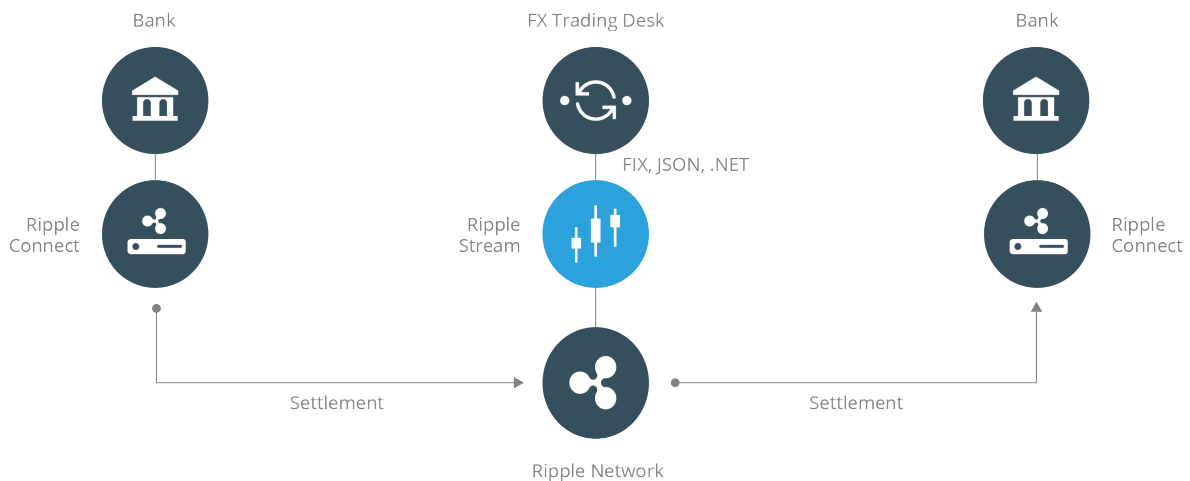# Ripple Product Overview: Ripple Stream

Ripple Stream, a component of Ripple's FX market making solution, is an order book management system that enables FX trading desks to use industry-standard tools, such as FIX, to facilitate FX markets on the Ripple Consensus Ledger (RCL). Ripple Stream provides an interface for trading desks to place the bid/ask orders on the RCL that provide the foreign exchange to enable cross-currency payments. Ripple Stream is designed to integrate with the bank's existing trading interface using FIX or JSON APIs. It can also be integrated as a .Net library into the bank's trading client.

HOW IT WORKS

Ripple Stream opens a WebSocket connection to the Ripple Consensus Ledger (RCL) to provide a stream of information about the markets on the RCL. With Ripple Stream you can subscribe to events on the RCL, and create, modify, and cancel orders on the RCL.

Ripple Stream's subscription functionality can be broken down according to the following categories:

Listen: Ripple Stream listens for subscription requests from clients.

Record: Ripple Stream records every subscription request. Clients can subscribe to events related to orderbooks, specific accounts, or to the entire scope of activity on the RCL. Whenever a client places an order, they are automatically subscribed to network events which affect that order.

Parse: Ripple Stream parses each transaction that occurs on Ripple, determines whether it's relevant to any subscribers, then sends that information to the related subscribers.

Ripple Stream uses the same WebSocket connection to submit transactions such as new orders, order modifications, and order cancellations to Ripple. Ripple Stream remembers the orders that have been submitted and provides instant updates as soon as those orders are partially or fully executed on the RCL.

BENEFITS

Ripple Stream provides trading desks with the ability to provide FX for the cross-currency payments on the Ripple network, with additional benefits:

Access: Volume for global cross-currency payments on the Ripple network.

Minimized Risk: Minimal FX exposure through real-time settlement; lowered counterparty risk through real-time trade confirmation.

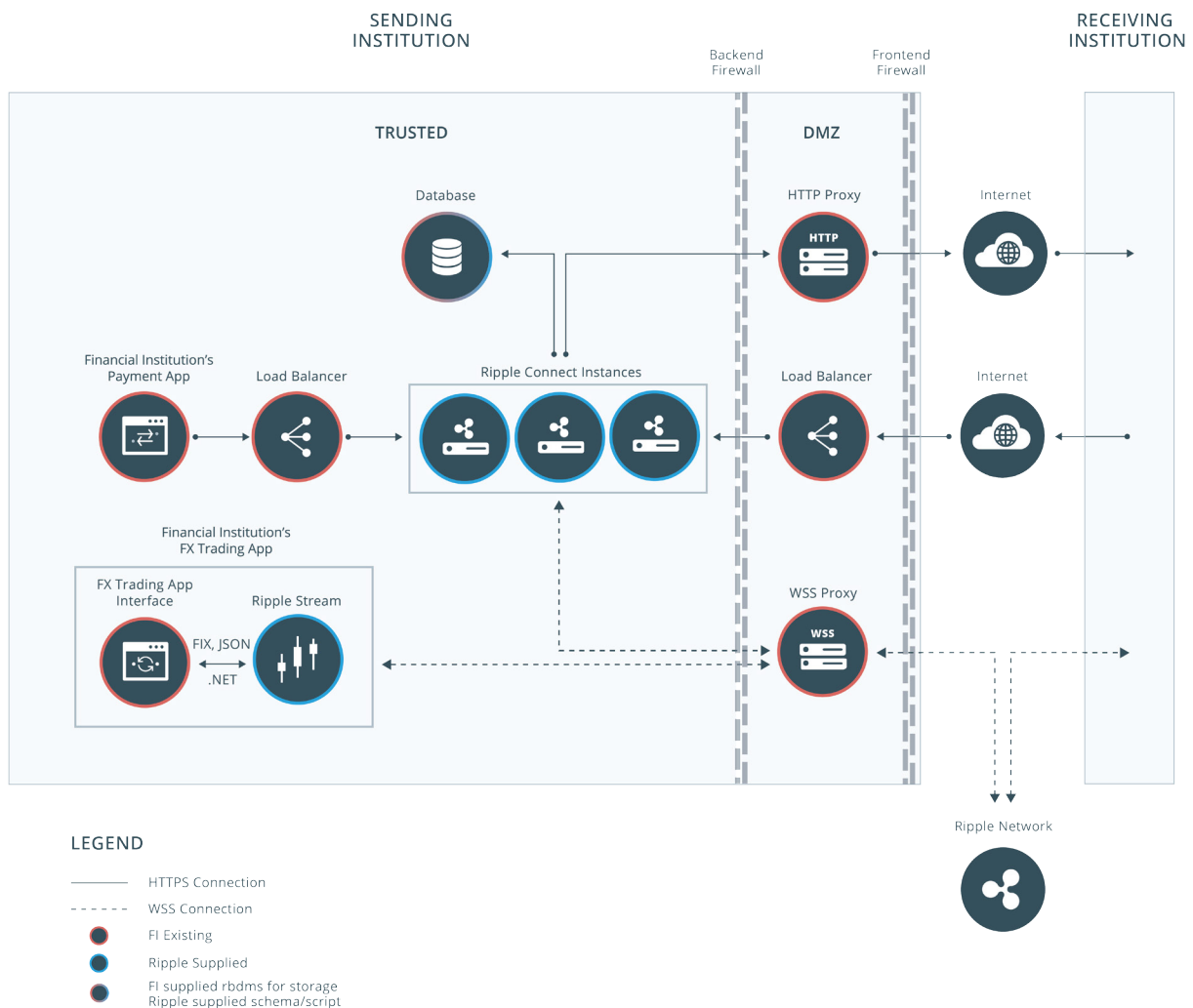**Settlement:** Settle trades in near real-time.

Real-Time Market Data: Access real-time data to instantly quote market events.

Compatibility: Ripple Stream works with existing trading clients via FIX, JSON APIs, and a .NET library interface.

ARCHITECTURE

Ripple Stream is typically installed on-premises behind the corporate firewall of a financial institution and integrated into the financial institution's existing trading application through a FIX, a .NET library, or JSON API. Ripple Stream uses a secure WebSocket protocol (WSS) connection to communicate with the Ripple Consensus Ledger (RCL). This connection provides real-time market data to the financial institution's existing FX trading applications. Ripple Stream uses the same WSS connection to monitor the RCL for changes to orders placed by the trading desk, changes to order books, and changes to specific accounts.

Deployment Details

SENDING INSTITUTION

RECEIVING INSTITUTION

Backend Firewall

Frontend Firewall

TRUSTED

DMZ

Database

HTTP Proxy

Internet

Financial Institution's Payment App

Load Balancer

Ripple Connect Instances

Load Balancer

Internet

Financial Institution's FX Trading App

FX Trading App Interface

Ripple Stream

FIX, JSON
.NET

WSS Proxy

Ripple Network

LEGEND

——————— HTTPS Connection

- - - - - - WSS Connection

● FI Existing

● Ripple Supplied

● FI supplied rbdms for storage
Ripple supplied schema/script

TECHNICAL REQUIREMENTS

Operating System	Windows
OS Dependencies	n/a
Architecture	x86 (64-bit)
RAM	8 GB
CPU	1 core
Storage	60 GB
Supported Database Connections	n/a
Deployment Options	FIX (hosted/local), JSON (Web Server), .NET (.dll)

RIPPLE STREAM DEPLOYMENT OPTION CAPABILITIES

The following table describes the capabilities of each deployment option for Ripple Stream.

Capabilitiy	FIX	JSON	.NET
Receive full orderbook	Yes	Yes	Yes
Receive updated to an orderbook	Yes	Yes	Yes
Receive changes to the top of an orderbook	Yes	Yes	Yes
Submit an order	Yes	Yes	Yes
Modify an order	No	Yes	Yes
Cancel an order	Yes	Yes	Yes
Receive account balance updates	No	Yes	Yes
Receive account executions	No	Yes	Yes
Receive account changes	No	Yes	Yes
Receive network execution events	No	Yes	Yes
Hosting options	Local/remote	Local/remote	Local

INTEGRATE WITH RIPPLE

Ripple and its channel partners work with financial institutions to implement custom solutions that seamlessly integrate Ripple Stream and other components of the Ripple solution into the institution's existing infrastructure.

Each integration highly depends on the requirements of the financial institution, but projects typically proceed through the following phases:

Pilot: Ripple works with the institution to implement a full integration that is limited in scope.

Production: Ripple works with the institution to fully implement the Ripple solution in a production environment.

CONTACT RIPPLE TO LEARN MORE

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