

# Algorithmica Qfix

## What is the Algorithmica Qfix?

Algorithmica Qfix is a modular, low-latency RFQ trading platform designed for electronic fixed income markets. The solution combines advanced components for real-time pricing, smart routing, yield curve construction, risk assessment, and post-trade analytics. Built on open standards and proprietary technology, Qfix provides seamless integration, high performance and full transparency, supporting faster and smarter trading decisions from quote to execution.

## The shifting fixed income paradigm

Electronic trading has moved from the margins to the mainstream, rapidly becoming the new standard in fixed income markets. Key trends underscoring this shift include:

- Pervasive electrification**  
 A significant and growing portion of trading across diverse fixed income segments (government bonds, corporate bonds, emerging market debt) is now electronic.
- Rise of automation & algorithmic trading**  
 Algorithmic execution for trade optimisation and efficiency is increasingly prevalent.
- Data analytics & AI as core tools**  
 Advanced analytics and AI are becoming indispensable for price discovery, liquidity forecasting, risk management, and trade execution.
- Interoperability imperative**  
 Enhanced connectivity and protocol standardization (e.g., FIX) are crucial for seamless system integration (trading platforms, OMS).
- Innovation in trading protocols**  
 New models like all-to-all trading and portfolio trading are reshaping market structure.
- Enhanced liquidity access & transparency**  
 Electronic platforms are improving liquidity, especially in less liquid market segments, and bolstering transparency, aiding regulatory compliance (e.g., MiFID II).



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## Algorithmica's advanced modular RFQ Trading Platform

- **RFQ Gateway & Router**

FIX 5.0/5.0 SP2 compliant, utilising FPML 5.13 for comprehensive product definitions, tiered routing based on client segmentation, low-latency transport with a roadmap for FIXP binary encoding to achieve <100µs message roundtrips and planned WebSocket delivery for lightweight front-end API integration.

- **Market Data & Yield Curve Engine**

Real-time, multi-currency OIS/IRS/basis curve construction using robust methodologies (bootstrapping, monotone cubic spline interpolation) and fallback logic, flexible data streaming via REST, IQC, and an optional FIXP high-performance feed and support for all standard industry conventions and multi-curve frameworks.

- **Asynchronous Risk Engine**

Subscribes to trade messages (from Qfix) and curve updates via internal REST APIs and message queues. In-memory Directed Acyclic Graph (DAG) engine (C++/Qlang) where nodes represent risk metrics, allowing for millisecond rescoring across VaR, ES, CVA through precomputed graphs. Supports historical simulation, parametric VaR, custom stress scenarios, and counterparty exposure calculations. Pre-trade risk limit checking and capital charge add-ons computed, and asynchronous execution ensures no blocking of critical trader workflows.

- **Data Lake & Analytics Layer**

Database agnostic storage architecture supporting any ODBC-compatible RDBMS. Comprehensive post-trade analytics capabilities including P&L attribution, transaction Cost Analysis (TCA), margin impact modeling, and missed-opportunity analysis. Data exposure via REST/GraphQL APIs for seamless integration with Jupyter notebooks, BI dashboards, and machine learning pipelines.

## What makes Qfix unique?

- **In-Memory DAG Risk Engine**  
A pre-aggregated dependency graph enabling sub-millisecond risk updates.
- **FPML 5.13 Compliance**  
Ensuring the richest product coverage aligned with the latest ISDA definitions.
- **Database agnostic**  
Providing plug-and-play compatibility with diverse enterprise RDBMS systems.
- **ML-Ready Platform**  
Designed with seamless data pipelines to support advanced quantitative research and machine learning initiatives.

## Benefits of Qfix



### Reduced Time-to-market (~30%)

Modular microservices and open APIs will accelerate deployment and integration compared to monolithic alternatives.



### Revenue uplift (~5-15%)

Low-latency quoting and dynamic client-specific skews are projected to directly increase trading revenue.



### Operational resilience

Asynchronous risk processing and robust failover mechanisms will minimise downtime, operational risk and lower support costs.



### Cost-efficiency (~20-40%)

The database agnostic ODBC layer and strategic use of open-source components will minimise licensing costs.



### Future proofing (+5 years)

Advanced features such as WebSocket delivery, FIXP support, and ML-ready data pipelines will ensure long-term platform viability with minimal refactoring.

## Contact

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