



Going Beyond Blockchain with the Interledger Protocol



Why Banks Need Interledger Connectivity

Global payment demands aren't just increasing, they are also rapidly changing. Increasingly, retail and corporate customers are requesting the need to send international low-value payments on demand and in real time across a variety of networks with absolute certainty.

Yet, today's infrastructure does not make this possible. As a result, banks are facing competitive pressures from alternative payment providers like PayPal and Alipay.

Banks need a better approach to accommodate evolving demands in payments and beyond. Think about the future world of trade finance, securities or lending. No single system or blockchain can accommodate these diverse sets of use cases or global needs.

Put simply, financial institutions need a modern infrastructure that interoperates networks to better serve their clients on a global scale.

To achieve the ultimate global transaction network, one akin to the World Wide Web, Ripple advocates for the Interledger Protocol (ILP). Ripple's implementation of ILP connects bank and non-traditional payment networks to make sending payments just as easy as sending emails. In other words, ILP is the key technology to enable the Internet of Value (IoV).

ILP: Benefits for Banks

At its core, Interledger is a web protocol for routing payments across independent networks, a technology which has never existed before. It ensures the payment speed and certainty necessary to service high volumes of all sizes and types of payments, while making them cost-effective for customers and profitable for banks.

ILP provides the same benefits as other blockchain systems, including the certainty and auditability of transactions, but adds advantages that traditional blockchains cannot offer, such as scalability, privacy and interoperability:

- **Horizontal scalability:** no limits to transaction processing to meet customer demand.
- **Complete transaction privacy:** transaction data remains private to only the transacting parties.
- **Interoperability between independent networks:** utilize existing ledgers, systems of record and currencies.

All banks and payment providers — from the smallest to the largest — can leverage Interledger's open protocol to power payments across networks globally. The Interledger Protocol can work with any new network or system, regardless of its underlying technology.



Ripple Solution Using ILP

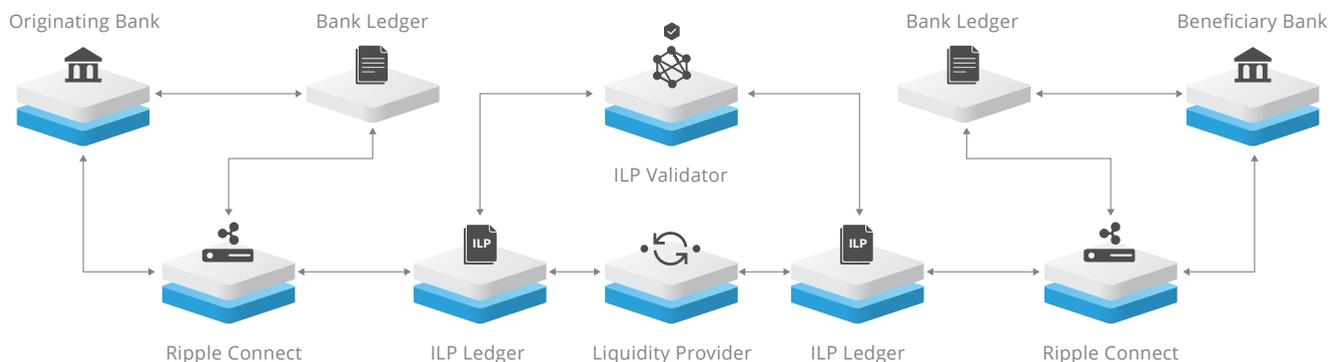
The Interledger Protocol is an emerging global technical standard. The Interledger community is developing ILP through the W3C and IETF. Members of the community represent a wide variety of organizations, including central banks, commercial banks, industry associations, technology companies, academic institutions and more.

Ripple's solution using ILP allows banks on different networks to securely and efficiently transact cross currency. Because ILP supports transactions across any type of ledger or network, financial institutions can easily integrate with Ripple's solution once and apply it to new use cases and technologies, like smart contracts, in the future.

The Foundation of the Internet of Value

No single network, system or blockchain can support the world's transactions anymore than a single database could run the Internet. Now is the time to see what the principles and design of the Internet can do for commerce and money. This is the vision of the Internet of Value, and the Interledger Protocol is the foundational block that will make it possible.

ILP Architecture Diagram



How Does ILP Work?

1. Ledgers track accounts and balances between an originator and a beneficiary. However, because not everyone is on the same ledger, ILP connects disparate ledgers to relay money between them, using Ripple's solution to execute payments between banks.
2. To remove all settlement risk from a transaction linking multiple parties, the ILP Ledger, a subledger that tracks the state of the liquidity provider's funds, temporarily puts funds on hold across all parties. This hold on funds is cryptographically verified by a software component called the ILP Validator.
3. The ILP Validator then signals all parties to release funds simultaneously to complete the payment, removing all settlement risk.



Contact Us

To learn more about how to ILP-enable your financial institution, please contact us at ripple.com/contact



Ripple provides global financial settlement solutions to ultimately enable the world to exchange value like it already exchanges information – giving rise to an Internet of Value (IoV). Ripple solutions lower the total cost of settlement by enabling banks to transact directly without correspondent banks and with real-time certainty, optionally using the digital asset XRP to further reduce liquidity costs. Banks around the world are partnering with Ripple to improve their cross-border payment offerings, and to join its growing, global network of financial institutions and liquidity providers. Ripple is a venture-backed startup with offices in San Francisco, New York, London, Sydney and Luxembourg. As an industry advocate for the Internet of Value, Ripple sits on the Federal Reserve's Faster Payments Task Force Steering Committee and co-chairs the W3C's Web Payments Working Group.

