R7 - Introducing the next generation risk system

OpenDay 2023

Laura Nasello

21 September 2023



Our Journey from basic service to sophisticated IT solutions

from the 1990ies to 2020ies "a lot more than margining" **R7** R7 hybrid **Essential Service Fast Lane** Architecture Prisma We aim to maintain industry leadership **Event Driven** Transform into Micro-Service Risk Engine Architecture, realize benefits from "a little more Enable more effective risk analytics and than margining" a faster launch of new products & services Risk Engine Support multiple tenants

What is R7 about?



Technical Rework for Risk Management Systems & Tooling



Getting ready for the Cloud(s)



Faster launches for new products & services



Prisma Margin Methodology remains

We are technically reworking the Landscape of risk systems and tooling to a Micro-Service Architecture, ready for the Cloud(s)

Technical Rework for Risk Management Systems & Tooling

- Service-to-service communication works via gRPC calls
- Traffic flow into- and out of R7 services is abstracted by a queuing mechanism based on Redis

Key Technologies









Getting ready for the Cloud(s)

- All R7 Services run in docker containers
- OpenShift orchestrates the containers where the services are running
- Individual services can scale independently and automatically, according to market conditions, R7 user activity etc.

Key Technologies





Improved time to market already during R7 implementation phase through via the R7 Fast Lane

Faster launches for new products & services

- Dedicated analytics environment for modelling and prototyping
- R7 Pricing services adjust capacity flexibly to varying intraday demand, depending on tradingand clearing activity
- R7 Fast Lane for new products & services utilizes pricing and market data management from R7 and aggregation from Prisma system

Prisma Margin Methodology remains

 R7 is not about changing the margin methodology, but enables the migration of further products to be margined following Prisma logic as well as enabling further potential for cross-margin offerings

Deutsche Börse Group

R7 is planning to Go live in Production in 2024

Subject to regulatory approval

2023

Pre-Production Stage

- Development & Test of core architecture components
- Central Pricing & Market Data Management
- Fixed Income Focus

2024

Go Live, Selected business features

- Technical Go-Live on Google Cloud
- First release of new business features into production
- Fixed Income focus remains

2025

Essential Service Architecture

- All major risk business processes are served by R7
- New business features continue according to management prioritization



There are <u>no major</u> changes foreseen on customer interfaces for the time being.

Stay tuned for updates and follow us under







Thank you!

Laura Nasello

Head of Department Risk IT

Deutsche Börse AG Mergenthalerallee 61 65760 Eschborn

Phone +49 69 211 168 38

E-mail Laura.Nasello@eurex.com

Fuel your brain! #OpenDay2023 @DeutscheBoerse

tname@deutsche





Disclaimer

© Deutsche Börse Group 2023

This publication is for informational purposes only. None of the information in this publication constitutes investment advice and does not constitute an offer to sell or a solicitation of an offer to purchase any contract, share or other financial instrument. This publication is not intended for solicitation purposes but only for use as general information. All descriptions, examples and calculations contained in this publication are for illustrative purposes only.

Deutsche Börse AG, Frankfurter Wertpapierbörse (FWB®, the Frankfurt Stock Exchange), Eurex Frankfurt AG, Eurex Deutschland and Eurex Clearing AG do not represent that the information in this publication is comprehensive, complete or accurate and exclude liability for any consequence resulting from acting upon the contents of this or another publication, in so far as no wilful violation of obligations took place or, as the case may be, no injury to life, health or body arises or claims resulting from the Product Liability Act are affected.

Securities traded on the Frankfurt Stock Exchange and Eurex derivatives (other than EURO STOXX 50® Index Futures contracts, EURO STOXX® Select Dividend 30 Index Futures contracts, STOXX® Europe 50 Index Futures contracts, STOXX® Europe 600 Index Futures contracts, STOXX® Europe Large/Mid/Small 200 Index Futures contracts, EURO STOXX® Banks Sector Futures contracts, STOXX® Europe 600 Banks/Industrial Goods & Services/Insurance/Media/Personal & Household Goods/Travel & Leisure/Utilities Futures contracts, Dow Jones Global Titans 50 IndexSM Futures contracts, DAX® Futures contracts, MDAX® Futures contracts, TecDAX® Futures contracts, SMIM® Futures contracts, SLI Swiss Leader Index® Futures contracts, RDXxt® USD - RDX Extended Index Futures contracts, Eurex inflation/commodity/weather/property and interest rate derivatives) are currently not available for offer, sale or trading in the United States nor may they be offered, sold or traded by persons to whom US tax laws apply. The fund shares listed in XTF Exchange Traded Funds® are admitted for trading on the Frankfurt Stock Exchange. Users of this information service who legally reside outside Germany are herewith advised that sale of the fund shares listed in XTF Exchange Traded Funds may not be permitted in their country of residence. The user makes use of the information at their own risk.

Legal validity of this disclaimer

In the event that individual parts of or formulations contained in this text are not, or are no longer, legally valid (either in whole or in part), the content and validity of the remaining parts of the document are not affected.

Trademarks

The following names and designations are registered trademarks of Deutsche Börse AG or an affiliate of Deutsche Börse Group:

1585®; A7®; Buxl®; C7®; CDAX®; CEF®; CEF alpha®; CEF ultra®; CFF®; Classic All Share®; Clearstream®; CX®; D7®; DAX®; DAXglobal®; DAXplus®; DB1 Ventures®; DBIX Deutsche Börse India Index®, Deutsche Börse®; Deutsche Börse Capital Markets Partner®; Deutsche Börse Commodities®; Deutsche Börse Venture Network®; Deutsches Eigenkapitalforum®; DivDAX®; eb.rexx®; eb.rexX Jumbo Pfandbriefe®; ERS®; eTriParty®; Eurex®; Eurex Bonds®; Eurex Clearing Prisma®; Eurex Improve®; Eurex Repo®; Euro GC®; ExServes®; EXTF®; F7®; FDAX®; FWB®; GC Pooling®; GCPl®; GEX®; Global Emission Markets Access – GEMA®; HDAX®; iNAV®; L-DAX®; L-MDAX®; L-SDAX®; L-TecDAX®; M7®; MDAX®; N7®; ODAX®; ÖkoDAX®;PROPRIS®; REX®; RX REIT Index®; SCHATZ-FUTURE®; SDAX®; ShortDAX®; StatistiX®; T7®; TecDAX®; Technology All Share®; TRICE®; USD GC Pooling®; VDAX®; VDAX-NEW®; Vestima®; Xcreen®, Xemac®; Xentric®, Xetra®; Xetra-Gold®; Xpect®; Xpider®; XTF®; XTF Exchange Traded Funds®; We make markets work®

The names and trademarks listed above do not represent a complete list and, as well as all other trademarks and protected rights mentioned in this publication, are subject unreservedly to the applicable trademark law in each case and are not permitted to be used without the express permission of the registered owner. The simple fact that this publication mentions them does not imply that trademarks are not protected by the rights of third parties.

The STOXX® indices, the data included therein and the trademarks used in the index names are the intellectual property of STOXX Ltd., Zug, Switzerland and/or its licensors. Eurex' derivatives based on the STOXX indices are in no way sponsored, endorsed, sold or promoted by STOXX and its licensors and neither STOXX nor its licensors shall have any liability with respect thereto.

STOXX iSTUDIO® is a registered trademark of STOXX Ltd., Zug, Switzerland.

TRADEGATE® is a registered trademark of Tradegate AG Wertpapierhandelsbank.

EEX® is a registered trademark of European Energy Exchange AG.

Flexible is better.® is a registered trademark of Axioma, Inc.