

# QuantPayChain Platform

## Technical Whitepaper

### Executive Summary

QuantPayChain is a next-generation blockchain platform designed for Real World Asset (RWA) tokenization with post-quantum cryptographic security. The platform enables secure, compliant, and efficient tokenization of physical and financial assets across multiple blockchain networks.

### Technology Stack

The platform leverages cutting-edge technologies including:

- Next.js 14 for high-performance frontend
- FastAPI for scalable backend services
- Supabase (PostgreSQL) for robust data management
- Post-quantum cryptography (NIST-approved algorithms)
- Multi-chain support for interoperability

### Key Features

1. Multi-Chain Support: Seamless asset tokenization across multiple blockchains
2. ISO 20022 Compliance: Full compliance with international financial messaging standards
3. Post-Quantum Security: Future-proof cryptographic protection
4. Real-Time Analytics: Advanced AI-powered dashboard and reporting
5. Payment Integration: Secure payment processing with Stripe

### Architecture

The QuantPayChain architecture follows a modern microservices approach with clear separation of concerns. The frontend provides an intuitive user interface, while the backend handles complex tokenization logic, blockchain interactions, and regulatory compliance checks.