Security and Open Finance

How to protect financial data

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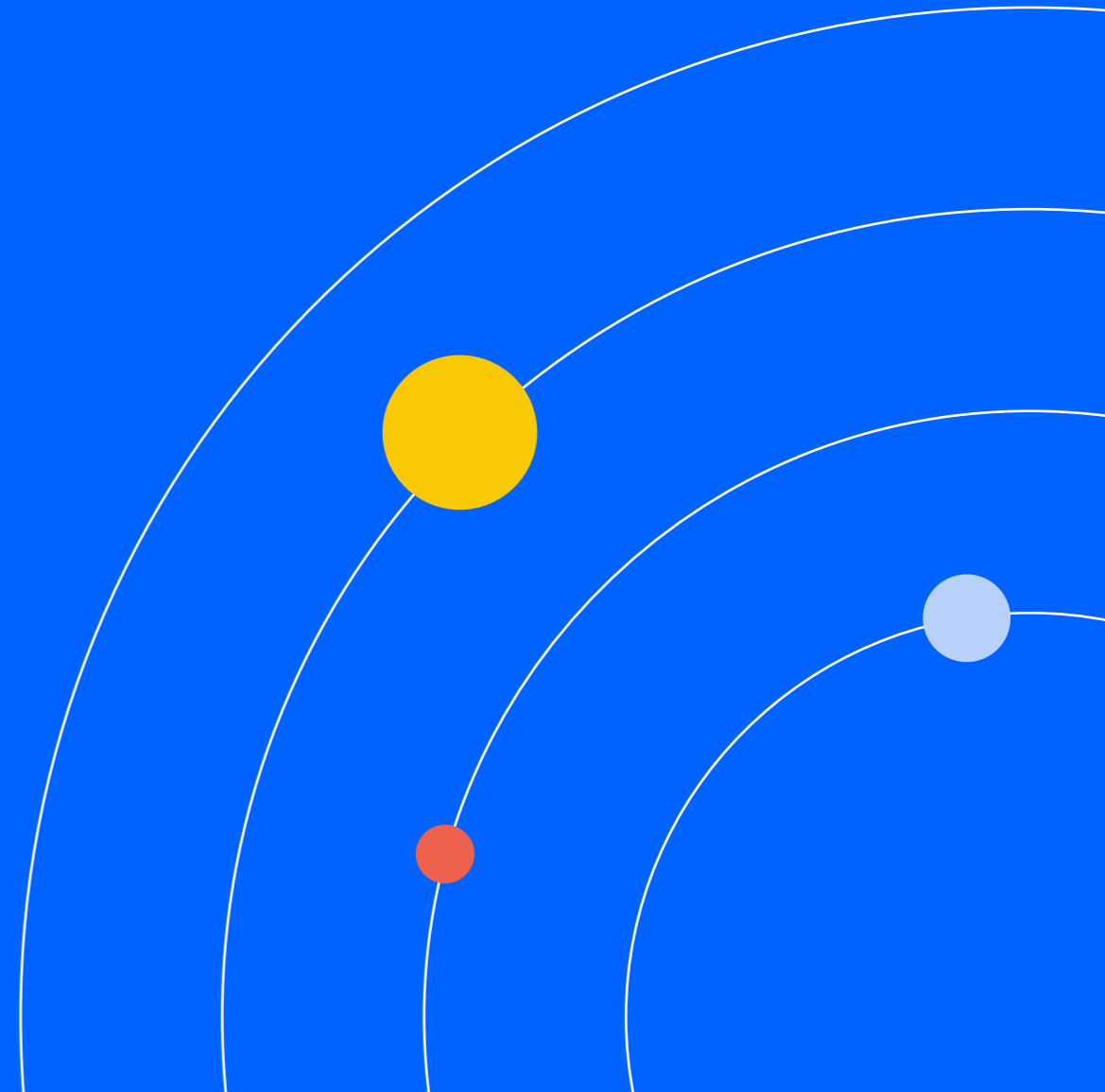
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Belvo, accelerating the adoption of Open Finance in Latin America

The leading Open Finance APIs platform in Latin America

Belvo is the leading Open Finance API platform in Latin America enabling **fintechs and innovative financial institutions** to connect, interpret, and enrich their users' financial data.

Our API platform provides connections with more than 50 financial institutions, c**overing more than 90% of personal and business bank accounts** in Mexico, Brazil, and Colombia, as well as with tax authorities such as SAT and gig economy platforms such as Uber and Rappi.

Fast-growing innovative financial companies in the region such as credit providers, **personal finance management apps and accounting platforms** already use our APIs to create more efficient, inclusive, and modern services.

What is Open Finance?

But what is **Open Finance**? It is a new data-sharing model that arises in the financial sector as a **step after Open Banking**. This model, promoted **in many countries through regulation**, facilitates third-party access to users' banking information through APIs to create new products and services.

However, in Latin America, this regulation **is still in the development stages** and banks are not yet required to make their APIs public for companies that want to access this data in most countries.

At Belvo, we want to accelerate the arrival of these models through our own API platform. We also aim to **expand its reach to other sources of financial information** beyond banks, such as tax authorities or collaborative economy platforms such as Uber or Rappi.

This is what's called Open Finance: a model with the potential to generate a **truly inclusive democratization of financial services**, thanks to which users have the ease and security necessary to share their financial data - banking and non-banking - to access a greater range of services at their disposal.

Security, the key to the success of Open Finance

To make this scenario possible, we know that security **is an absolutely essential element** and one on which its adoption by companies and users depends to be successful.

For this reason, at Belvo we have created a series of pioneering technological tools that allow **users to safely share their credentials** with our clients to facilitate the access and interpretation of their financial information.

Data management and encryption are the cornerstones of our platform. In addition, as part of our commitment to the strictest security protocols, we follow **the most recognized and widely used bank-grade standards** and adhere to and comply with international privacy, security, and regulatory best practices.

2

How Belvo works

belvo.

Secure connection with users' financial data

Belvo works as **an intermediary** that facilitates the connection and secure transmission of data between a company, its users, and the financial institution where they host their financial information.

Once that you have implemented Belvo, your users will be able to connect their **accounts from banks, tax entities, or platforms such as Uber or Rappi** to your application in a matter of seconds.

> To create this connection, your users have to share their credentials through your application with the Belvo API. We **encrypt and store** these credentials securely and use them to access the account in read-only mode.

Once that this secure connection is created between your application and your user's institution account through Belvo, you will be able to automatically receive updated financial information that **is relevant to your business model**. This includes data about their accounts, real-time balance, transaction information, invoices, income, etc.
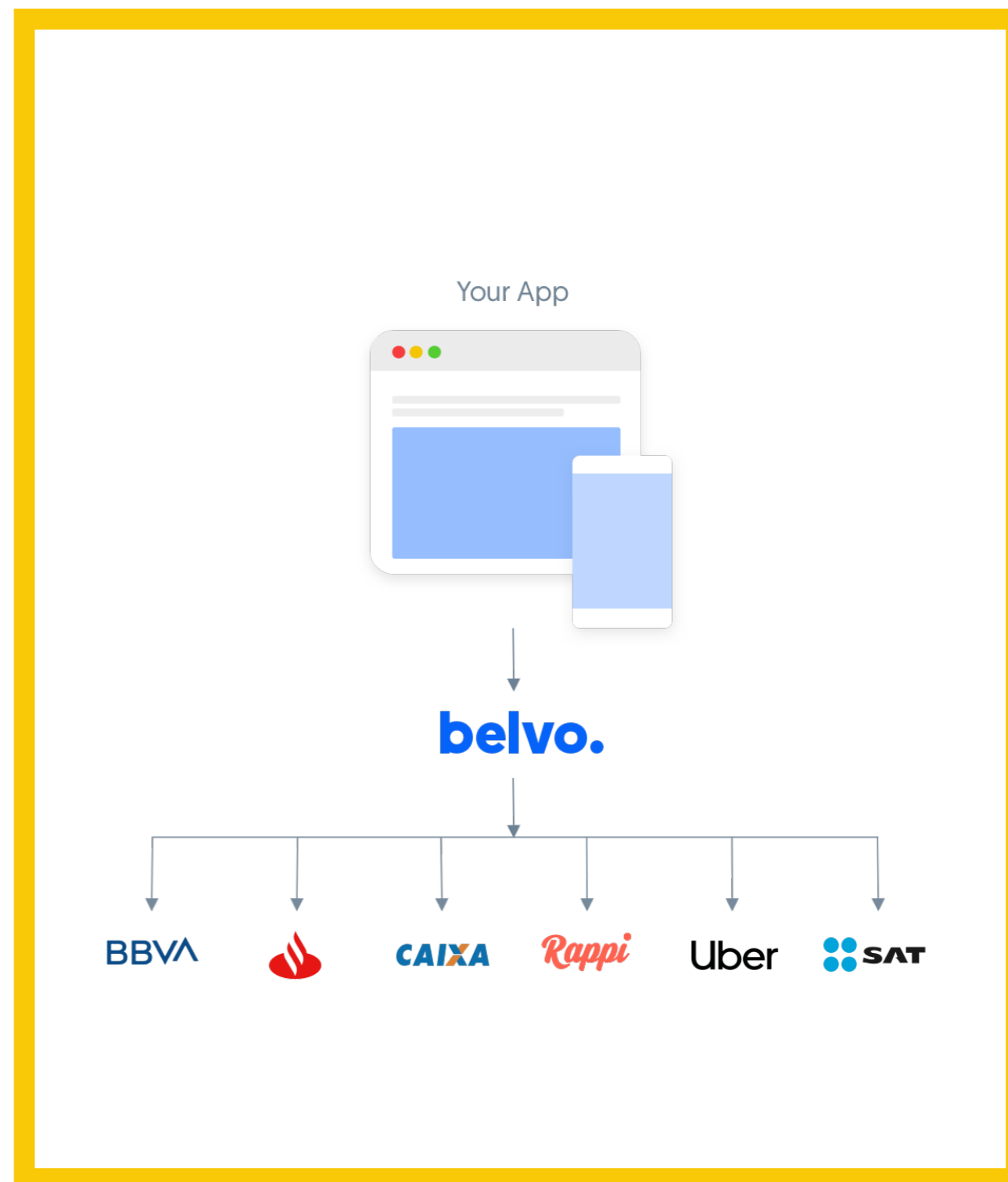
Belvo Connect Widget: a user-friendly interface to connect accounts in seconds

To facilitate the integration of our API in your application, we have developed our own user authentication interface: the Belvo Connect Widget.

This tool combines the best user experience and security practices, guaranteeing **the highest conversion rates** when connecting accounts. It is a customizable tool, that works with both

mobile and web applications, and that can be implemented in just a few hours with a few lines of code.

Customers can also choose to develop their own interface to help users to connect their accounts, but **using our widget will allow you** to save time in developing your solution.

Here you can see a demo of how our Connect Widget works.
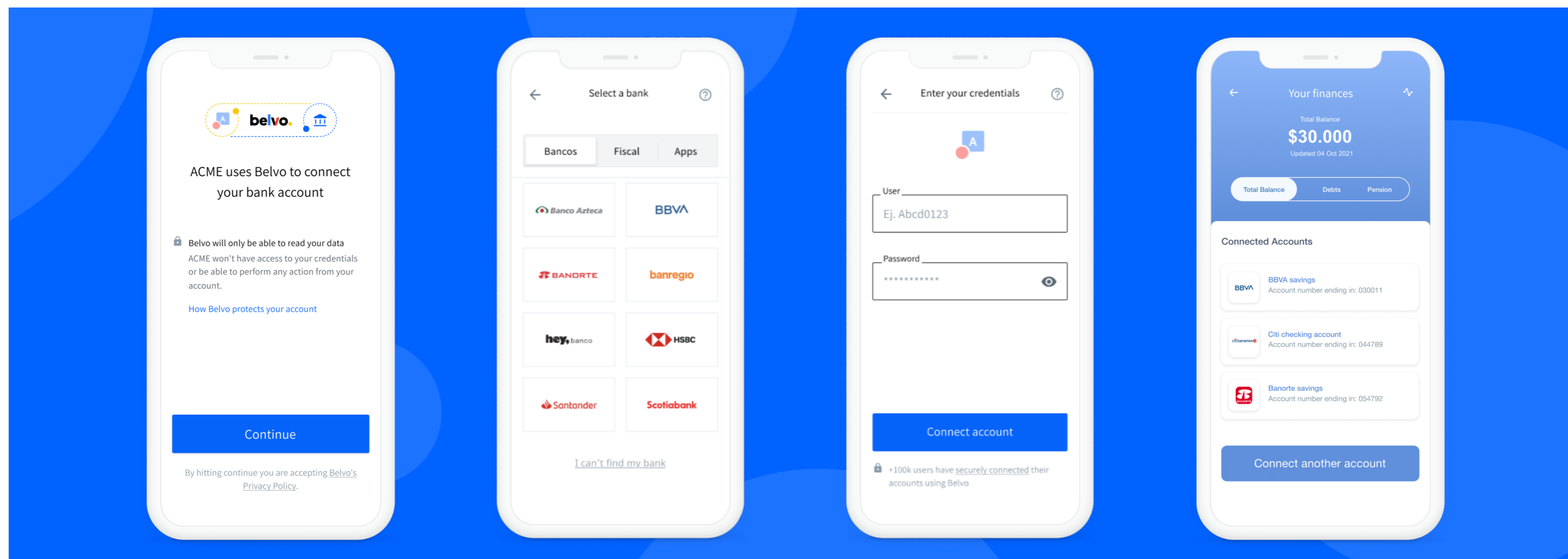
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How we protect banking credentials

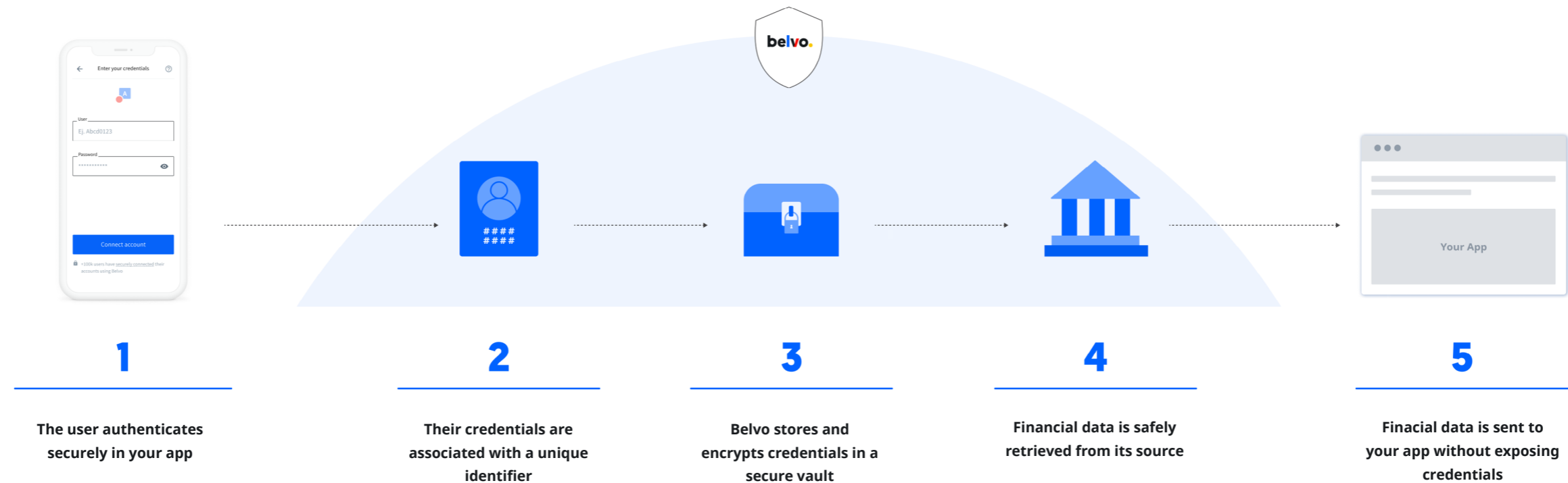## Securely connect to your users' financial data

Our platform has been developed from scratch to ensure that the process of connecting accounts and extracting financial data is carried out **under the strictest security** and privacy standards.

User data **never enters or leaves Belvo without being encrypted** using advanced cryptography mechanisms, both in transit (when the data travels from one application to another), and at rest (when it is stored in our private vault).

We **take care of managing the storage, encryption, and processing** of data and credentials so that you do not have to.

How we protect financial data, step by step

Let's look at the flow that takes place to connect users' financial accounts with a platform through Belvo, step by step. And how security is part of each of the end-to-end process:

1

The user authenticates securely in your app

2

Their credentials are associated with a unique identifier

3

Belvo stores and encrypts credentials in a secure vault

4

Financial data is safely retrieved from its source

5

Finacial data is sent to your app without exposing credentials

1.

The user authenticates securely in your app

To start using Belvo to extract financial data, your application will need to request an **access token** from Belvo. This request will go through a secure and authenticated channel thanks to the API keys that you have previously generated in our dashboard.

Once that the token is obtained, it will be sent to your mobile application and used **to open the Connect Widget**, request the user's credentials, and link their account for the first time.

From this moment on, the Connect Widget that is embedded into your application **will be able to communicate directly with the Belvo backend**. Thanks to this, your app won't have to manage bank credentials, leaving this task to Belvo.
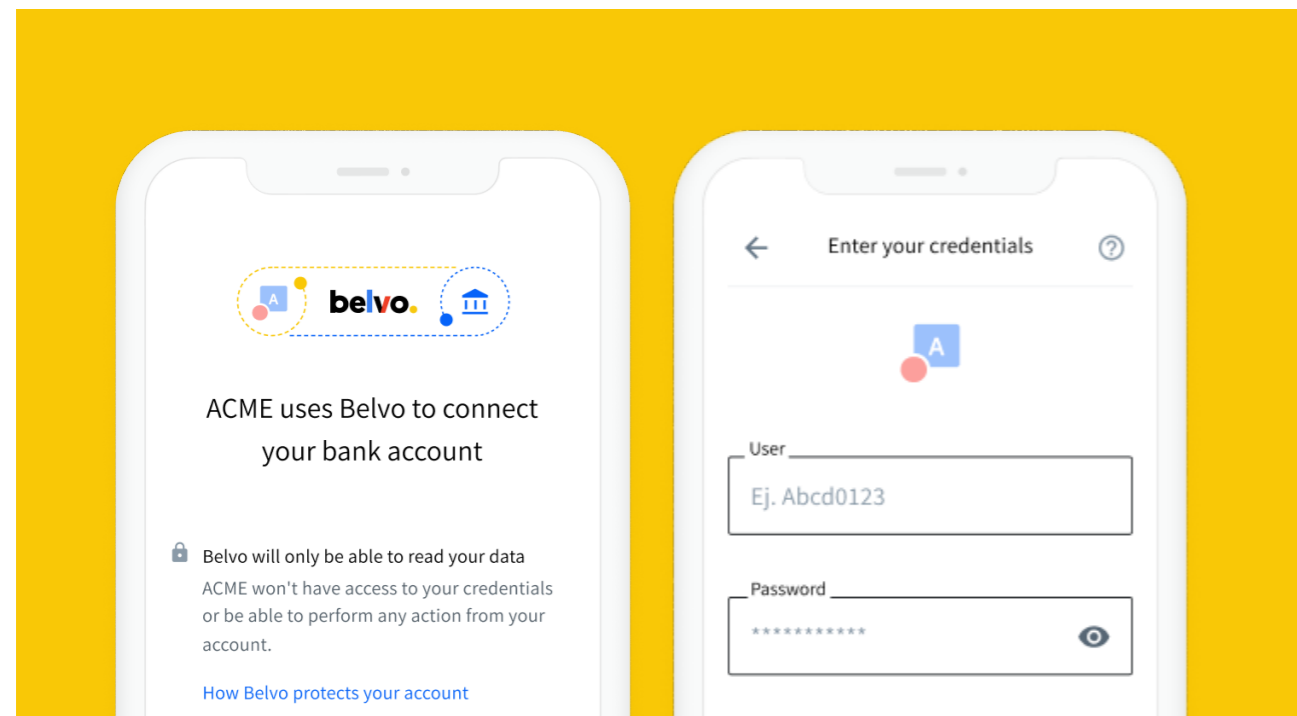
2.

The credentials are transformed into a unique identifier

Once this secure communication channel is created, the user's credentials are stored and encrypted in a secure vault on Belvo's servers, and a **random unique identifier** is generated from them, which is used to communicate with your application through an encrypted channel.

This way, your users' credentials **will never have to travel** directly between your application and Belvo. Instead, this alias or random unique identifier (called Link ID) will do it.

Every time you make a request to retrieve a user's data, the unique identifier will help **our platform identify which user the request corresponds to**, without having to reveal their credentials, which will remain encrypted and stored in our vault..
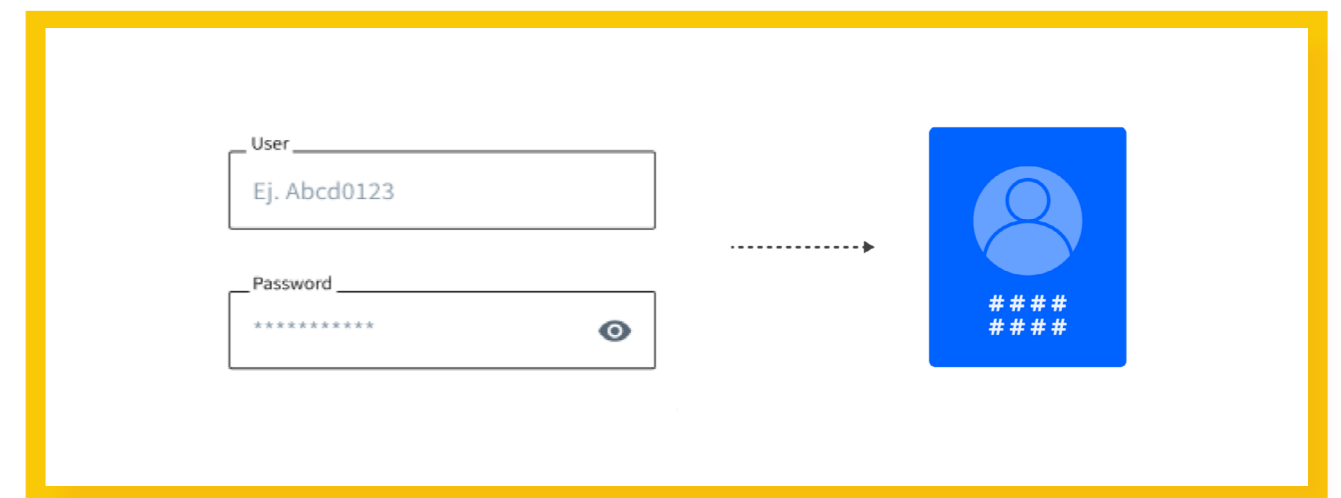
3.

Secure credential storage with symmetric AES encryption

To store credentials securely on our servers, Belvo employs a series of encryption mechanisms, including the AES-256 symmetric encryption technique.

This standard recommended by the NIST (National Institute of Standards and Technology) guarantees that the information is **never stored in plain text**, but is transformed into alphanumeric codes that are impossible to decipher without the proper level of authorization.

Additionally, to ensure that these codes can only be decrypted in a controlled manner, Belvo uses the Amazon Web Services (AWS) KMS system. This mechanism ensures that not only the data itself is encrypted, but **also that the keys that allow decrypting this information never leave Belvo's infrastructure**.

AWS KMS enables this by acting as a central repository, which governs and stores the necessary keys and **only allows decryption operations to those roles that have sufficient permissions** to do so.
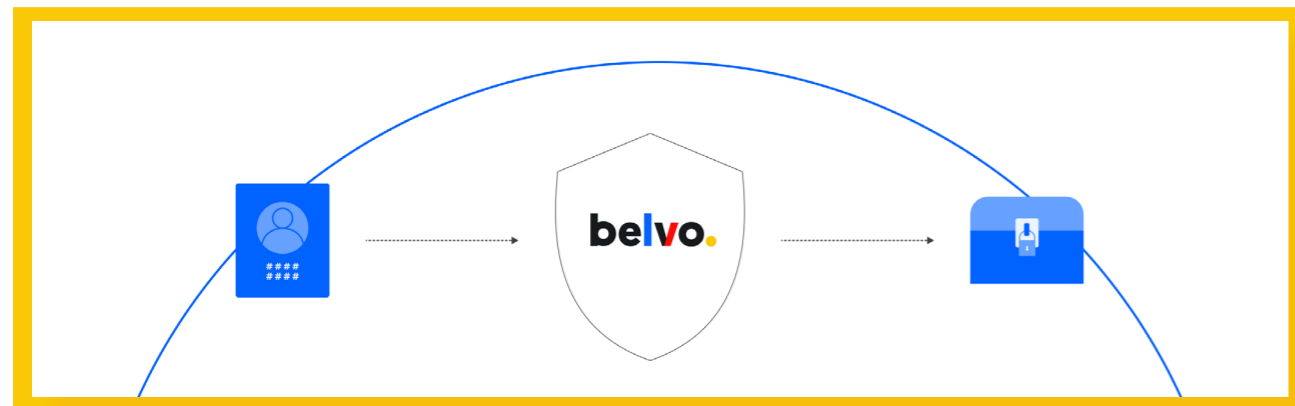
4.

Secure data recovery through a unique identifier

Finally, once the Connect Widget and our API platform have generated the Link ID and the credentials have been stored and encrypted on our servers; your platform will be able to **start making requests to our API**.

When this happens, your application will tell the Belvo API for which unique identifier it is necessary to retrieve financial data. Only at this moment, our platform will **safely access the financial institution**, retrieve the necessary data and will send it back to your application so that it can be processed and presented to the user.

How does Belvo connect to data sources to retrieve data?

Belvo employs its own technology and takes a **novel approach to financial data recovery**. Our technology is based on access to the underlying APIs used by mobile banking applications and online banking websites.

This is in contrast to 'screen scraping', which is a less sophisticated approach that relies on mimicking website navigation, which is slower, more fragile, and prone to errors.

The advantages of our approach are:

- **Performance and speed.** We offer best in class performance and sync speed, thanks to direct API connections.

- **Reliability.** Belvo is less susceptible to changes that happen on the websites and frontend interfaces of the data sources we connect to.

- **Success rates.** We are able to offer an overall superior data retrieval success rate thanks to our direct API-driven approach.

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Security measures at Belvo

ISO 27001 Certification

Belvo is **the only Open Finance API platform** in Latin America that is ISO 27001 certified.

> This certificate, issued by an external auditor, certifies that Belvo complies with **more than 100 security** requirements that the International Organization for Standardization (ISO) defines for the implementation of an Information Security Management System

ISO 27001 **covers all of our company's operations**, including all product lines, processes, human resources security, data management, communications, and supply chain management.

How we have obtained ISO 27001

In order to obtain this certificate, Belvo has undergone a series of external and internal audits that corroborate that **the company complies with all of the requirements** demanded by ISO. These include a set of processes, policies, and mechanisms that guarantee that the information is processed following these three principles:

- **Confidentiality:** through mechanisms that prevent the leakage of private information outside of the organisation.
- **Integrity:** through mechanisms that ensure that the information is stored without the risk of loss of information.
- **Availability:** through mechanisms that prove that the infrastructure is not only secure but also guarantees access to information at all times.

The certificate also certifies that there are a series of **security controls that monitor constant compliance** with all of these measures throughout the company.

To do this, Belvo has worked with the company **Vanta** leaders in security automation. In addition to certifying that Belvo meets all ISO requirements, thanks to working with Vanta, the company is also subject to a c**onstant, real-time, and automated monitoring** of all its information management systems.

Other security measures at Belvo

Belvo is the most secure Open Finance platform in Latin America:

Leading security team

Belvo has a leading team in the research and development of advanced cryptography and cybersecurity techniques.

Policies and training

We apply strict information security policies throughout the company and we train our team on an ongoing basis.

Periodic tests

We carry out periodic penetration tests on our platform by external companies.

Firewalls and Web Application Firewalls (WAF)

Powered by industry leading technology and powered by artificial intelligence.

Constant monitoring

We have a real-time alert system that detects and analyzes any security signal.

Strong data encryption

Using AES symmetric cryptography and compliance with NIST guidelines for secure cryptography.

Want to know more about building a secure app using Open Finance APIs?

Get in touch with us

belvo.