

# THE CLEAREST WAY TO MANAGE THE ENTIRE LIFE CYCLE OF CAPITAL MARKET ASSETS



## SYMPHONY G2

The Symphony G2 supports all products traded on capital markets including Equities, Bonds, Foreign Exchange, Commodities, Credits and their Derivative, Structured and Hybrid products.



Free Trial at

[www.SymphonyG2.com](http://www.SymphonyG2.com)



## Solutions



**Symphony  
G2**

Front-to-Back  
Platform



**Trade & Position  
(STP)**

Front Office  
Workflow



**Pricing  
Engine (FDK)**

Numerical  
Libraries  
for OTC Products



**Back Office  
(SBO)**

Simple and  
Easy Back  
Office Operation



**Product Control  
(SPC)**

Pre-trade  
Product Designer



**The Smart  
Quant (SSQ)**

Financial Quant  
Workbench

# Product Coverage

The Symphony G2 supports all products traded on capital markets not only listed products but also OTC products including Equities, Bonds, Foreign Exchange, Commodities, Credits and their Derivative, Structured and Hybrid products.

## Function

1

### Front Office

The Symphony G2 front office supports the pre-trade analysis, product design, price simulation and virtual trading. It provides FV (Fair Value), Greeks and VaR (Value At Risk) as well as CVA (Credit Valuation Adjustment), DVA (Debt Valuation Adjustment), and FVA (Funding Valuation Adjustment). It also runs Ad hoc simulations in accordance with changes of the underlying asset price, interest rate curves, volatility curves, and time flows. Furthermore, it processes trade entry, trade capture, and post-trade operations such as re-fixing, corporate actions, redemptions, maturities, etc.

2

### Middle Office

The Symphony G2 middle office supports P/L and risk analysis for all booked positions by user-defined book management hierarchy. Realized and unrealized P/L is generated based on real-time revaluation or daily mark-to-market. Valuation, cash flow estimation and other position analyses are automatically updated based on the change of trades and market data. Furthermore, risk factors (including delta, gamma, vega, theta etc.) as well as VaR (parametric, historical and Monte Carlo simulation) are generated with ease.

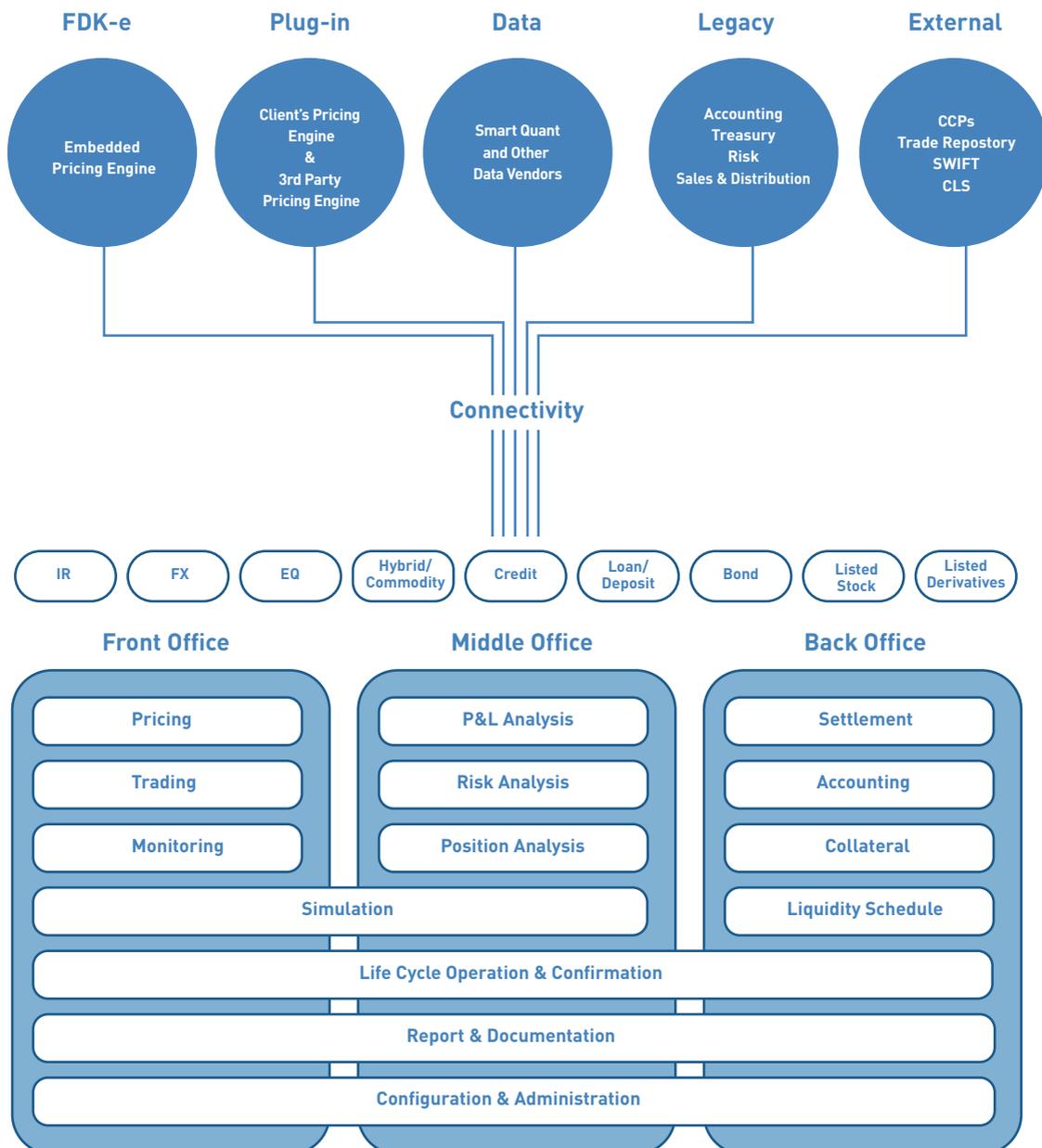
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### Back Office

The Symphony G2 back office provides trade and event confirmations, settlement instructions, cash inventories, cash in/out flow schedules and accounting journals (balance sheets and P/L statement data). It also processes third party interface messages, collateral revaluation and margin calculations, and generates various other formal and informal reports.

# Front-to-Back Platform For Capital Market Assets

The Symphony G2 is a comprehensive software system that supports the entire life cycle of capital market assets from the pre-trade analysis, through to the trade and maturity on a single platform. The Symphony G2 also boasts of its FDK, which has been market-proven in the valuation of OTC products.



# Technology

## 1 Single-Platform Straight Through Process (STP)

The Symphony G2's cross-asset, front-to-back architecture has been developed since its inception as a single platform, making it an ideal system for consolidation, simplification and extension. It achieves real-time STP by processing trades, valuations, P/L analysis, risk analysis and accounting on a single input. As a result, the client is able to minimize the number of programs used, streamline processes, enhance the efficiency of daily operations, and minimize the total cost of ownership (TCO).

## 2 Module-Based Architecture

The Symphony G2 is custom-built to meet the specific needs and workflows of the client, as it is composed of separable modules such as the pricing engine, structuring ingredients and work process units. Furthermore, it provides a flexible environment for handling changes in work processes and introduction of new products. Thus, it incorporates the addition of structuring modules and processes workflow configuration resets with ease.

## 3 Multi-Threaded Architecture

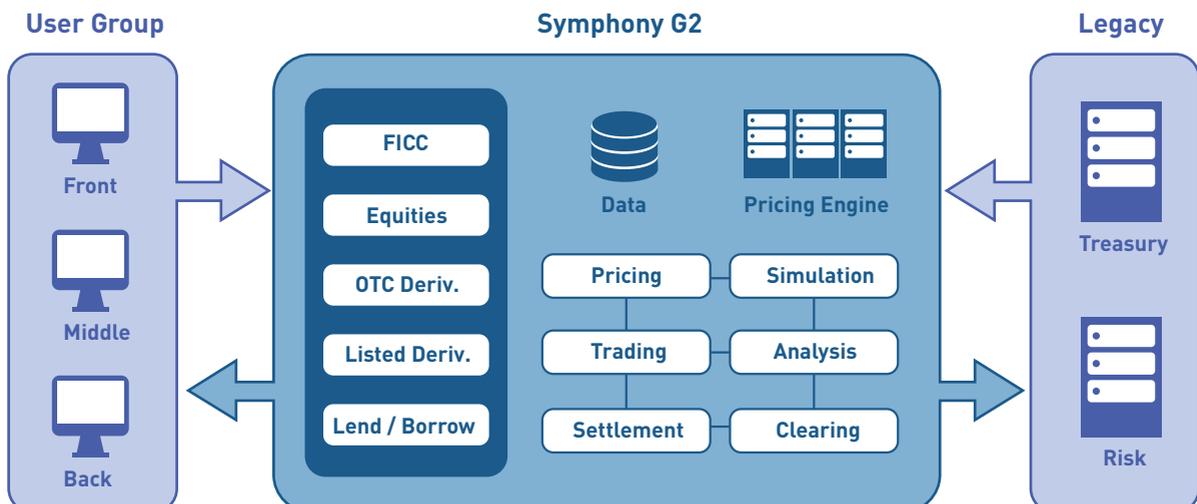
The Symphony G2 supports multi-threaded processing which controls the number of processors in accordance with the increase or decrease in simultaneous users, in the desks of front, middle and back office as well as regional branches or lab offices. Its multi-threaded processing successfully prevents latency risks of servers in case of multiple users' accessing and operating the system at any time, from various locations

## 4 Pricing Engine Plug-in Architecture

The engine plug-in function allows the Symphony G2 to run not only the FDK (embedded pricing engine) but also pricing engines of clients and third parties. The plug-in API (Application Program Interface) is provided for various OS including Linux, Unix, and Windows.

## 5 Grid Computing Architecture

The Symphony G2 allows for the pricing engine, including the FDK and plug-in engines, to run on multiple servers and CPU cores through grid computing architecture. Thus, when trades and position volumes are dramatically increased, the client simply incorporates additional servers or CPU cores, preventing any delay in real-time processing and revaluation.



# Product Composition

## 1 Pricing Engine (FDK)

The Symphony FDK is a highly flexible and transparent framework for computing price, greeks and performing scenario analyses on any data set. The FDK processes a comprehensive range of approximately 12,000 product types, from simple and conventional products to newly introduced, varied and complex structured products. The FDK provides APIs for C, C++, C# and Java on Linux or Unix Servers as well as DLLs of Windows.

## 2 Product Control (SPC)

The Symphony SPC allows users to design specific product structures and to register and manage them in coherence with their product classification or hierarchy standards. The client is also able to set a commonly traded product type as a template for convenient, frequent use. The SPC includes all functions of the SSQ (The Smart Quant) such as product design, pre-trade and post-trade pricing, risk factor calculation, cash flow generation, ad hoc and scenario simulation, and term sheet generation. The distinction is that the SPC is served as an in-house solution, unlike the SSQ's ASP (Application Service Providing) solution. Users are able to incorporate into the SPC the market data owned by Symphony G2 as well as external market data from third party vendors such as Bloomberg, Reuters, C-screen and etc.

## 3 Trade & Positions (STP)

There are two methods to enter trades into the Symphony STP; from the products registered on the SPC, or from external systems via an interface. The STP allows users to input their trades of both external and internal counter parties as well as divide trades into notes and options. All trades are automatically listed in the preferred format of the client. And position revaluation, P/L calculation, position risk analysis, etc. are processed in real-time. The STP monitors positions according to product conditions and market data, automatically notifying the user and processing re-fixing, redemption, knock-in/out, and touch as soon as such conditions are met.

## 4 Back Office (SBO)

The Symphony SBO supports all back office operations on a single platform. Back office functions including settlement, clearing, collateral, accounting, regulatory reports, and liquidity reports, are automatically adjusted with market data changes and front office trade and events, resulting in a seamless and effective straight through process (STP).

## 5 The Smart Quant (SSQ)

As a financial quant supporting system, The Smart Quant (SSQ) provides calculations of fair value, risk, internal rate of return and par swap rate. The SSQ runs pricing simulations against various financial instruments on the market as well as those that are already on client books. It is served as an ASP (Application Service Providing) with reliable, real-time market data. Clients simply fill in product conditions and select market data groups in order to run calculations and simulations. The SSQ is the ASP version of SPC (Product Control).