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Breaking up with Oracle

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Manoj Vakeel, Professional Services & Migration

EDB

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Speakers

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Field CTO- APJ
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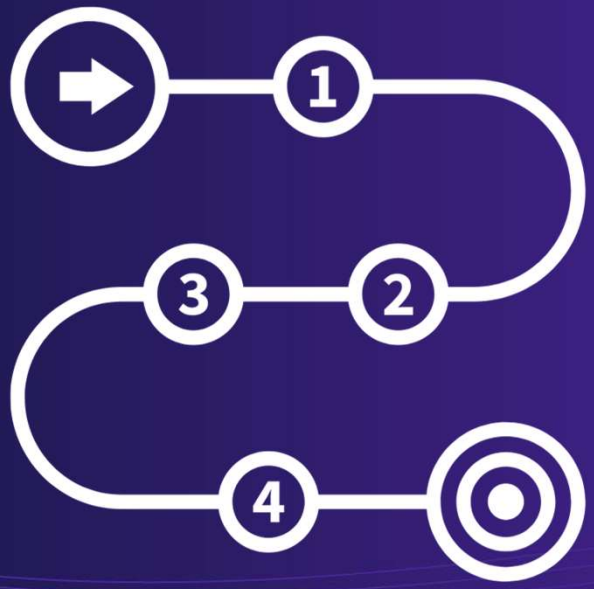
Manoj Vakeel
Professional Services & Migration
EDB

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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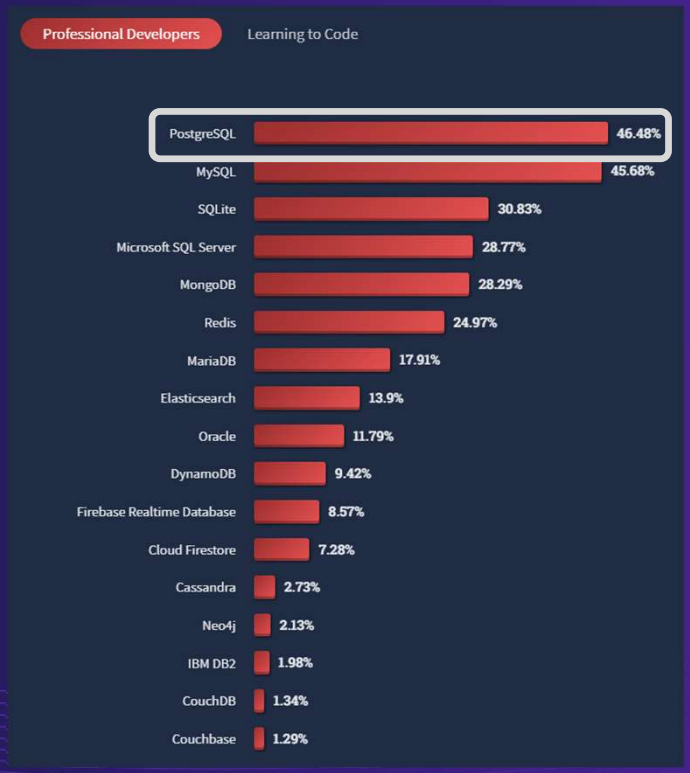
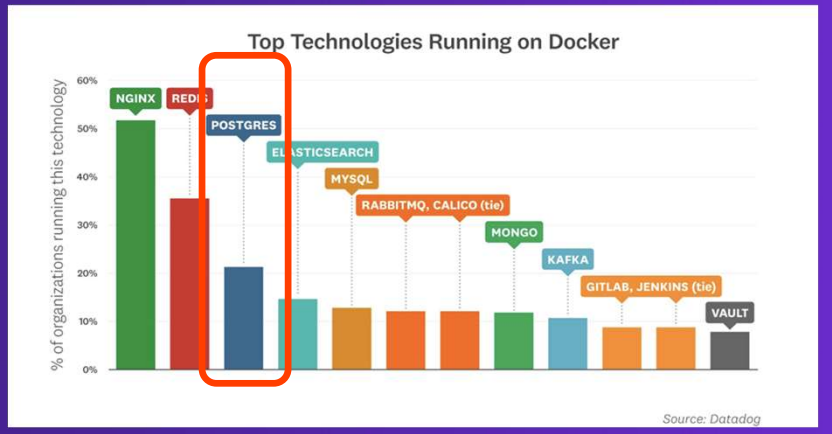
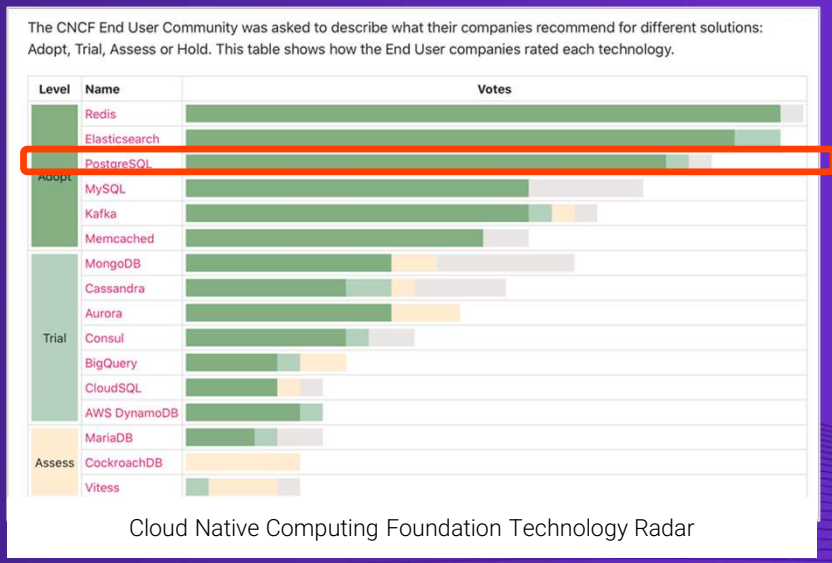


Stackoverflow 2022 Developer Survey





Cloud Native Computing Foundation Technology Radar

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Postgres

the most transformative open source technology since *Linux*

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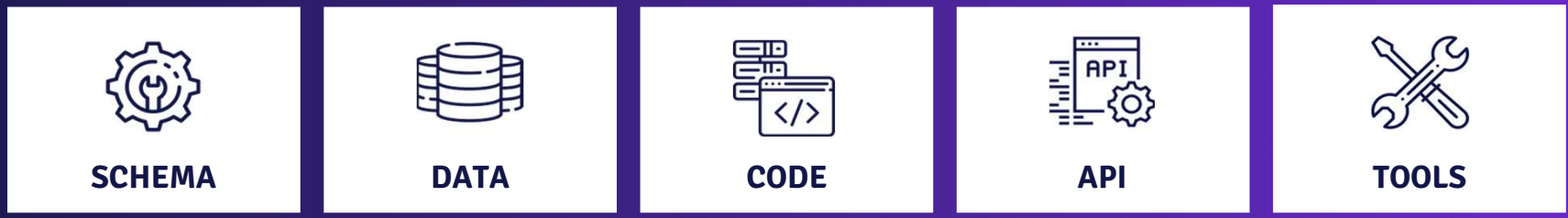
EDB **builds Postgres,** alongside a vibrant independent community.

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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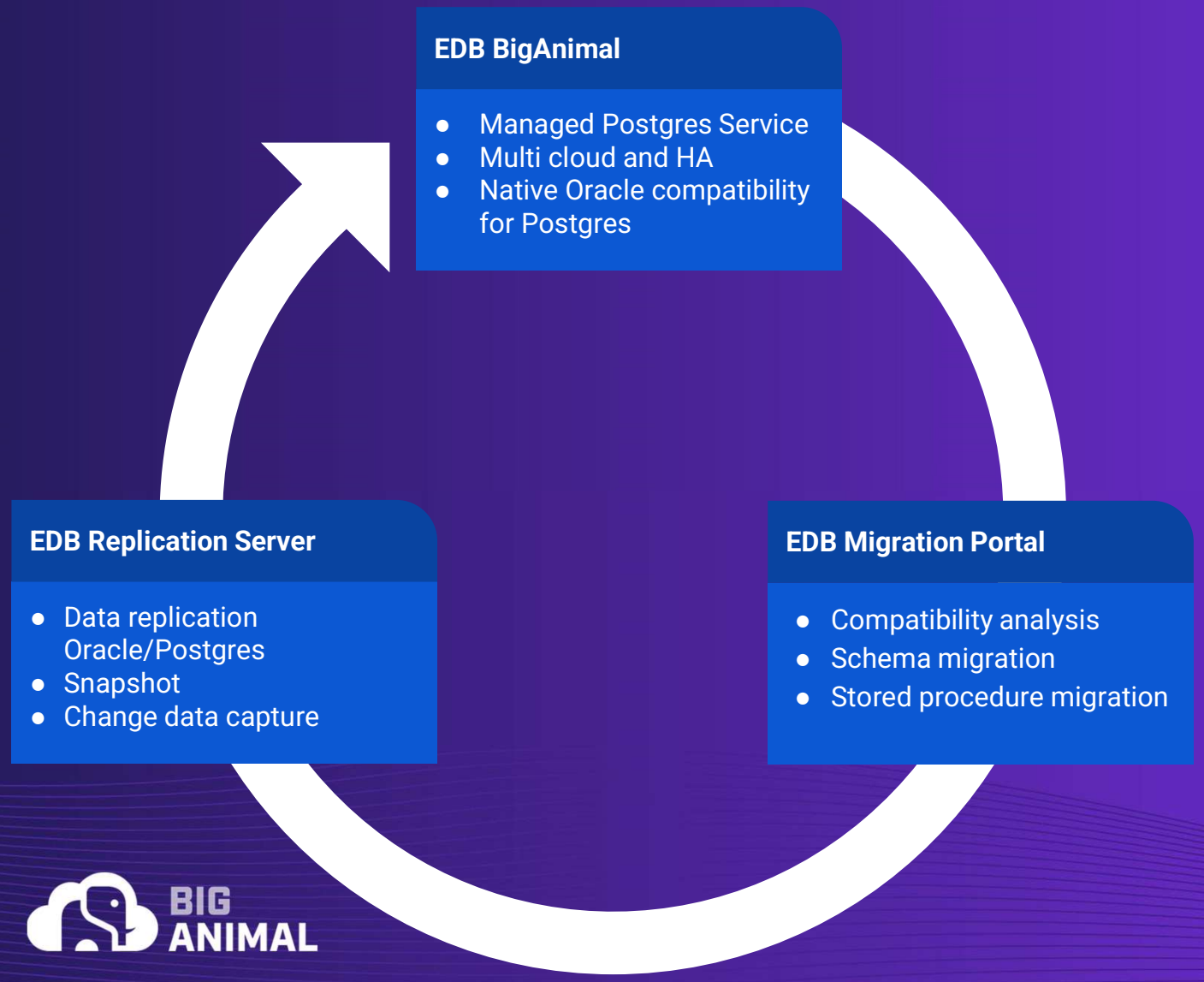

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Oracle Compatibility in EDB BigAnimal

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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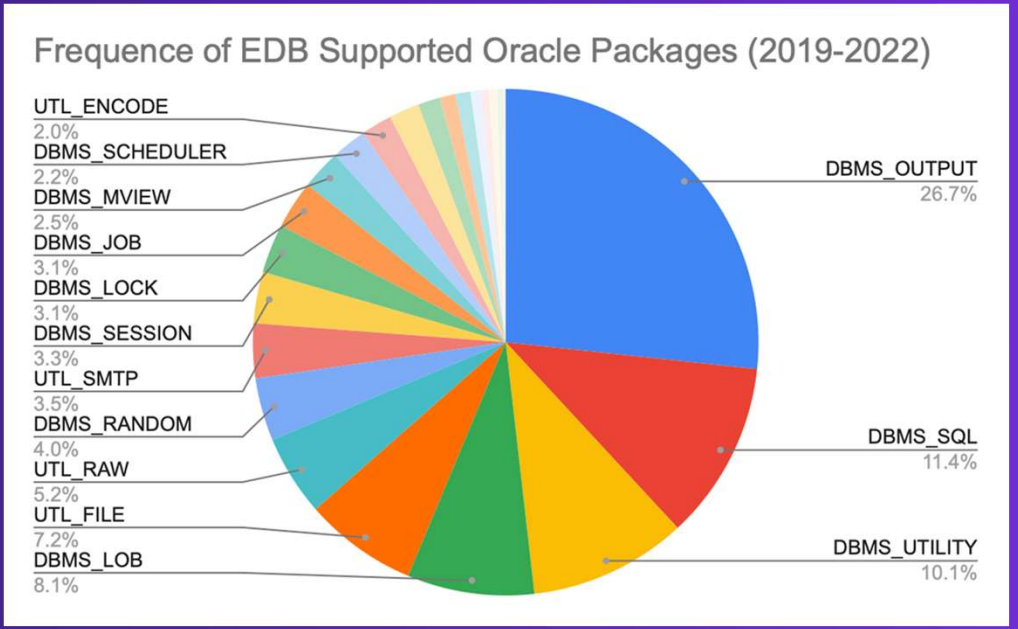
Oracle Compatibility Observations - Packages

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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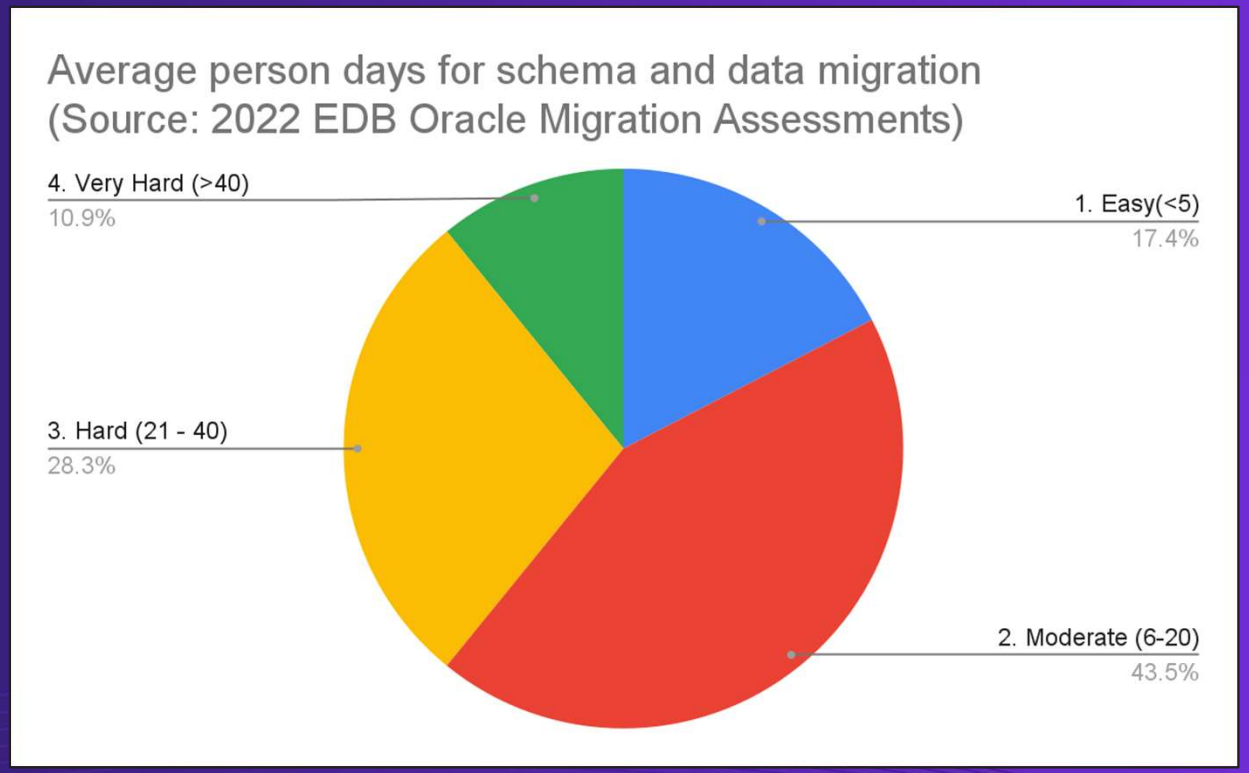
Oracle Compatibility Observations - Effort Assessment

- 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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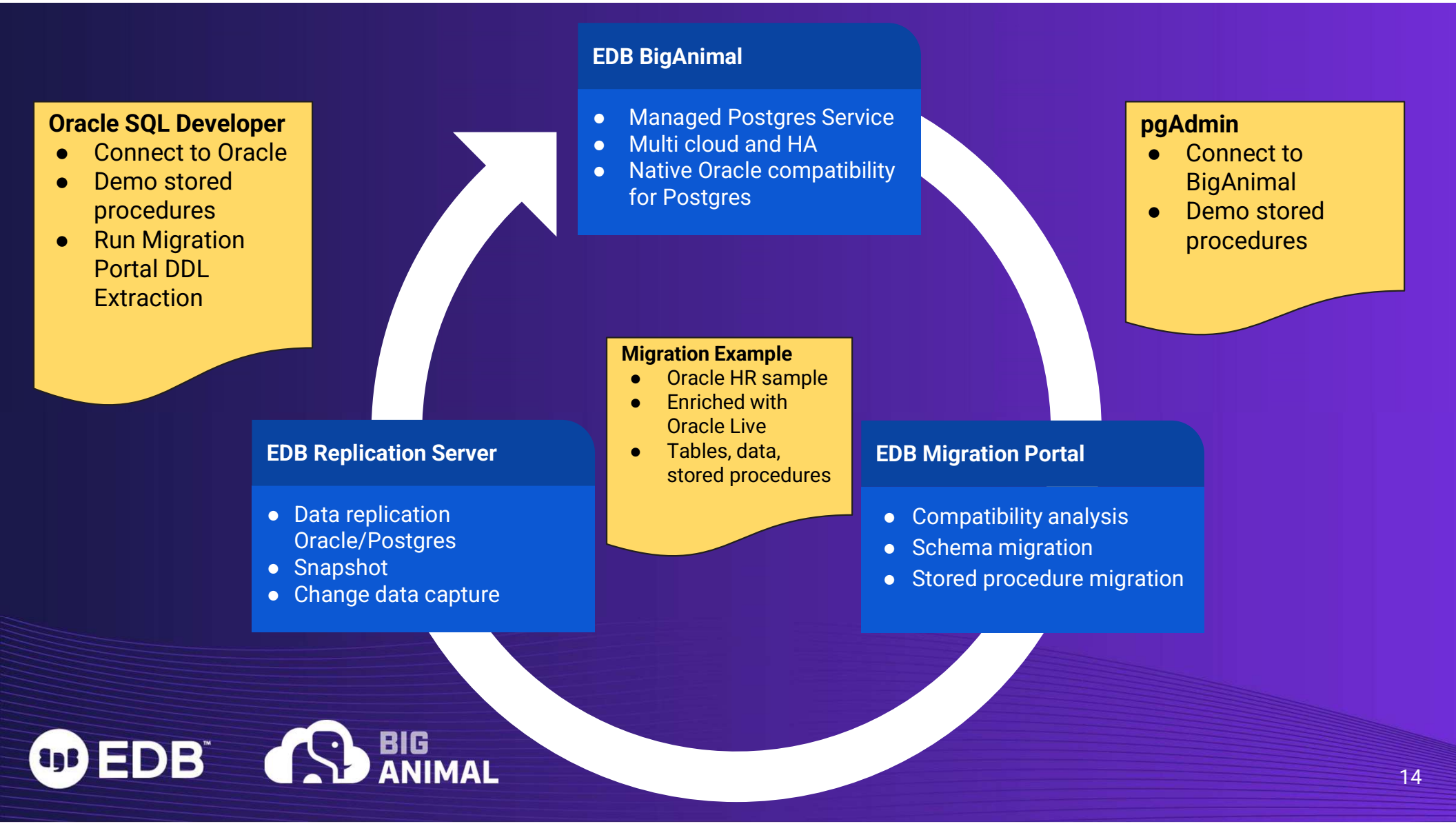
EDB BigAnimal
Managed Postgres Service
Multi cloud and HA
Native Oracle compatibility for Postgres
Oracle SQL Developer
Connect to Oracle
Demo stored procedures
Run Migration Portal DDL Extraction
pgAdmin
Connect to BigAnimal
Demo stored procedures
Migration Example
Oracle HR sample
Enriched with Oracle Live
Tables, data, stored procedures
EDB Replication Server
Data replication Oracle/Postgres
Snapshot
Change data capture
EDB Migration Portal
Compatibility analysis
Schema migration
Stored procedure migration
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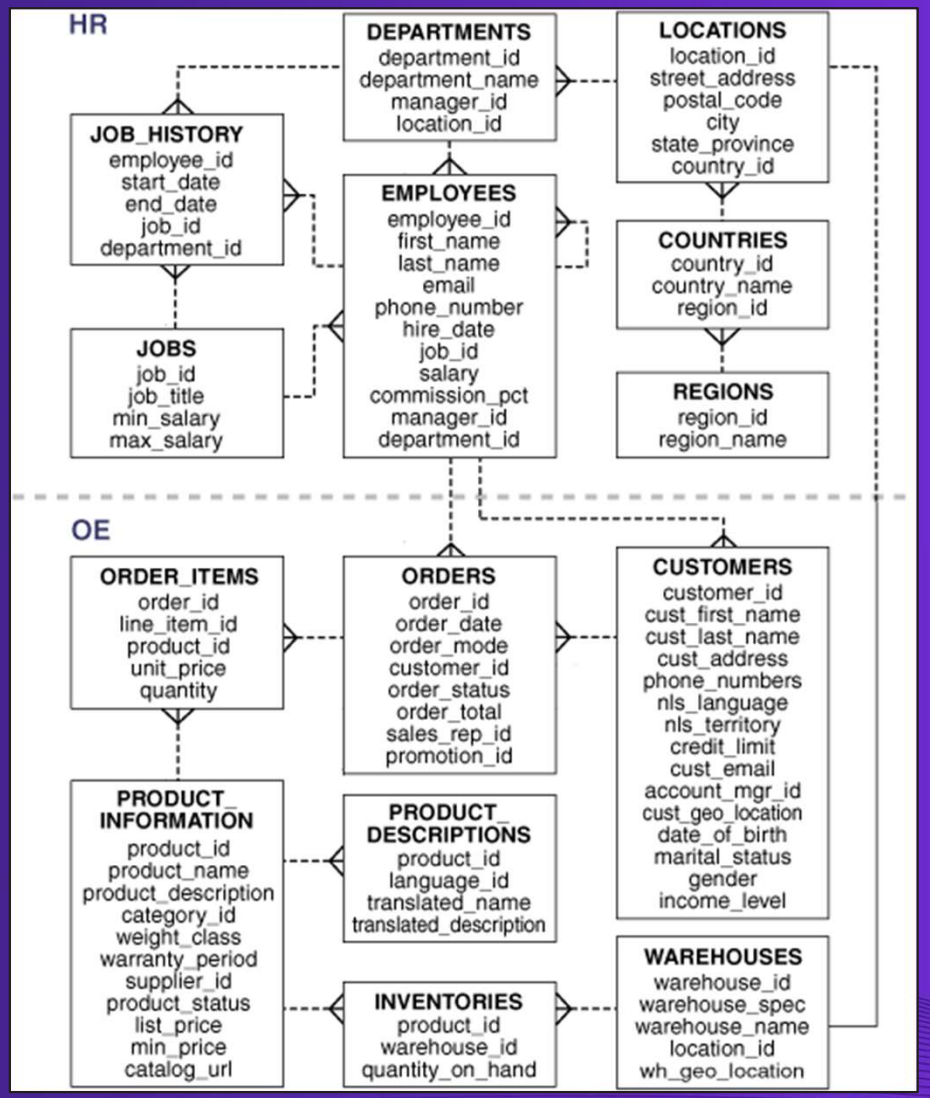
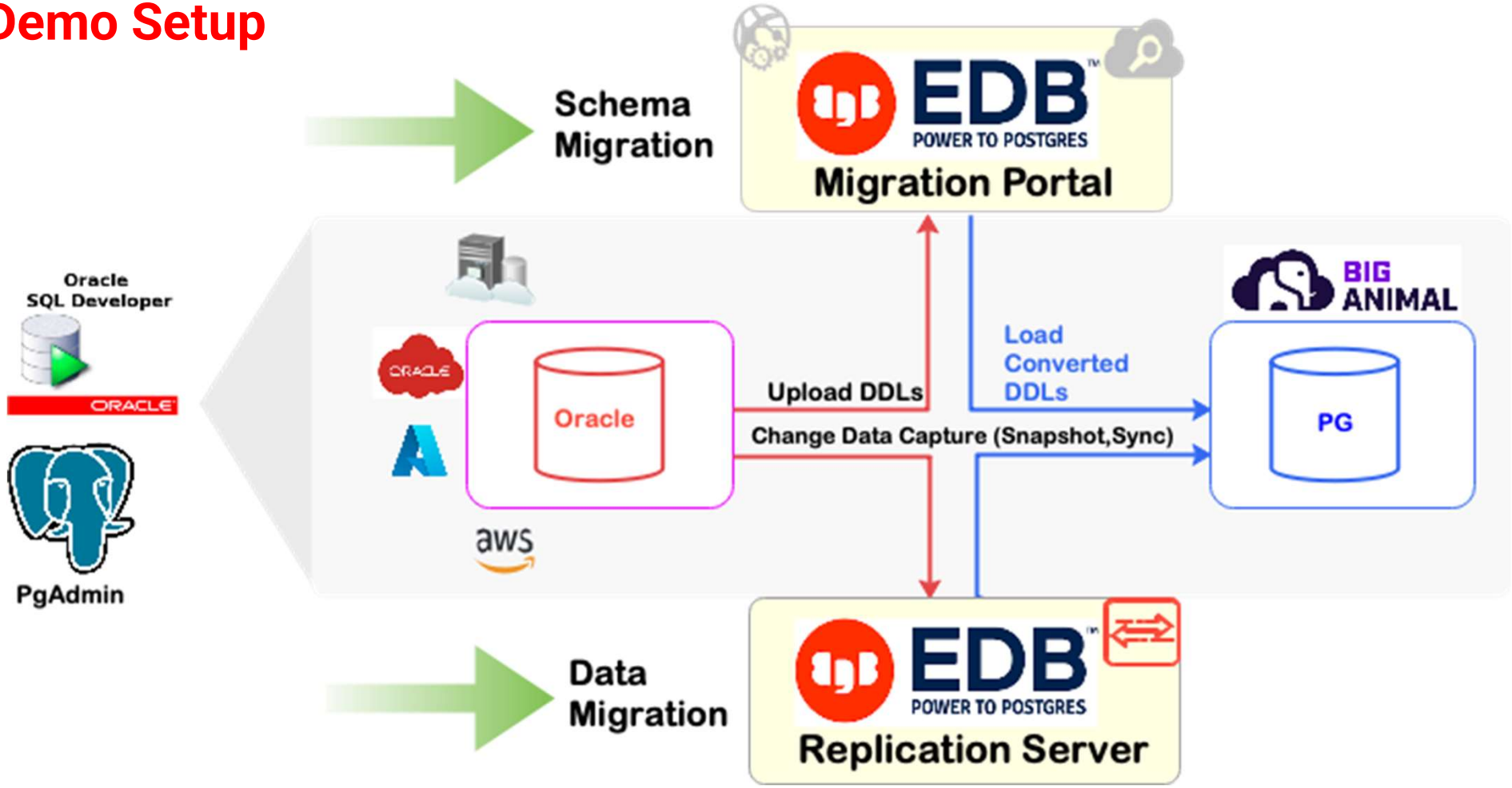
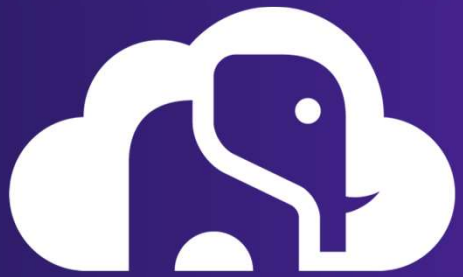
HR Schema

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



Demo Setup


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



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DEMO

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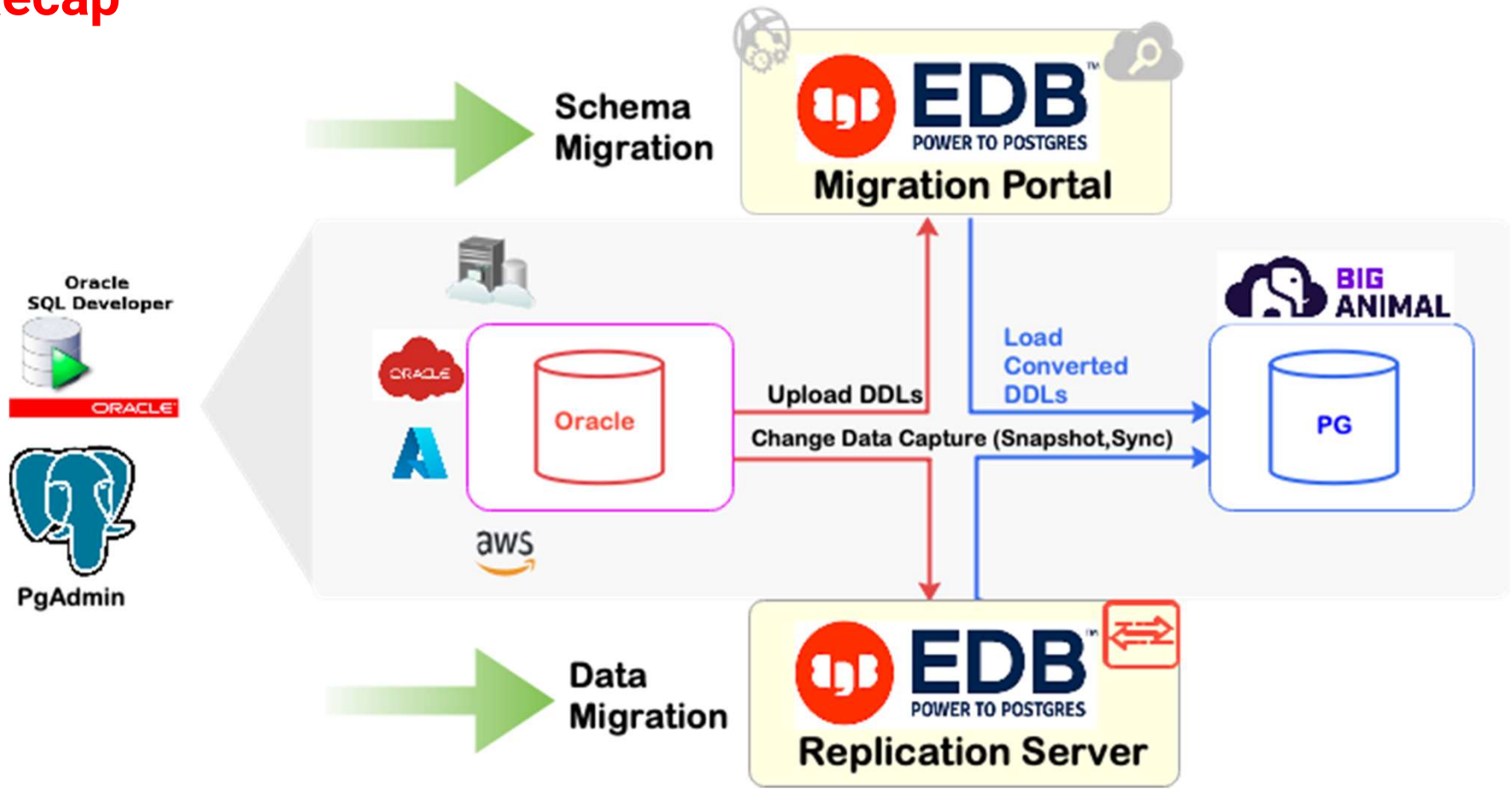
Recap


Schema
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DDLs
BIG
ANIMAL
PG
aws
Data
Migration
EDB
POWER TO POSTGRES
Replication Server

What makes a good migration candidate?

- 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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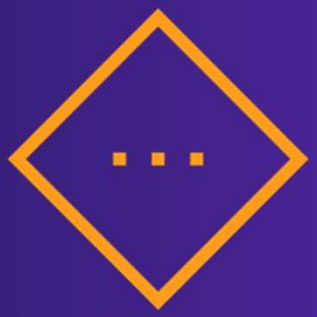
Typically more difficult migration candidates



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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