

LSEG Markets Technology Clearing



The LSEG Markets Technology suite provides robust, scalable and high-performance solutions for operators of trading venues, clearing houses, central securities depositories and related businesses. The products are used by LSEG to operate its own businesses and are proven in demanding global markets and regulatory environments.

Cross asset and integrated clearing platform

LSEG Markets Technology Clearing is a complete multi-asset clearing and settlement system that operationally supports a wide variety of market structures, trade sources and settlement models.

The rich features of the Clearing product form part of the LSEG post trade suite that includes the Depository and Risk offerings. Combined, the post trade suite provide a fully integrated, reliable, cost-effective, and nimble solution for the full spectrum of posttrade requirements.

The product is built on top of the proven LSEG Markets Technology Advanced Platform to deliver a high performance system with resiliency, and scalability to service global multi-asset central counterparty clearing and settlement market infrastructure customers.

Key facts

01

Concurrent real-time and batch processing:

A real-time, event-driven, and concurrent batch processing architecture enables scalability, highcapacity, straight-through processing of trades and settlement processes.

02

24x6.5 operable zero-touch system:

A 24x6.5 system capable of real-time, zero-touch operation allows business and technical users to focus on exceptions and value additions to the business.

03

CCP and member accessible comprehensive UI:

A single web-based UI for CCP and members allows access from anywhere and enables users to perform all actions from trade novation to settlement instructions via one UI. A comprehensive user permission scheme allows segregation of work and secured access to the interface.

04

High performance platform:

A high performance and highly scalable system capable of processing thousands of trades at low latency on acknowledgements and 8-minute settlement netting for 3 million trades.

05

Cost-effective hardware footprint:

A scalable technology foundation designed to run on a moderate hardware footprint or on cloud.

06

Comprehensive business scheduler:

Fully fledged business scheduler, with time or event triggered schedules, to configure and orchestrate time-based or the daily business cycle.

07

Enhance operational efficiencies:

Member access to the system via an API to enable self-service for activities of position allocations among client accounts, transfers and settlement.

08

Employs industry standard interfaces:

Interfaces with external systems via industry standards such as FIXML, ISO 15022, or ISO 20022.

Functional highlights

01

Real-time position posting: Real-time trade, position, and settlement management posting with position keeping rules and settlement netting models enable real-time risk management and position building.

02

Corporate actions setup and diary maintenance: Designed based on CAJWG recommendations, the system provides a flexible model that caters to the complex world of corporate actions with minimal or no customisations required.

03

Asset agnostic trade enrichments and validations: Ability to leverage a common set of enrichment and validation tools established for multiple asset classes to improve timeliness and cost-effective on-boarding process.

04

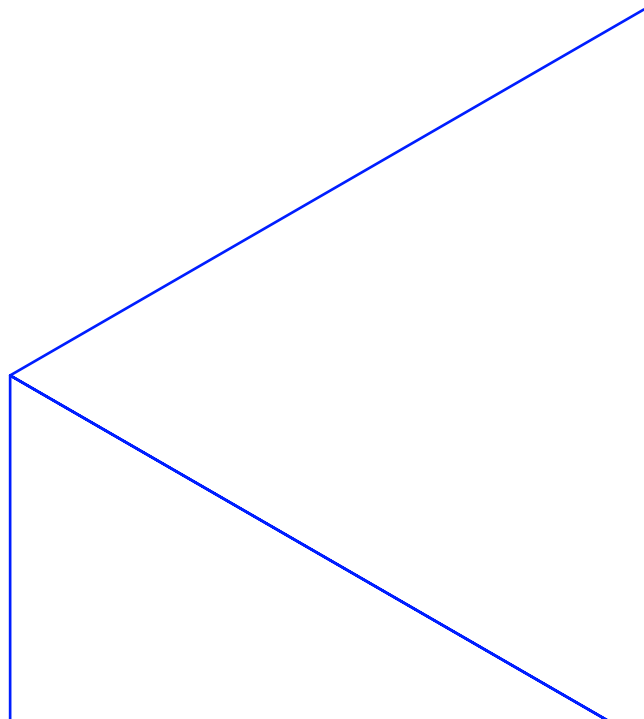
Flexible, multilevel account structure: A flexible account structure model supporting clearing, margin, settlement accounts down to individual investor level allows easy adoption by different market structures. Ability to set up multiple account types for clearing, settlement, and margining allows to combine or segregate portfolios for computational activities of real-time position and settlement management functions.

05

Industry standard settlement netting process: Computations via standard and non-standard DVP models to generate settlement instructions to CSDs and banks to identify position movements across settlement accounts. Through the rulebased configurable grouping of data/transactions, clearing organisations receive a high degree of control over the position posting and netting process enabling significant behaviour changes over time without vendor intervention.

06

Automated to manage settlement failures: LSEG's Clearing product manages the lifecycle of failed settlement transactions until final liquidation or settlement. The failure handling parameters can be tuned to distinguish groups of assets (e.g. debt or equity) or the associated group of markets and CSDs.



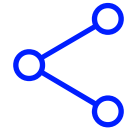
Key business benefits



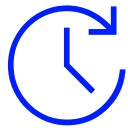
Reduced time to market, effort, cost, and complexity: Based on industry standards and global best practices the Clearing system has a shorter time-to-market, and is able to incrementally implement new features. The product is compliant with many market structures and practices allowing clients across the world to adopt the system with minor changes.



Multi-asset ready platform: Multi-asset, multi-currency-calendar service enables the operators to quickly adopt new business lines with small changes to the software. The ability of the system to differentiate between common and specific functionalities among asset classes leads to additional costs savings around testing and training.



High performance and extensive scalability: The Clearing system is highly scalable. Designed for high performance, the system can scale up to meet future needs on off-the-shelf new hardware and on cloud without any changes to the application.



Uninterrupted business services: The hallmark of the Clearing product is its robust application-level fault tolerance and disaster recovery capability to offer near 100% uptime across its implementations. Each application can be monitored to the level of individual processing threads, allowing failover/re-starts to take place within seconds of a failure.



Automated reconciliation and STP: Ability to automatically reconcile with trade sources and CSDs allows the trade registration and settlement process to be low-touch and STP, allowing the users to focus on more critical aspects.



Leveraging 25+ years of experience: Benefit from the 25+ years of experience implementing mission critical financial market infrastructure at over 40 customer sites across the world. LSEG works with its customers to devise solutions, drive transition management, deploy applications, and provide go-live and post-go-live operations support.

Key components

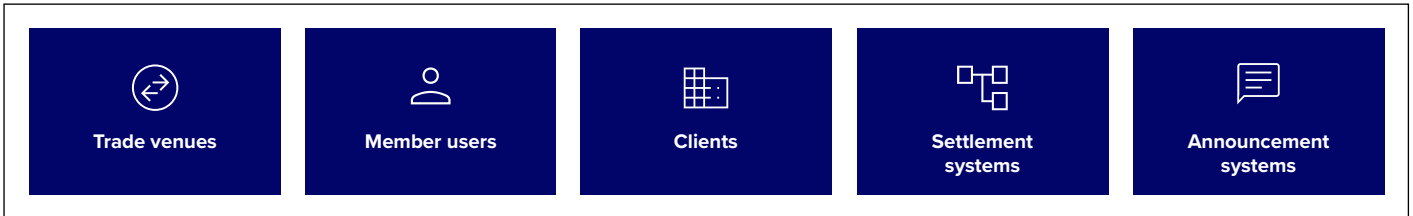
LSEG Markets Technology Clearing is implemented in a distributed architecture to enable superior scalability, performance, and fault tolerance. Our technology takes advantage of the latest advancements in multi-core technology and low latency interconnections to provide the highest performance and optimal response times.

This architecture also enables the integration of LSEG Markets Technology Depository and Risk products to offer a complete posttrade infrastructure. The integrated process components offer real-time, cross-asset CCP clearing, and settlement functionality catering to a wide variety of market structures, trade sources, and settlement models.

LSEG's Clearing product is designed to be a fast, resilient, and high throughput clearing system that supports multiple markets, asset classes, and products on a single platform. Built on commodity hardware on a Linux OS, the system is cost-effective to own, operate, and upgrade.

Key components of the LSEG Markets Technology Clearing

External users



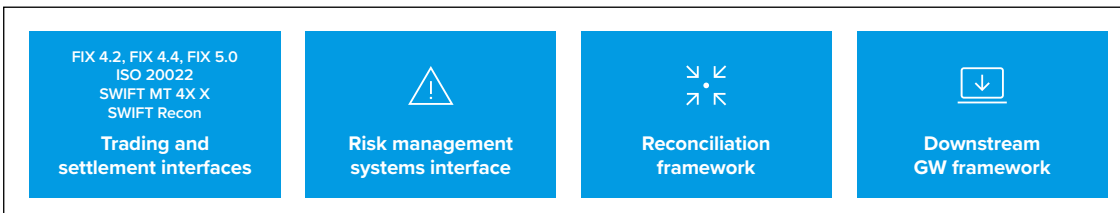
Scalable clearing modules



User intervention and management module



Industry integration modules



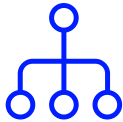
Technical overview



Leveraging a proven technology platform: LSEG's Clearing product is built on top of the LSEG Market Infrastructure Advanced Platform, enabling high performance batch and real-time processing together with the superior resiliency that characterises all our products—from order routing and trading to post-trade processing—that are deployed in multiple customer sites across the globe.



High performance and extensive scalability: Operating on a low-cost Linux platform and run on low maintenance commodity hardware infrastructure, LSEG Markets Technology Clearing is cost-effective to test, deploy, maintain, and upgrade. A high-performance system capable of processing thousands of trades at low latency on acknowledgements and 8-minute settlement netting for 3 million trades on off-the shelf hardware.



Ensuring resiliency and quick recovery: This multi-component system is managed by LSEG's proprietary process management and life-support system, SysGuard. This approach eliminates single points of failure, ensuring resiliency and quick recovery to provide an uninterrupted service.



Self-serviceable and easy to configure: The system is designed with flexibility in mind. Message formats, data structures, database schema, and computation methods are fully defined via a UI which supports the flexible definition of data objects. A system message dictionary enforces message consistency across the system. This makes adding new data objects (e.g. instrument types) to be configuration level changes rather than traditional code level changes.

Technical platform

- Distributed, message-based
- Software-based fault tolerance with zero data loss
- Business rule engine
- Web-based front ends
- Database: Oracle
- Operating system: Linux

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