Breaking up with Oracle

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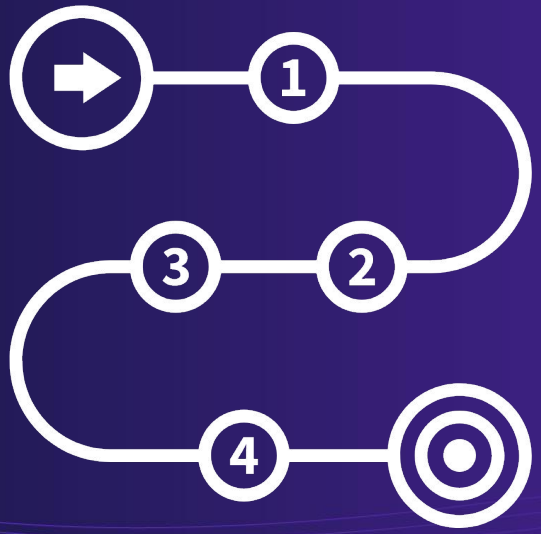
Agenda



- Postgres - winning the database game
- EDB - your Postgres partner
- Some stats about PL/SQL and Oracle migrations
- Steps and tools
- Hands on migration example
- Picking your first migration candidates
- Q&A

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Postgres as the clear winner in the database game

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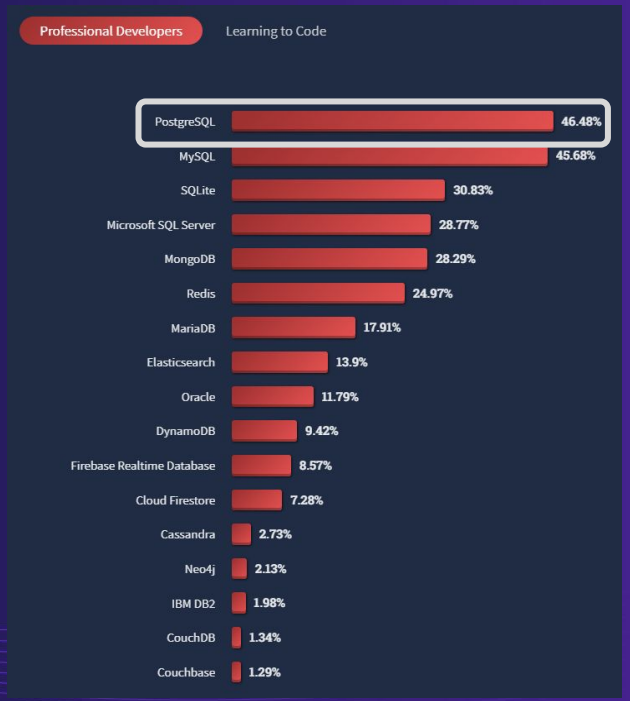
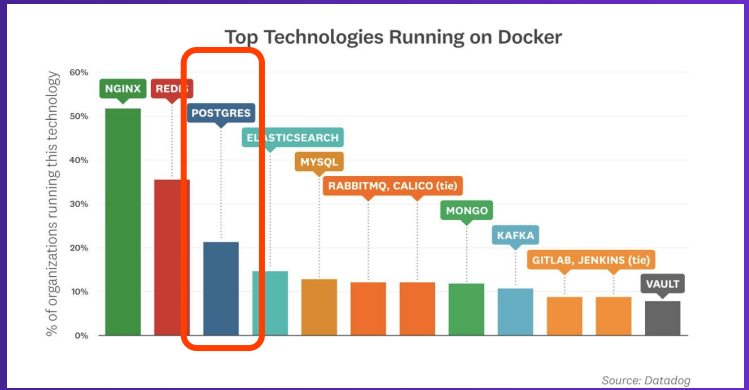


Stackoverflow 2022 Developer Survey



The CNCF End User Community was asked to describe what their companies recommend for different solutions: Adopt, Trial, Assess or Hold. This table shows how the End User companies rated each technology.

Level	Name	Votes
Adopt	Redis	
	Elasticsearch	
	PostgreSQL	
	MySQL	
	Kafka	
	Memcached	
Trial	MongoDB	
	Cassandra	
	Aurora	
	Consul	
	BigQuery	
	CloudSQL	
	AWS DynamoDB	
Assess	MariaDB	
	CockroachDB	
	Vitess	

Cloud Native Computing Foundation Technology Radar

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Postgres

the most transformative open source technology since *Linux*

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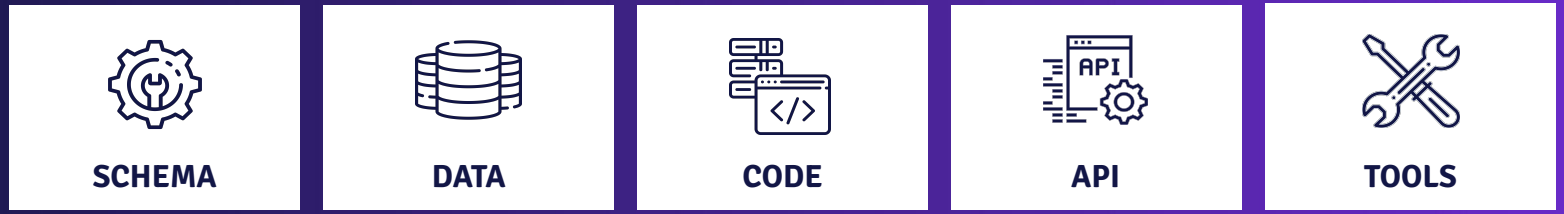
EDB **builds Postgres,** alongside a vibrant independent community.

You have direct access to the people shaping the direction of the technology.

Building Blocks of Oracle Compatibility



Part of the way
SCHEMA AND DATA ONLY

Most of the way
SCHEMA, DATA AND CODE

Almost there
SCHEMA, DATA, CODE AND INTERFACE

All the way
SCHEMA, DATA, CODE, INTERFACE AND OPERATIONAL TOOLS

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Oracle Compatibility in EDB BigAnimal

EDB Postgres Advanced Server - Deep and wide native compatibility

What are the areas of compatibility?

- Oracle specific and syntax compatible database object types
- Oracle specific data types
- Oracle PL/SQL support as a built-in native procedural language
- Oracle-like data dictionary views (i.e., ALL_, DBA_, USER_ views)
- Oracle-like built in PL/SQL packages
- Oracle-like database drivers
- Oracle work-alike tools for DBAs

What are the benefits of compatibility?

- Significantly reduces the amount of time and effort required for a migration from Oracle
  - More schema, SQL, and code can run in Postgres without modification
  - Less schema, SQL, and code needs to be converted or rewritten
- Eases the transition from Oracle to Postgres for Oracle DBAs and developers
  - Familiar database and application constructs and tools available to DBAs and developers

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Oracle Compatibility Observations - Constructs

Practical findings

- Table and indexes are important
- But they are only a part of the challenge

Object type	Prominence
TABLE	28.78%
INDEX	20.41%
SYNONYM	15.74%
CONSTRAINT	9.39%
VIEW	6.91%
SEQUENCE	5.74%
TRIGGER	3.21%
PROCEDURE	2.96%
PACKAGE	2.74%
PACKAGE BODY	1.87%
FUNCTION	1.25%
TYPE	0.65%
MATERIALIZED VIEW	0.14%
TYPE BODY	0.10%
DATABASE LINK	0.08%
USER	0.02%
ROLE	0.01%
	100.00%

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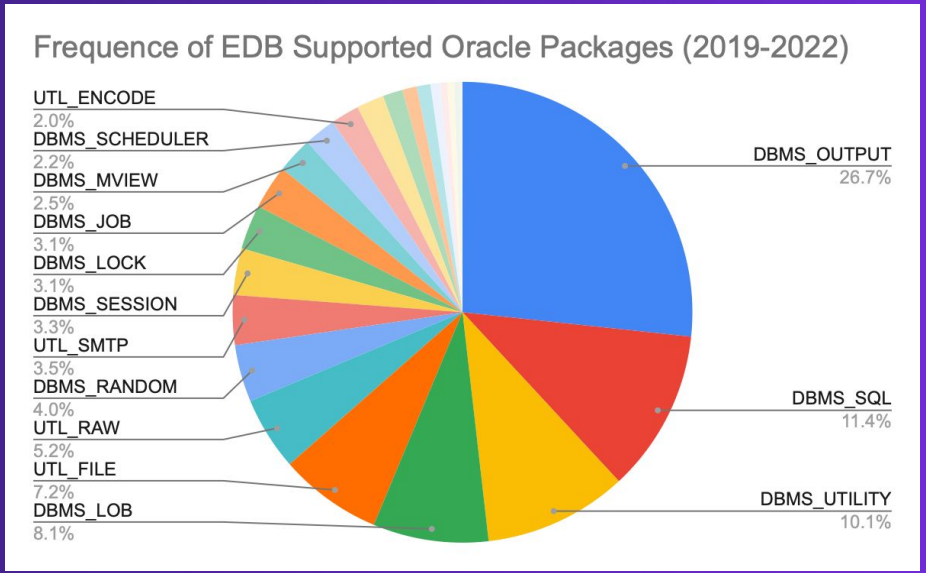
Oracle Compatibility Observations - Packages

Practical findings

- Based on over 18 million DDL constructs analyzed since January, 2019
- 14% of all schemas had at least one reference to PRAGMA AUTONOMOUS_TRANSACTION
- 14% of all schemas had at least one HINT
- 31% of all schemas referred to at least one of the EDB supported Oracle packages



EDB's Oracle compatibility addresses practical challenges in Oracle migration

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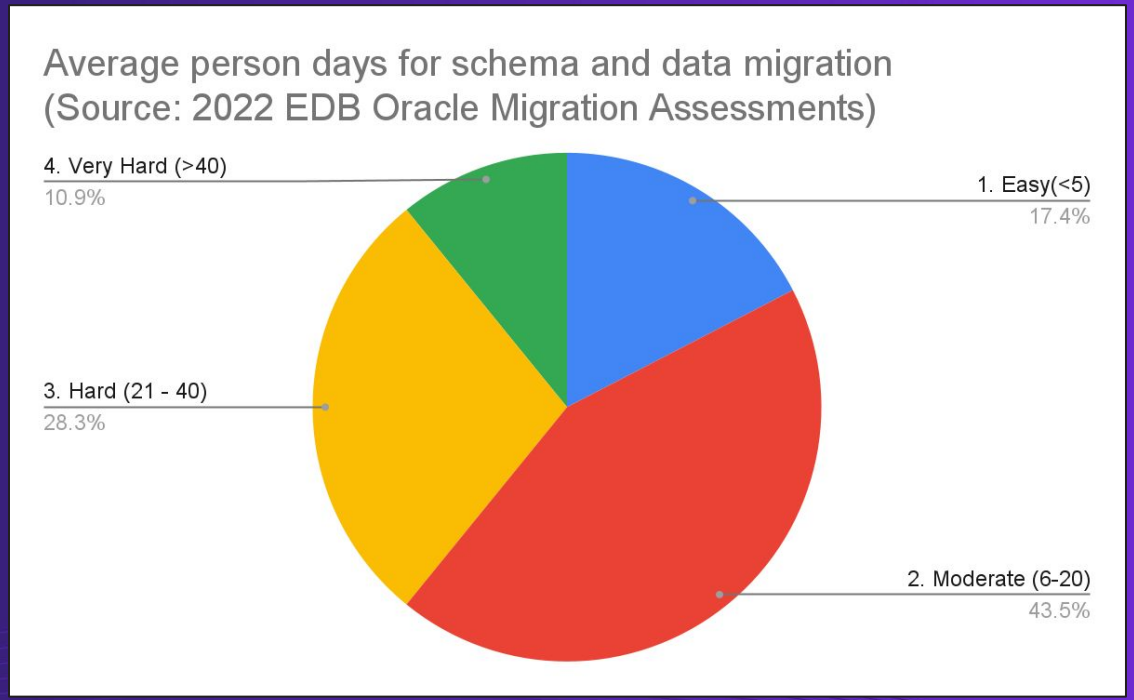
Oracle Compatibility Observations - Effort Assessment

- 61% of Oracle migrations to EDB Postgres are easy/moderate
  - < 20 person days of effort
  - Migrate schema and data
  - Leverage EDB Oracle Compatibility
- EDB BigAnimal w. Oracle Compatibility
  - Accelerates migration
  - Reduces infrastructure set up time (10-15 person days ⇒ 1 person day)



Why Choose BigAnimal

BigAnimal on AWS or Azure gives you the expertise and capabilities only EDB provides

Deep Postgres Expertise

Compatible with Oracle

Availability Options

Cloud Choice

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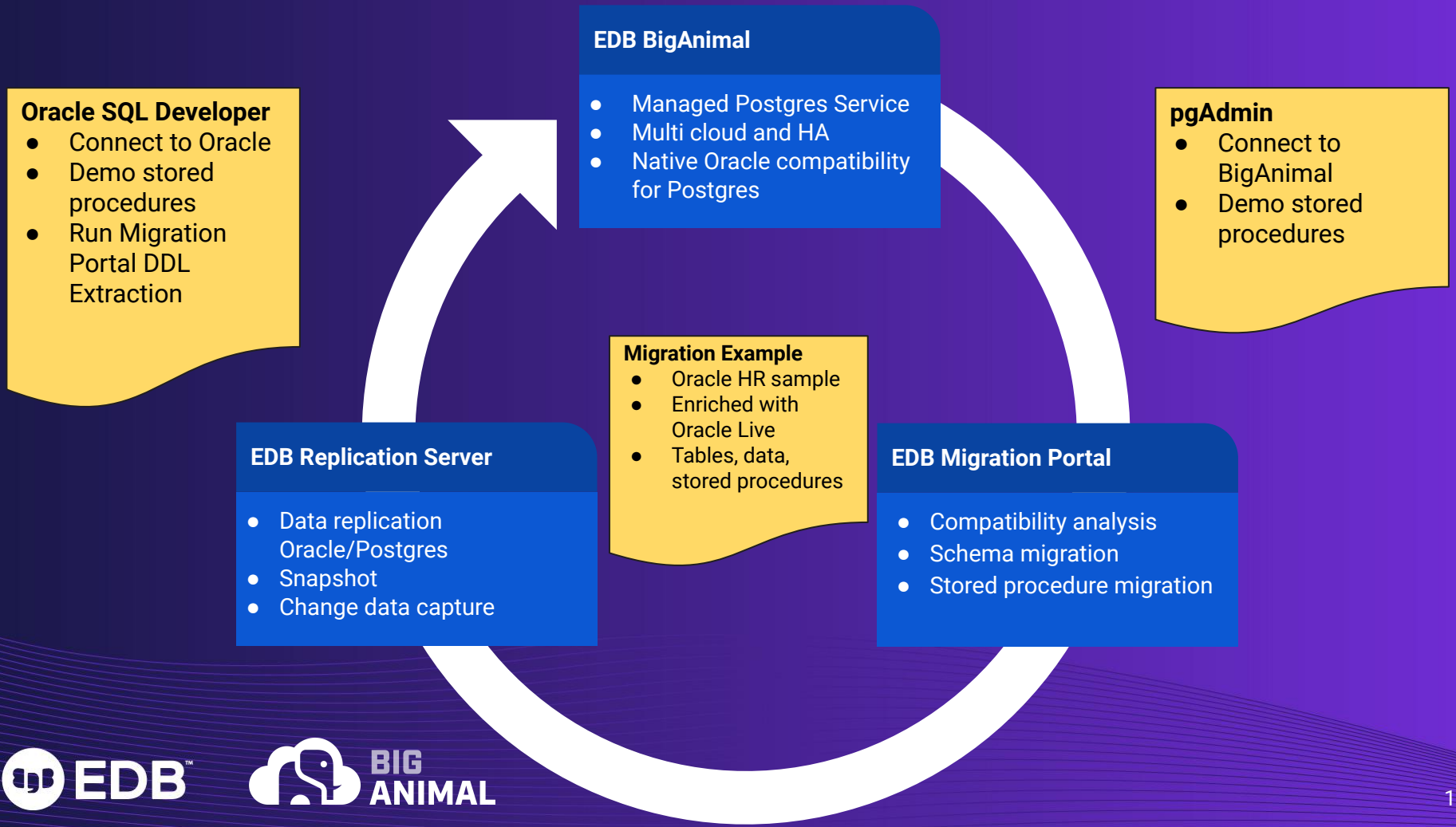

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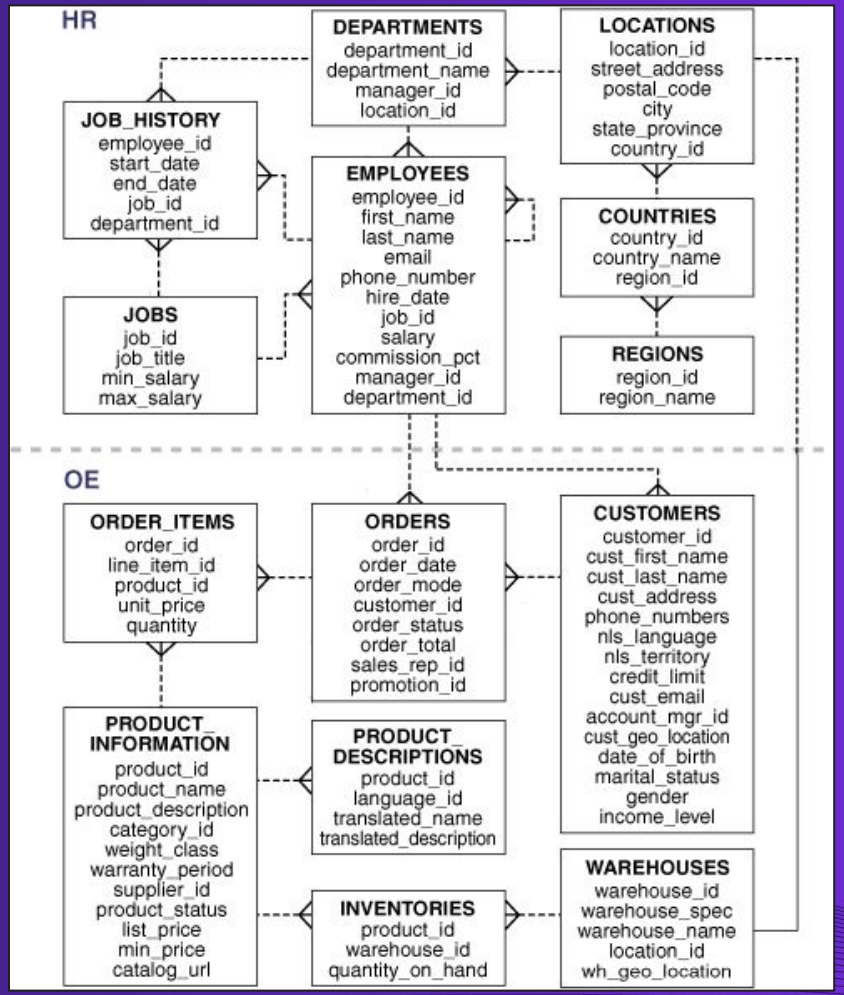
HR Schema

- Oracle standard example
- Source: https://livesql.oracle.com/apex/livesql/file/content_C1W23DSC9K441CR5RULGGBVW4.html



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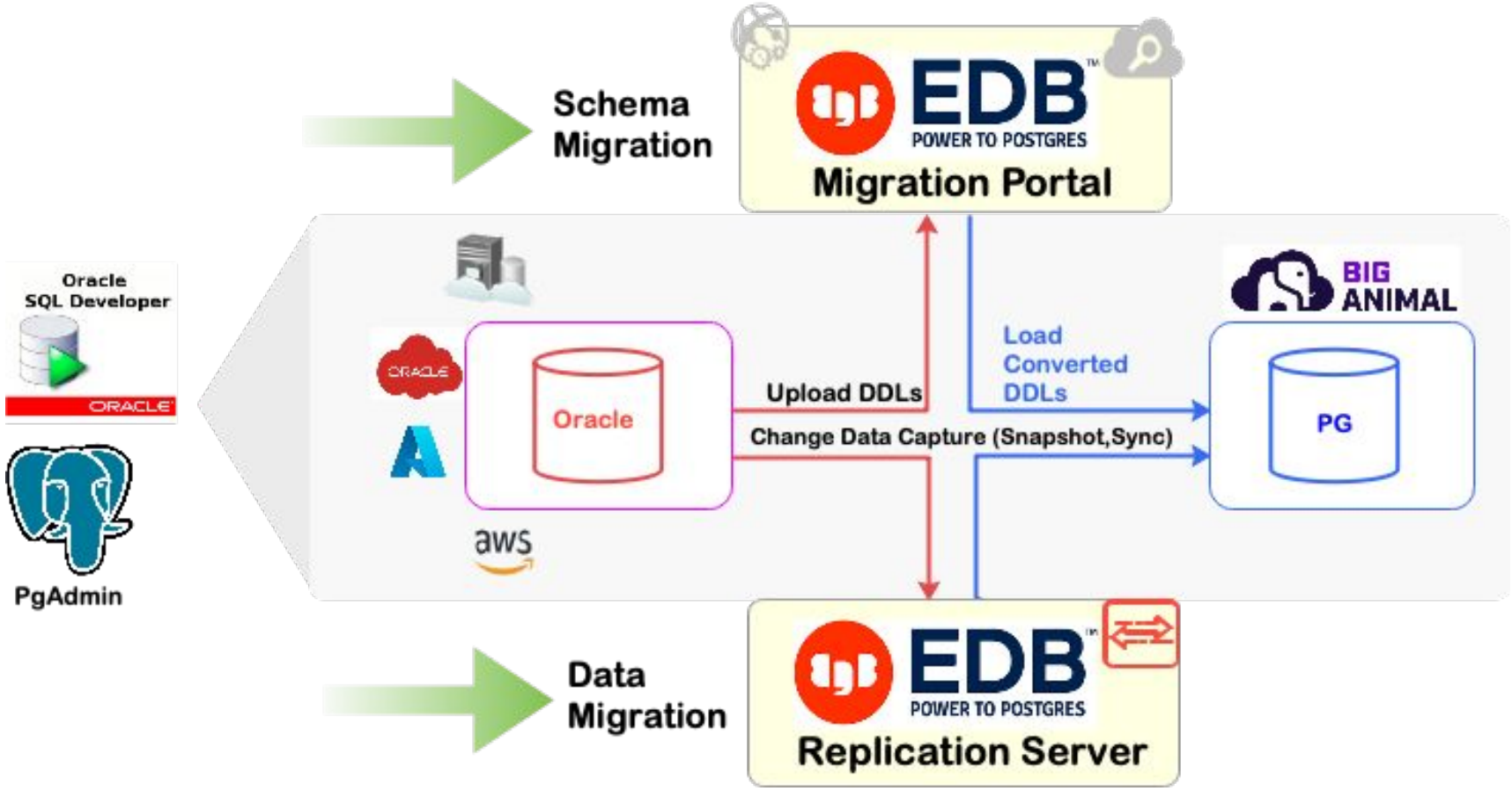
Schema Migration
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POWER TO POSTGRES
Migration Portal
Oracle SQL Developer
ORACLE
PgAdmin
Oracle
Upload DDLs
Change Data Capture (Snapshot,Sync)
Load Converted DDLs
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PG
aws
Data Migration
EDB
POWER TO POSTGRES
Replication Server

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DEMO

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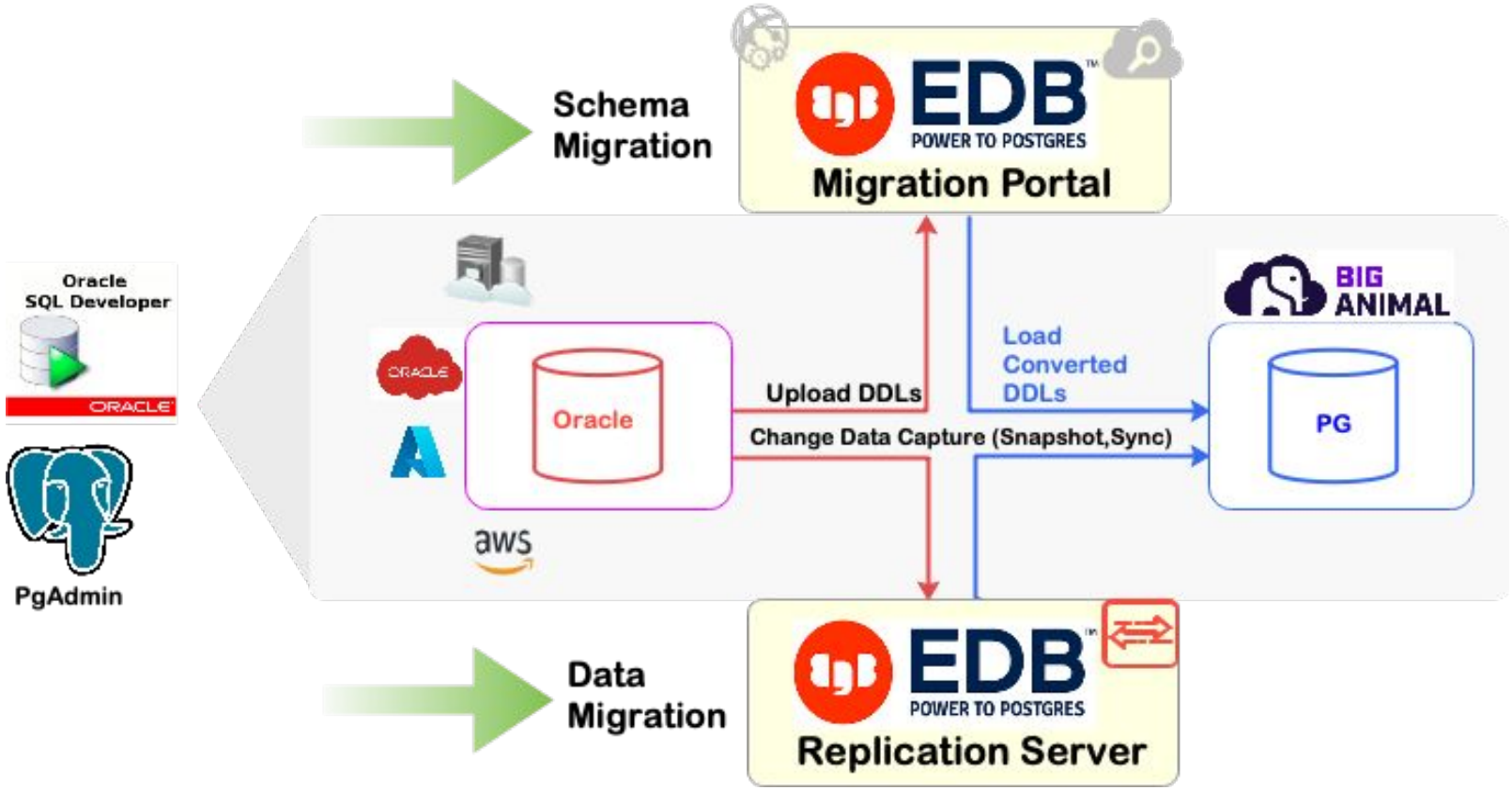
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What makes a good migration candidate?

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- ORM (Hibernate, Spring, etc.)
- Procedures, Functions, Packages written in PL/SQL

- Ability to modify source code
- Availability of Application Developers

- No use of RAC for scalability
- No need for Flashback

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Typically more difficult migration candidates

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Moderate candidates

- OCI interface
- Spatial/XML
- Oracle extensions of .NET and ODBC

Typically difficult candidates:

- ProC interface
- Transaction management control inside PL/SQL (Commit/rollback/ savepoint/exceptions)
- Stored procedures written in Java
- Must have RAC capabilities and Flashback

Other Oracle proprietary extensions

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Q&A

Resources

- BigAnimal documentation
- EDB Postgres Advanced Server
- EDB Migration Portal
- The Complete Oracle to Postgres Migration Guide
- Oracle Aggressive Business Practices Drive Customers to Seek Alternatives

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