Open Day 2019

Cloud Prisma Margin Estimator

Jesper Christiansen & Martin Zemlicka

Contents

cloud Prisma Margin Estimator - Functionality

Asset classes

- OTC trades: IRS, FRA, OIS, Basis swaps
- Supported formats: FpML, Eurex OTC reports, Eurex Margin Calculator CSVs
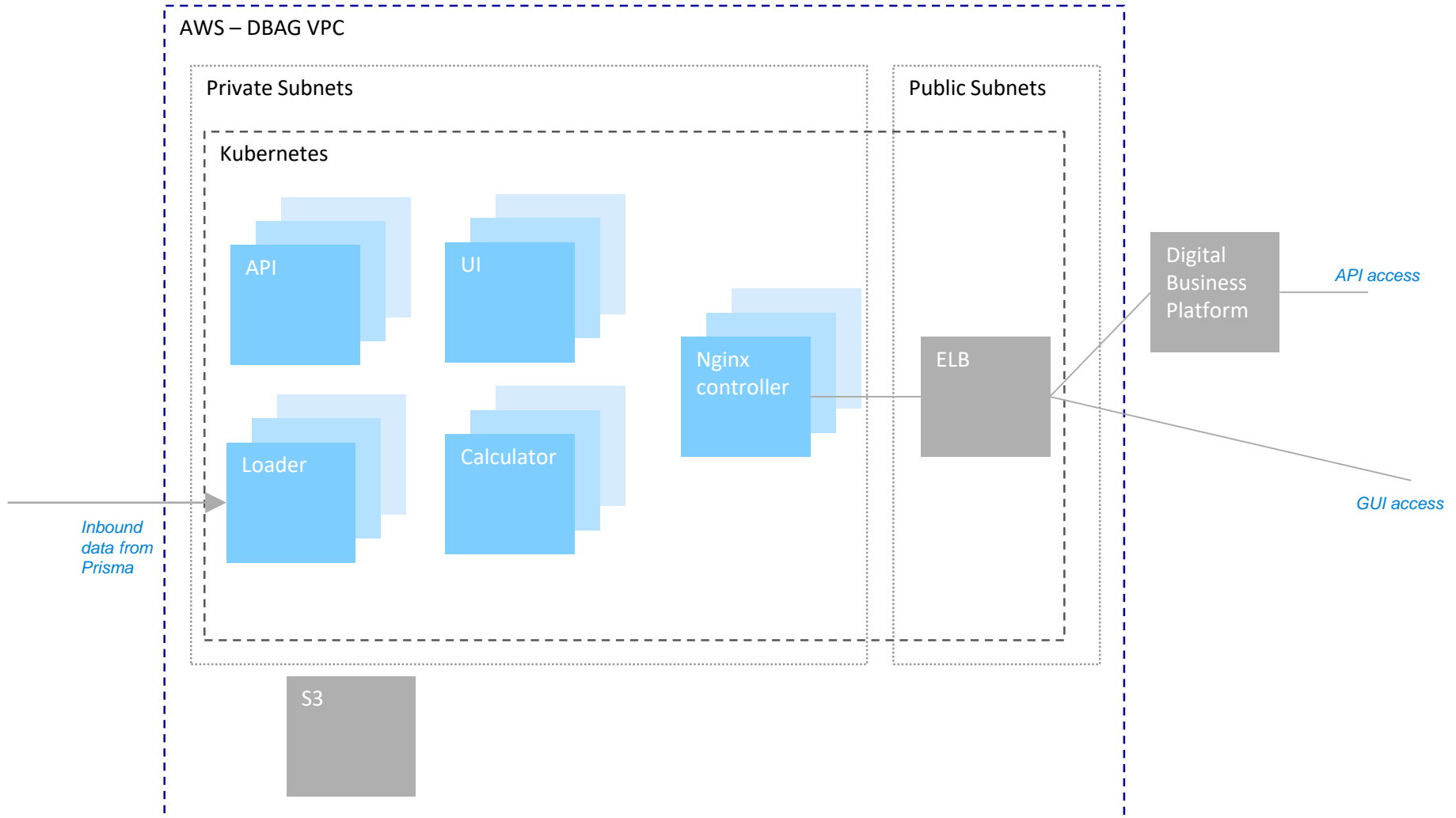- ETD positions: all Eurex and ECC derivatives

Features

- cross-margining between OTC and Fixed Income ETD
- exact production margin replication for ETD
- mark-to-market value and DV01 sensitivity for OTC
- intraday margin updates for ETD
- API with all the above plus historical calculation, greeks etc.

cloud Prisma Margin Estimator – Technical overview

cPME is designed and operated as a cloud native application. Core tenants:

- Stateless + container based

- Kubernetes

- Everything as code

- Public cloud

Architecture diagram

cloud Prisma Margin Estimator – Technical overview

cPME has a microservices based architecture:

- Loader(s)
- API endpoint(s)
- Pricer(s)
- Front-end(s)
- Webserver(s)

Containers are the primate that works for us: lightweight, secure, **standard**.

Storage is hard → make the cloud provider do it

Planning, monitoring, logging, etc are common → Kubernetes

cloud Prisma Margin Estimator – Technical overview

Kubernetes is to the cloud what Linux is to the server
— Kelsey Hightower

cloud Prisma Margin Estimator – Technical overview

If somebody does something for you
it means you don't have to think about it.

The public cloud's scale does a lot for us.

cloud Prisma Margin Estimator – Technical overview

Everything as code
Don't do anything "by hand"

To be efficient, automate.

To be secure, be machine readable.

To be compliant, be auditable.

cloud Prisma Margin Estimator – Technical overview

Lessons learned:

1. Use containers
2. Build micro-services
3. Embrace commodities
4. Version control everything
5. Automate automate automate
6. It's still hard ☺

cloud Prisma Margin Estimator – Future developments

- Inflation swaps
- What-if functionality – margin change for additional trade(s)
- Simplified UI entry of OTC trades and sensitivities
- Calculation of OTC sensitivity for uploaded portfolio

cloud Prisma Margin Estimator – contacts / links

Margin Estimator UI https://eurexmargins.prod.dbgservice.com

Link to flyer https://www.eurexclearing.com/...cloud-prisma-margin-estimator

APIs at DBG https://console.developer.deutsche-boerse.com

cPME API documentation https://app.swaggerhub.com/apis-docs/dbgservice/cPME-dev/2.0

Email risk@eurexclearing.com

Link to Eurex website https://www.eurexclearing.com

Thank you for your attention.

Contact
Martin Zemlicka, Expert
E-mail   Martin.Zemlicka@deutsche-boerse.com
Phone   +49 69 2 11-1 08 32

Disclaimer

Deutsche Börse AG opens up international capital markets for its customers. Its product and service portfolio covers the entire process chain – from pre-IPO services and the admission of securities, through securities and derivatives trading through the settlement of transactions and the provision of market information to the development and operation of electronic trading, clearing and settlement systems. With its process-oriented business model, Deutsche Börse increases the efficiency of capital markets. Committed employees are the key factor for innovation and further growth: without them, Deutsche Börse Group would not have developed into one of the most modern exchange organisations in the world. More than 5,000 employees work for the Group – a dynamic, motivated and international team.