WHY POSTGRES IS BECOMING THE STANDARD IN FINANCIAL SERVICES

Julian Moffett
Field CTO Financial Services

OVERVIEW

AGENDA:

- Brief introduction to your host
- The rise of OSS and Postgres
- Running mission critical applications on OSS
- How EDB can help you succeed and scale
- Q&A

EDB™

Julian Moffett: Field CTO Financial Services @EnterpriseDB

Description / Bio

Julian has 15+ years of experience working in the Financial Services sector in various different roles:

- **Infrastructure**: Engineering, Product and Service Management
- **Business Application** Delivery Lead
- **CTO / Enterprise Architect**

Most recently responsible for designing and building out enterprise scale Postgres managed services on premise and in cloud and program managing the large scale exit of incumbent database provider and the adoption of the new platforms.

Academically Julian comes from a Legal background (LLB, LPC) but has worked in technology all his professional career. Julian is TOGAF 9 certified.

Financial Services: Why Change, Typical Initiatives and Technology Impact

Drivers for Change[1]

Remaining **Competitive**

Reputation + **Talent** attraction / retention

Desire to improve **Agility**

Technology led/enabled new Markets

Cost Reduction

Initiatives We See

- Application **Modernization**
- Process **Digitalization**
- Move to **Agile methodologies**
- Technology **Simplification** / Consolidation / Technical debt reduction
- EOL / Op **Risk Remediation**
- **Data Center** downsizing / consolidation

Implications on Technology Teams

- **Cloud + As a Service** Adoption
- Staff reskilling
  - **Rise of DEVOPS / IAC**
- Application **Refactoring**
  - Monolith deconstruction
  - The rise of **modularization** / microservices
  - **New technology** adoption
- Exit of incumbent vendors
  - **Enter OSS and Postgres!**

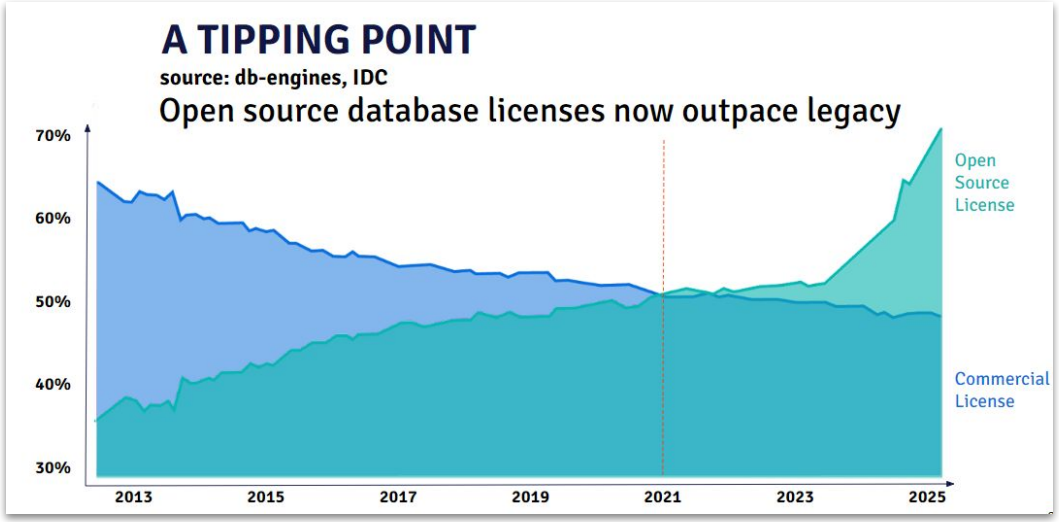
EDB™

[1] This is much abridged list of the macro trends we see with customer and echoed by analysts such as Forrester, McKinsey, Gartner and IDC

Open Source is mainstream and Postgres, the leader in the Database Space

- The **rise of Open Source** software is well documented
  - Many articles on global adoption across industries
    CNBC, Forbes, Techcrunch, TechNewsWorld

- Popularity of **proprietary database vendors in decline**



- **Postgres is hugely popular**

- DB-Engines.com, Cloud Native Computing Foundation (CNCF), Stackoverflow
- Cost is a factor but also flexibility, avoidance of lock-in
- No longer just for DEV. Applications in PROD run Postgres

EDB™

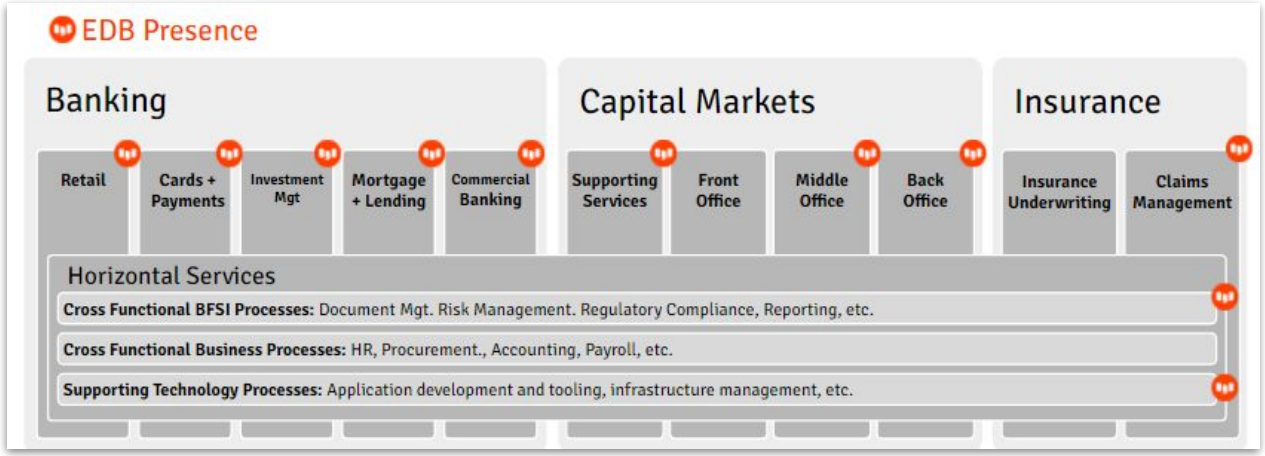
Open Source and Postgres in Financial Services

- *"Historically **banks have been hesitant** to adopt open source software"* - Finextra
- **Times have changed!** From the same article above:
  - *"Significant Open Source company acquisitions by large established corporate tech-vendors"*

Acquisition	Date	Amt.
SalesForce bought **MuleSoft**	Mar 2018	$6.5B
Microsoft bought **GitHub**	Oct 2018	$7.5B
IBM purchased **RedHat**	2019	$34 B

  - *"...incumbent tech players are adopting a true open source strategy themselves. E.g. Microsoft..."*
- Emergence of FINOS: *"...Open-Source Solutions for Financial Services"*
  - Accenture, Goldman Sachs, JP Morgan, UBS, Capital One, Fannie Mae, HSBC, Wells Fargo, RBC, Deutsche Bank +more

EDB in Financial Services



ABN AMRO Clearing is a recognized global leader in derivatives and equity clearing

Mastercard has long used PostgreSQL to support disaster recovery on its primary payment gateway, TNS

ACI - Global payments solutions processing more than $14 trillion in payments + securities transactions daily

- Uses EDB's BDR for multi-master replication for very high-availability across multiple geographies

Financial Services Enterprise Readiness

Not always a walk in the park…

Reliability

- Uptime! Requires HA / DR solutions to meet required RTO / RPO
- Support for Application Tiers up to Mission Critical. “Zero-downtime”
- Cross Availability Zone | Data center OR Cross Region

Scalability

- Repeatable deployment of 1000’s of databases requires orchestration and automation
- Monitor / operate / patch at scale

Performance

- Different workloads will have different e.g. TPS requirements
- Sizing the compute resources that the DB platform consumes is key

Security

- Data protection / encryption / redaction
- “need to know” data access and RBAC

and the elephant in the room… Control requirements[2] on:

Control Topic
Authentication and Authorisation requirements
Access Management
Backup and Restore
Disaster Recovery Obligations
Infrastructure / DB Capacity Monitoring
IT Asset Management
Operational DB monitoring / alerting
Security Vulnerability / malware scanning
Security Patch management
Security Compliance Monitoring
Temporary Privileged Access Management

EDB™

[2] Typically derived from the 100’s of global regulations that FS companies must adhere to on cyber security, data protection etc. See this Worldbank.org link for an overview

Where to start? Find the Right Partner

How do I **migrate** from a legacy database to Postgres?

How do I manage 100s or even 1000s of Postgres databases?

Where do I find Postgres best practices and **expertise?**

How do I **choose and prioritize** the right applications?

How do I deliver at five 9s **availability?**

Do I need a hybrid cloud / multi-cloud strategy?

EDB looks at the whole solution…

Looking beyond just the database engine and the ability to get incident support, we shape the f**ront-to-back database solution** to meet your goals

A Database **Solution** has many components

- Service Request / DB Provisioning
- DB deployment patterns to match RPO/RTO reqs.
- (Integration) Compute / Storage
- (Integration) Identity and Access Management
- Backup / monitoring
- Day to day operations
- Patching / Upgrades

…to develop your solution journey

We take a simple **plan, build and run** approach, deploying relevant SMEs at each stage

More Than Just a Database Engine

Software

Database

Postgres
(Community - OSS)

EPAS
(EDB Postgres Advanced Server)

Tools

(to help you operate from DEV through to Mission Critical PROD)

Backup and Recovery
Barman, pgBackRest, pg_basebackup, bart

Monitoring
PEM, pgAdmin

Migration
Oracle to EPAS migration **portal**

High Availability

Clustering / Replications
EFM, repMgr

Multi-master / Distributed
Bi-directional Replication (**BDR**), HARP

Services and Support

- **Global 24/7 Support**
- **Remote DBA**
- **Technical Account Manager (TAM)**
- **Training**
- **Consulting**

Subscription Plans

Community 360
DB: Community Edition Postgres (OSS)
Tools: OSS only

Standard
DB: Community Edition Postgres (OSS)
Tools: OSS and **EDB Tooling**

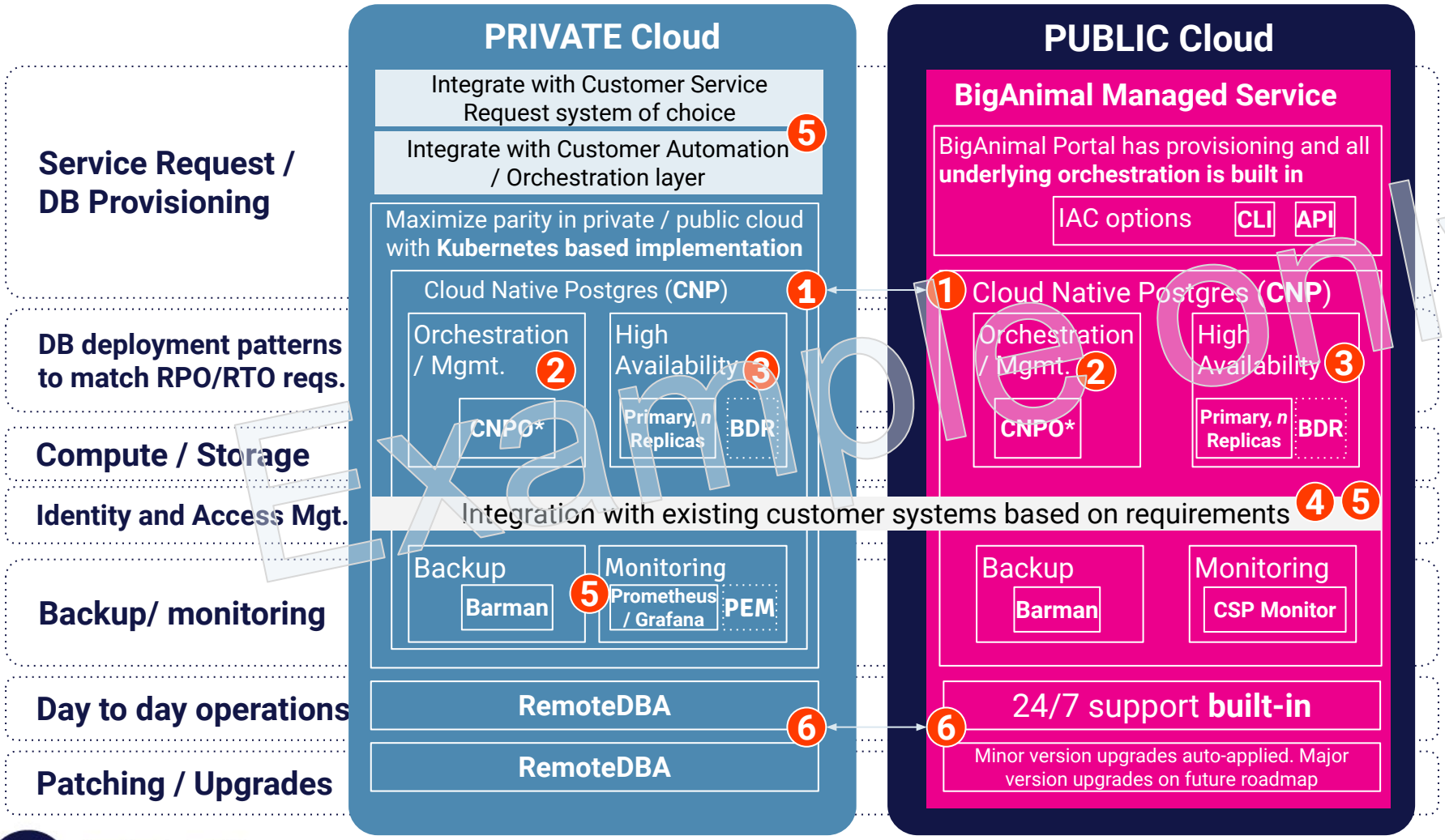
Enterprise
DB: Community Edition Postgres (OSS), **EPAS**
Tools: OSS and EDB Tooling

Fully Managed PUBLIC CLOUD Offering

BigAnimal
DB: Community Edition Postgres (OSS), EPAS
Tools: EDB Tooling

EDB™

Example Enterprise Solutions



Mapping to Key Outcomes

1. Maximize **parity** between **private and public cloud** with CNPO
2. Enable provisioning **automation** / **consistency + IAC** / Devops
3. EDB utilities support different **tiers of service driven by RPO/RTO**. Orchestration enables repeatable deployments
4. **Satisfaction** of customer **control obligations**
5. **Ecosystem integration** where required
6. **Follow the sun** Operational **support** available **+ proactive support** for best practices, capacity planning etc.

Example only

EDB™

CNPO (**Cloud native Postgres Operator**) is a Kubernetes Operator we can deploy on premise and is used in our Public Cloud offering

Wrap Up

Postgres in Financial Services Today

- Significant **growth in usage of OSS** generally over last few years
- Financial Services are **no longer hesitant** to embrace
- **Postgres** one of the **leading** OSS technologies
- BUT…there's still a significantly **high bar to manage data** in Financial Services
- Recommend customers **find a strong partner** to work with

Why EDB?

- **Expertise not found elsewhere**.
  - Our experts have literally contributed to the development + direction of the technology **since its inception**
- We focus on **holistic** database **solutions**
  - We understand the **database ecosystem** and apply best practice to help you meet your goals
- Our **SMEs, tooling** and **deployment flexibility**
  - We **enable** customers to design / deploy / operate Postgres at an **Enterprise level** on platforms of choice
- Deeply **embedded in** the **community**
  - We actively help drive PostgreSQL **development**
  - We support Postgres **community** continued **success** through conference involvement and education

EDB™

THANK YOU

5 Tenets for Your 2022 Database Management Plan

7 Critical Success Factors for Moving to Open Source Databases

EDB