactions on ledger verses traditional payments rails. For banks, the capability transforms liquidity management by providing greater transparency of liquidity positions and forecasts concerning mortgage inflows and outflows. Digital Completion also increases the efficiency of transaction netting, reducing processing time and cost.

Corda's identity capabilities follow regulated markets standards to provide further robustness to the Coadjute Network by ensuring participants only transact with known identities.

Digital Completion enabled by digital currencies issued onto the Coadjute Network will power the next-generation of real-time digital completion applications and processes. The Network's single source of truth reduces risk of fraud, delays from reconciliations and fund confirmations, removes excess costs, improves availability and transforms the customer experience.

4. Digital titles and value exchange

The exchange of titles in today's property transaction takes place long after the funds exchange hands and the new owner has moved in. The process involves a request to update the title being submitted to HM Land Registry, who then must manually verify that the transaction is valid.

To solve this, Coadjute collaborated with the HM Land Registry in their Digital Street Project. The project explored how a tokenized title issued onto a DLT could make the home buying process simpler, faster and cheaper. The project found that locking the title on the central register and issuing a tokenized version for use during a property transaction would significantly speed up the process, enabling the Land Registry to have transparency of the transaction lifecycle.

A title tokenization process consists of the following five steps.

1. **Lock:** A land registry locks the title on the centralized register

2. **Issue:** A land registry issues the token onto the ledger as a representation of the title held on the central register. The token is programmed with the conditions of transfer e.g., the checks that the land registry requires prior to updating the central register

3. **Transfer:** The tokens are transferred to the seller's conveyancers or other third parties managing the process (soon this could be a consumer wallet)

4. **Transact:** Participants in the network transfer the token from seller to buyer as part of the digital completion process

5. **Destroy:** The land registry destroys the token and unlocks the central register

From the Digital Street Project and other industry pilots, Coadjute identified tokenized titles as a critical feature of the future property market infrastructure. The Coadjute Network uses Corda's SDKs and frameworks to enable multi-party workflows and programable compliance and issuance for tokenized titles. Coadjute has found that tokenized titles reduce costs, combine completion and post-completion activities, allow real-time atomic settlement and remove post-completion queries.

To initiate market wide implementation of tokenized titles, Coajute is launching a Digital Completion Sandox. The sandbox is a learning and development environment for the tokenization of money and titles for mortgage lenders, conveyancers, brokers, the UK's HM Land Registry and other participants.

The results achieved

A single source of truth for the property market

Coadjute's goal is to transform the process of buying and selling residential property, shortening the time it takes by a projected 50%. This acceleration will be driven both by the connectivity provided by the Coadjute Network and the innovation that this connectivity will enable across the ecosystem. Along with higher speed, Coadjute's Core capability also brings many further benefits—including an improved customer experience, lower costs, increased operational efficiency and a reduction in the number of deals falling through.

Coadjute's Digital Completion capability brings a single source of truth on completion—reducing fraud through an authorized push payment application, and streamlining reconciliation with funds assigned against agreed payment requests. Having a single source of truth between participants also removes days from the funds confirmation process, enabling transaction to be processed 24/7. For banks, the improvements come at the liquidity management level with more accurate mortgage forecast flows, improved transaction netting and known identities through Corda's confidential identity capabilities.

Next steps

Continuing to onboard the UK property market

Enterprise-grade DLT technology is transforming whole industries, by enabling the tokenization of assets and cash and the execution of seamless, real-time trade flows across businesses and borders. Real estate markets around the world are no different, and Coadjute believe they can be radically transformed by the collaborative power of DLT networks. By bringing together the property ecosystem and hosting digital assets and digital money to facilitate secure and friction-free property transactions, Coadjute plans to be at the front of that transformation.

Looking forward, Coadjute is launching a Digital Completion Sandbox in partnership with R3 and leading banking software and legal services providers. Coadjute's Sandbox provides a learning and development platform for digital completion, including the digital tokenization of money and titles. It enables mortgage lenders, conveyancers, brokers, the UK's HM Land Registry and other participants to run individual experiments, and also to collaborate in a close-to-production pilot of the next generation of property market infrastructure.

After decades of struggling with the current system, Corda's multi-party workflows and asset tokenization capabilities are opening the way to the next generation of property market infrastructure. The effects will transform the efficiency of every business that touches the property market lifecycle.

How to join the Coadjute Network

Connect to a live network or join the digital completion sandbox

The Coadjute Network launched in June 2021, and at the time of writing, is completing beta testing prior to national rollout in late-2021. Demand is significant, and the software platforms used by around two-thirds of UK real estate companies and a significant proportion of legal conveyancers have already signed up to join the network.

Coadjute is now working with players in the mortgage broking and lending market, with a particular focus on the digitization of the completion process. They plan to enable the parties involved in the completion of the transaction, in particular, mortgage lenders, to use stablecoins to facilitate faster reconciliations, payments and confirmations, reducing fraud and beginning the transition to an automated, round the clock infrastructure for completion

Lenders interested in taking part in the Digital Completion Sandbox can contact Coadjute at **Sandbox@coadjute.com**

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About R3

R3 is a leading provider of enterprise technology and services that enable direct, digital collaboration in regulated industries where trust is critical. Multi-party solutions developed on our platforms harness the "Power of 3"—R3's trust technology, connected networks and regulated markets expertise—to drive market innovation and improve processes in banking, capital markets, global trade and insurance.

As one of the first companies to deliver both a private, distributed ledger technology (DLT) application platform and confidential computing technology, R3 empowers institutions to realize the full potential of direct digital collaboration. We maintain one of the largest DLT production ecosystems in the world connecting over 400 institutions, including global systems integrators, cloud providers, technology firms, software vendors, corporates, regulators, and financial institutions from the public and private sectors.

For more information, visit **www.r3.com** or connect with us on **Twitter** or **LinkedIn**.

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