
EDB
POSTGRES
Postgres in a world of DevOps
MOVE FAST, OR …
MARC LINSTER
SVP, PRODUCT DEVELOPMENT AND SUPPORT

As every company becomes a software company, DevOps is the new lean manufacturing.

PaaS

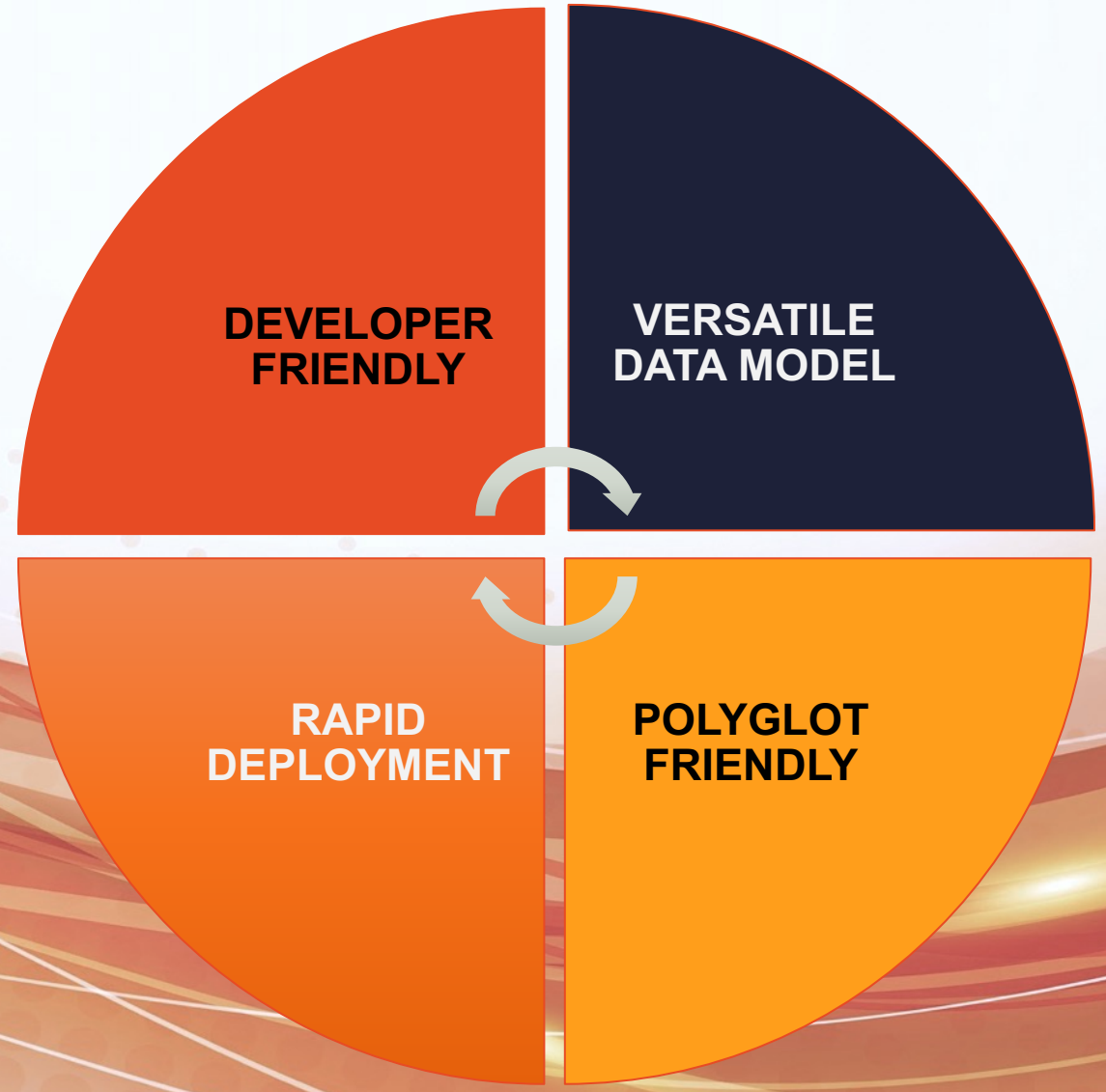
CICD

Microservices

Containers

EDB POSTGRES

What does it mean for the database?



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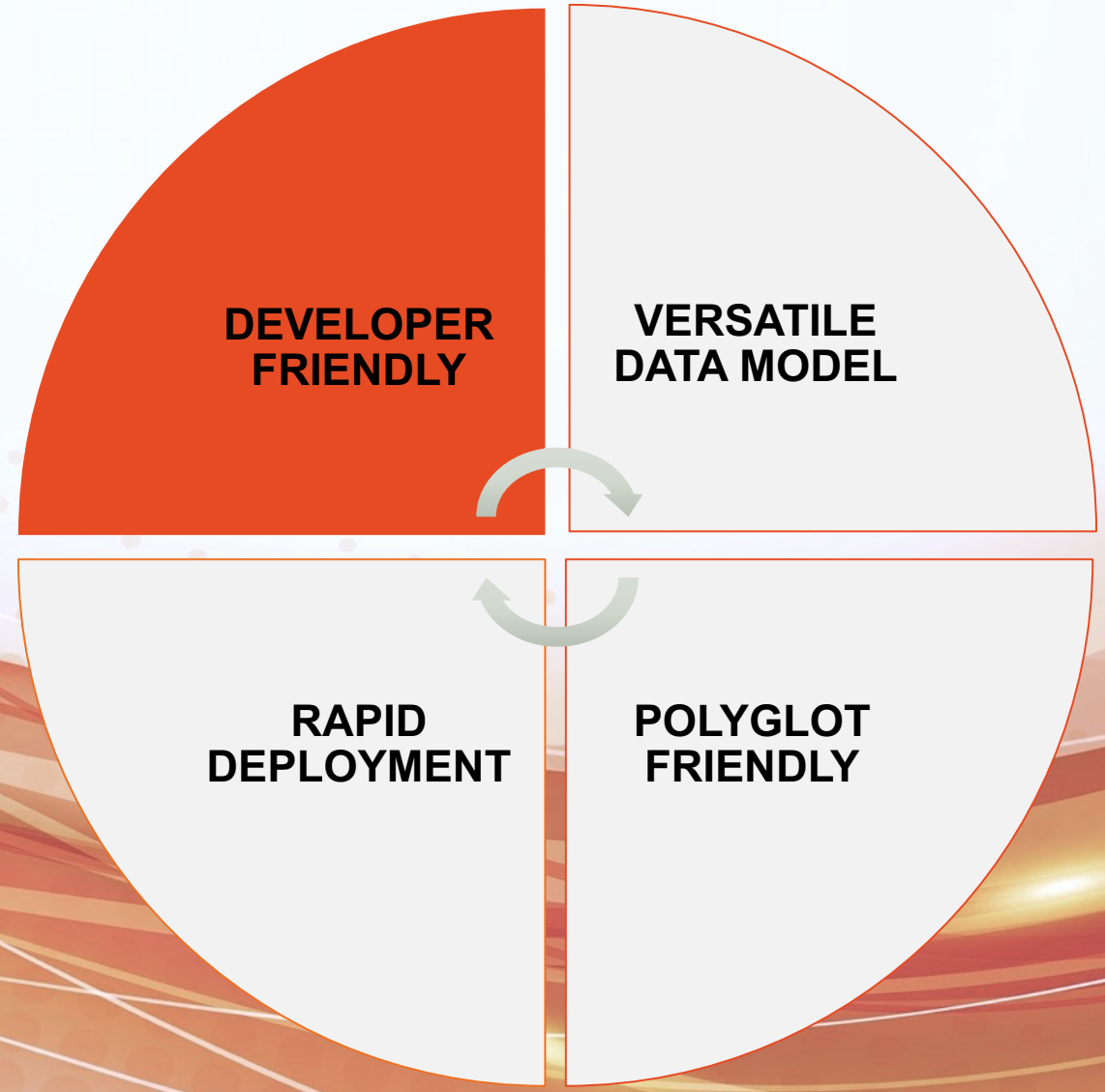

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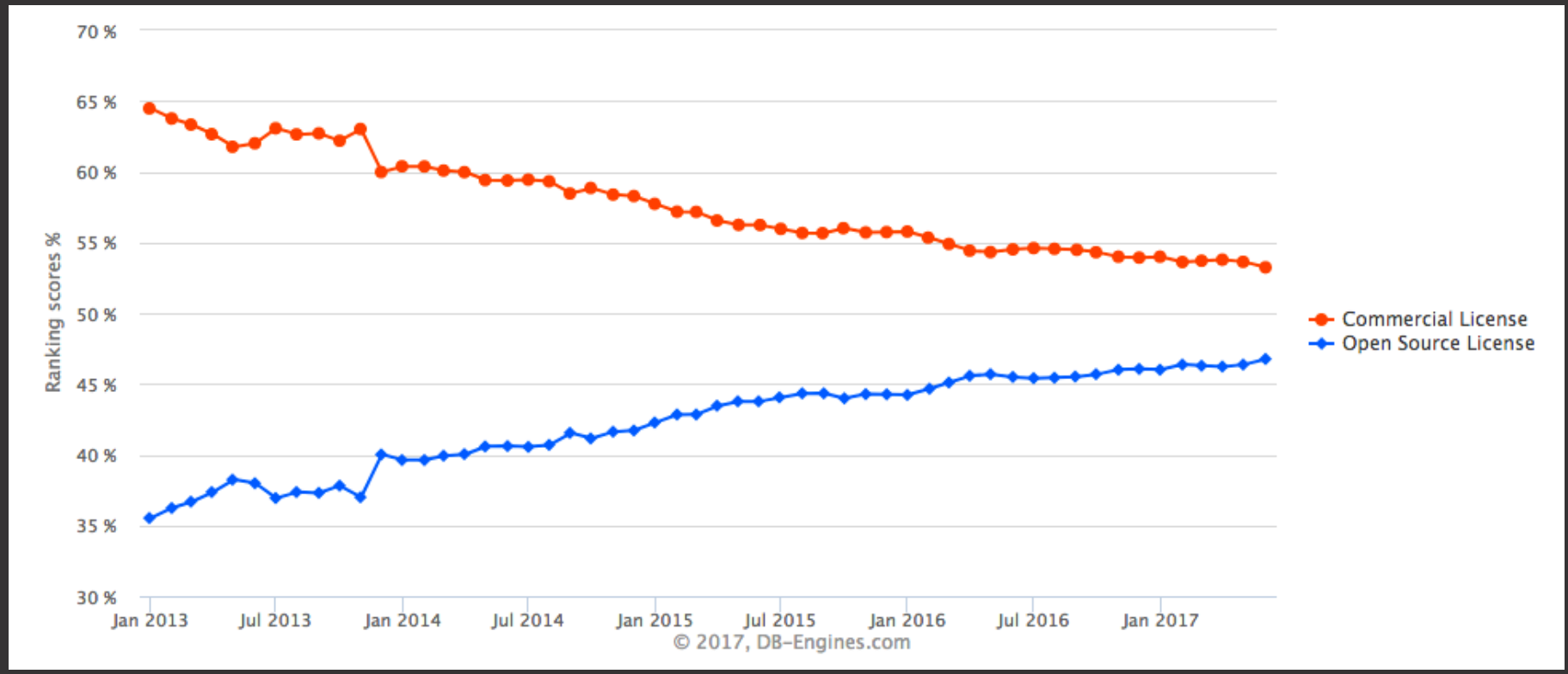
Popularity trend driven by cost and flexibility



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MOST USED

Databases

% of This Category | % of All Respondents | % of Professional Developers

MySQL	43.9%
SQL Server	34.1%
PostgreSQL	23.3%
SQLite	21.6%
MongoDB	18.5%
Oracle	14.0%
Redis	13.6%
Cassandra	2.9%

stackoverflow

27,612 responses; select all that apply. Shown as a percentage of the respondents who chose at least one language, framework, database, or platform.

MOST LOVED

Most Loved, Dreaded, and Wanted Databases

Loved | Dreaded | Wanted

stackoverflow

Redis	64.8%
PostgreSQL	60.8%
MongoDB	55.0%
SQL Server	54.2%
Cassandra	49.9%
MySQL	49.6%
SQLite	47.2%
Oracle	36.9%

% of developers who are developing with the language or technology and have expressed interest in continuing to develop with it

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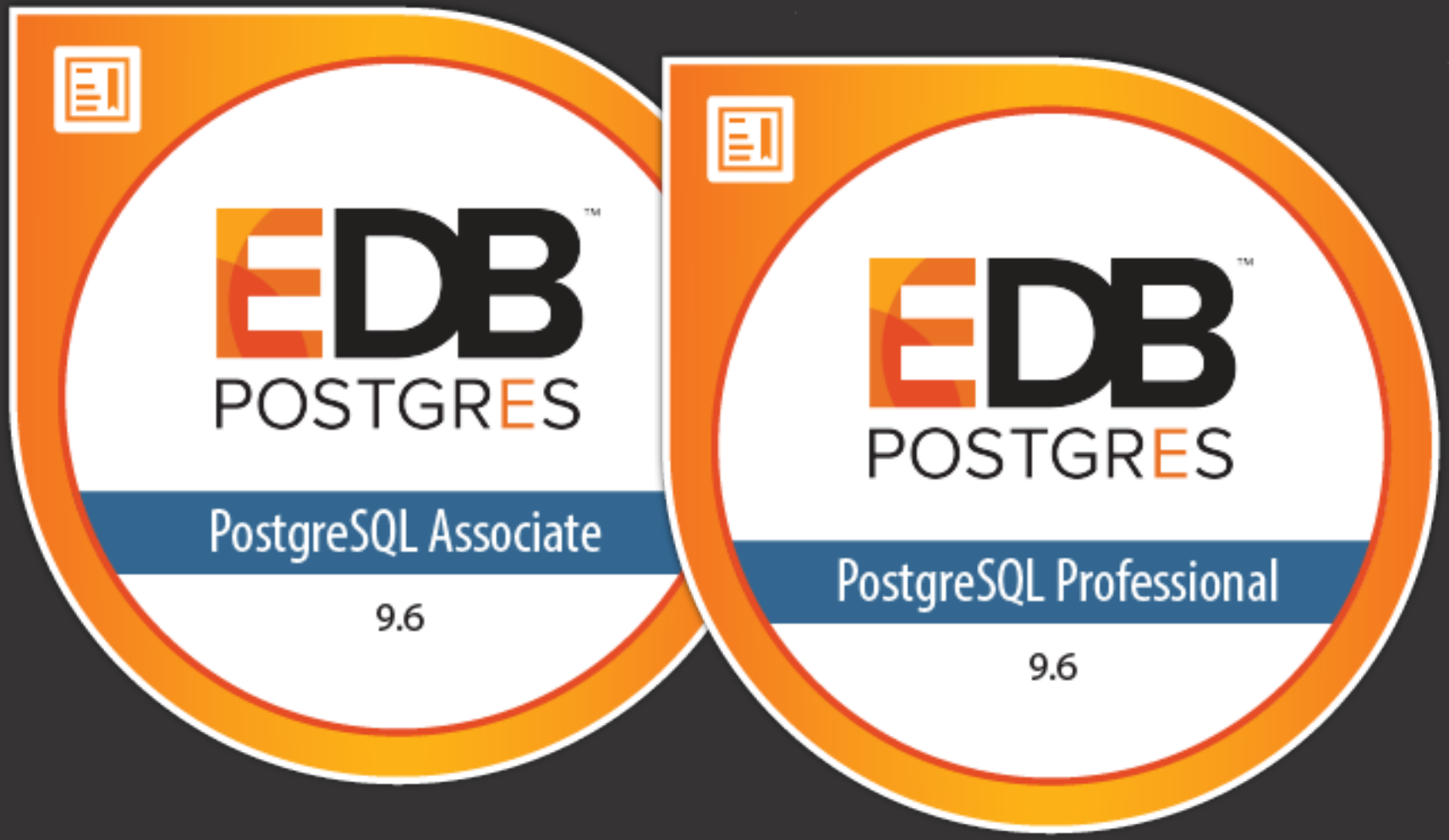
Industry recognition of skill proficiency



Postgres Certification

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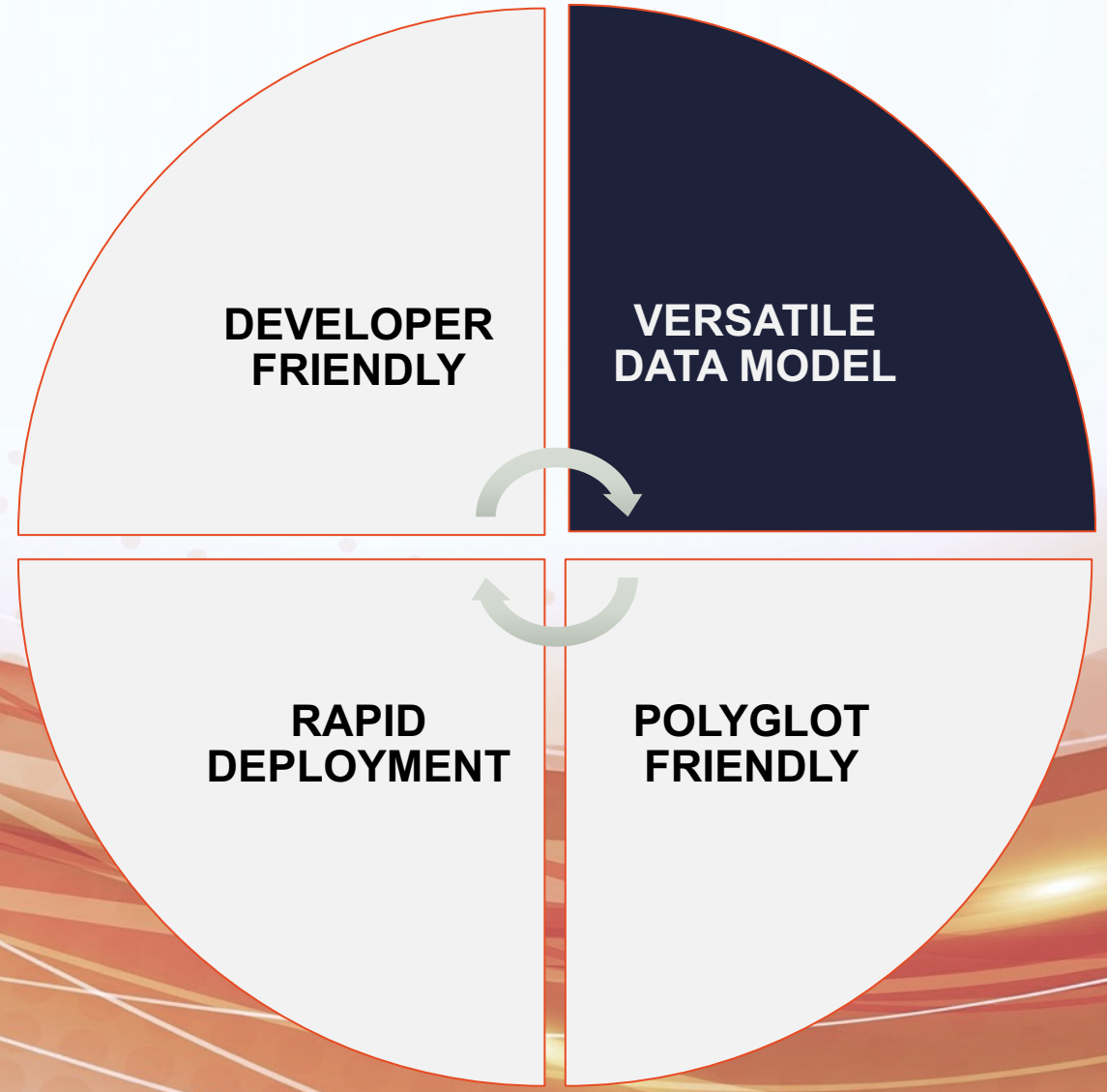

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Postgres: The most versatile DBMS

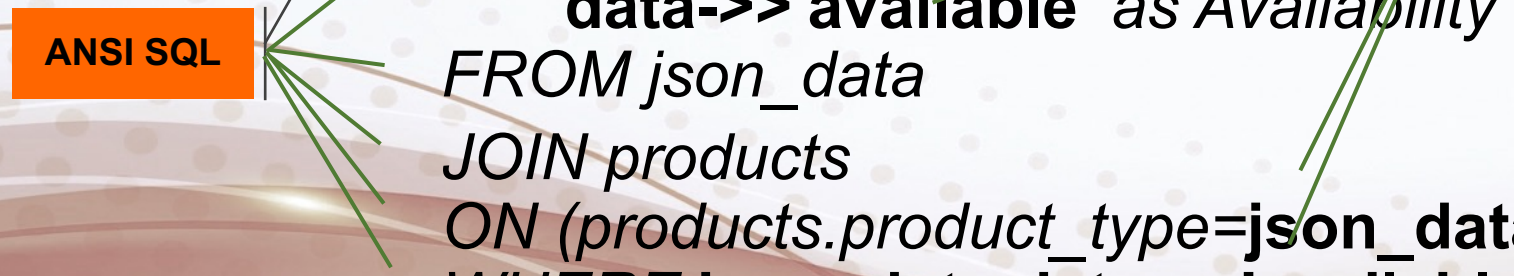
Runs on all platforms

Speaks every language

Not only SQL

Scales in both directions

Why choose between NoSQL and Relational?




```
SELECT DISTINCT
    product_type,
    data->>'brand' as Brand,
    data->>'available' as Availability
FROM json_data
JOIN products
ON (products.product_type=json_data.data->>'name')
WHERE json_data.data->>'available'=true;
```

```
 product_type    | brand    | availability
-----------------------+----------+--------------
 AC3 Phone       | ACME  | true
```

No need for programmatic logic to combine SQL and NoSQL in the application.

Postgres does it all.

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START SCHEMALESS

- Leverage structure as it emerges
- Support agile, iterative development
- Create data models where they provide value

LEVERAGE JSONB

- Leverage JSONB for rapidly changing data models
  - Example: address data records
    - Conventional columns: First Name, Last Name
    - JSONB: Contact Information
    - Phone numbers (home, cell, car, weekend, boyfriend…)
    - Email (work, private, spam …)

AVOID PENALTY

- Avoid the DDL penalty for adding columns

Why not just SQL?

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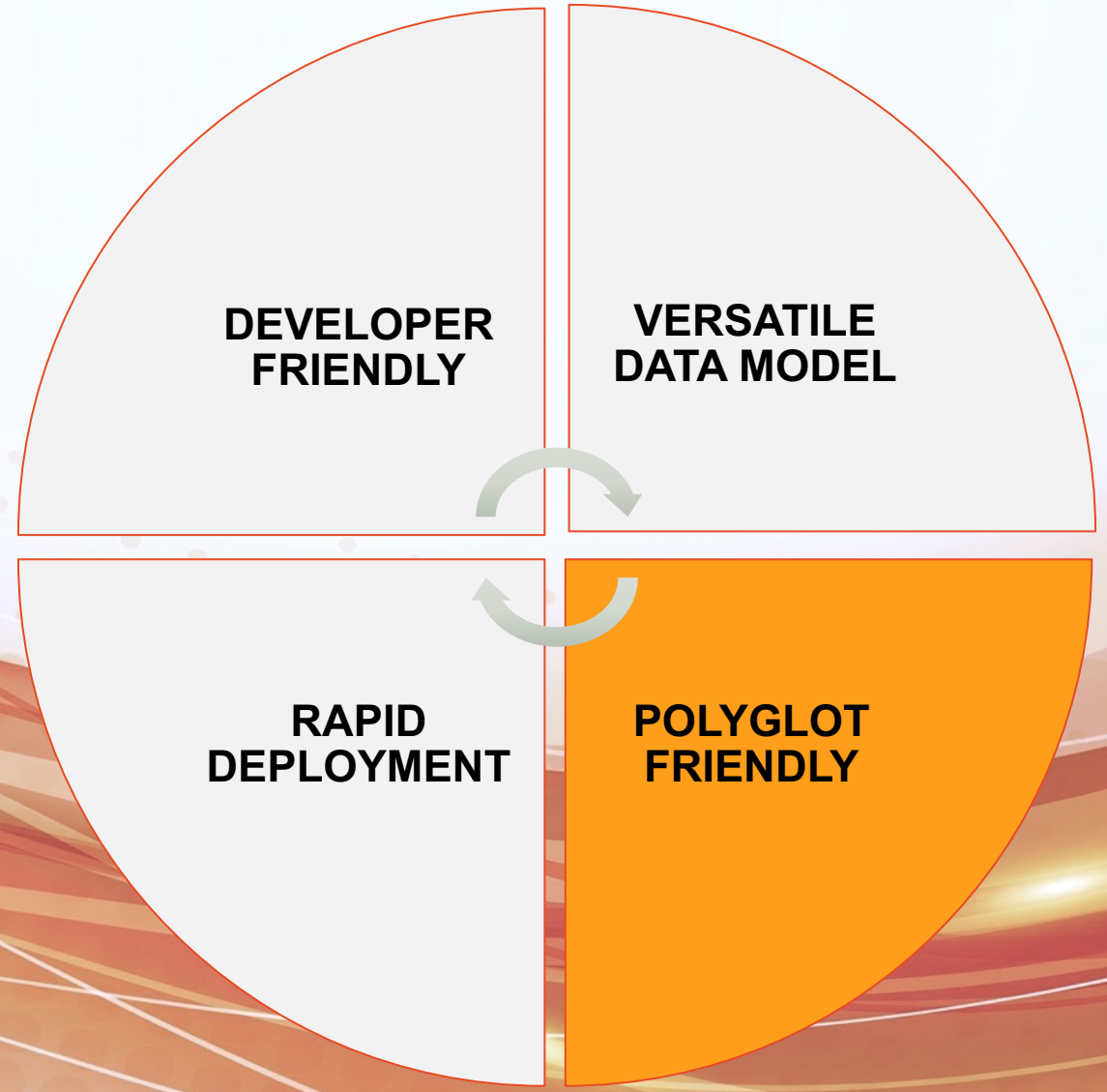

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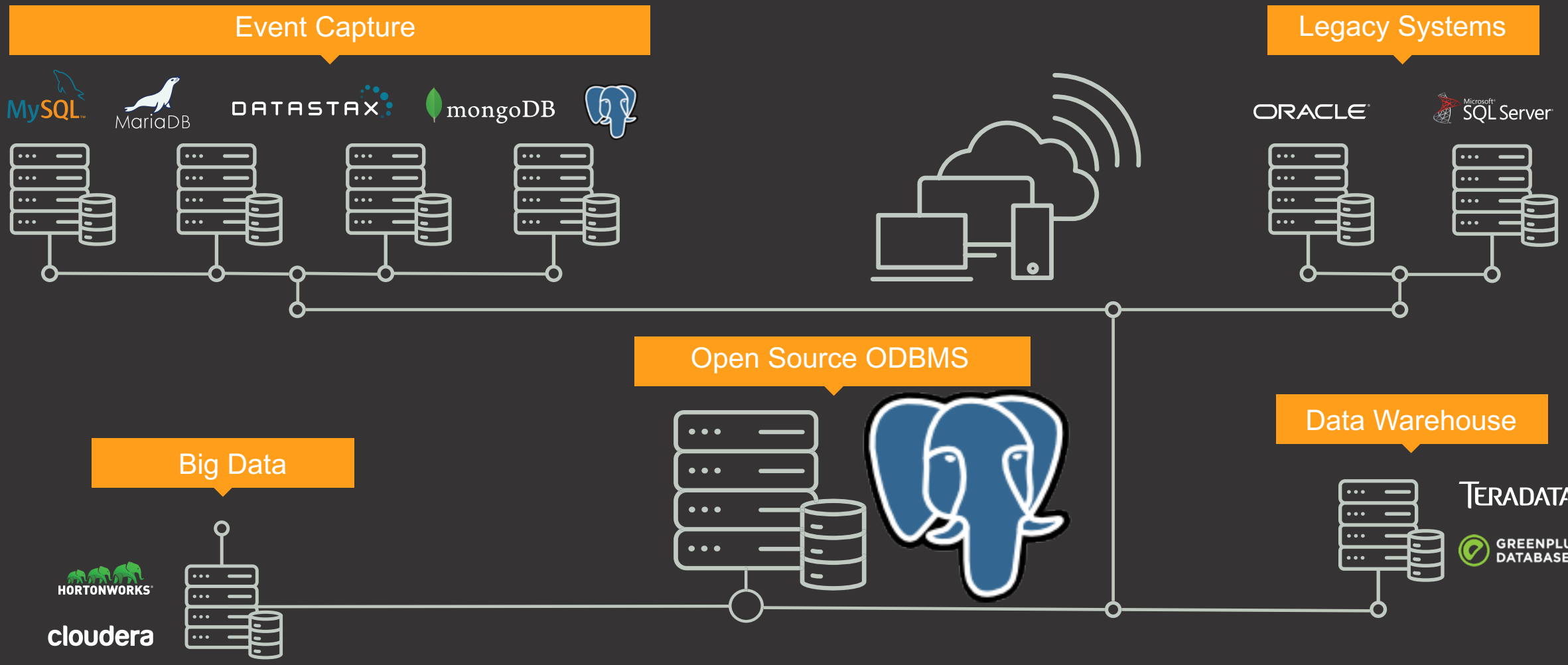
Postgres in the Polyglot Ecosystem



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FDW IMPLEMENTS SQL/MED ("SQL MANAGEMENT OF EXTERNAL DATA")

PostgreSQL 9.1 - read-only support

PostgreSQL 9.3 – read/write support

PostgreSQL 9.6 – pushdown joins, sorts, UPDATE, DELETE

PostgreSQL 10 - aggregate pushdown

FDW: *Makes data on other servers (or services) look like tables in Postgres. Available for many data sources (MongoDB, MySQL, HDFS, Spark, …)*

Foreign Data Wrappers – Making Polyglot Happen

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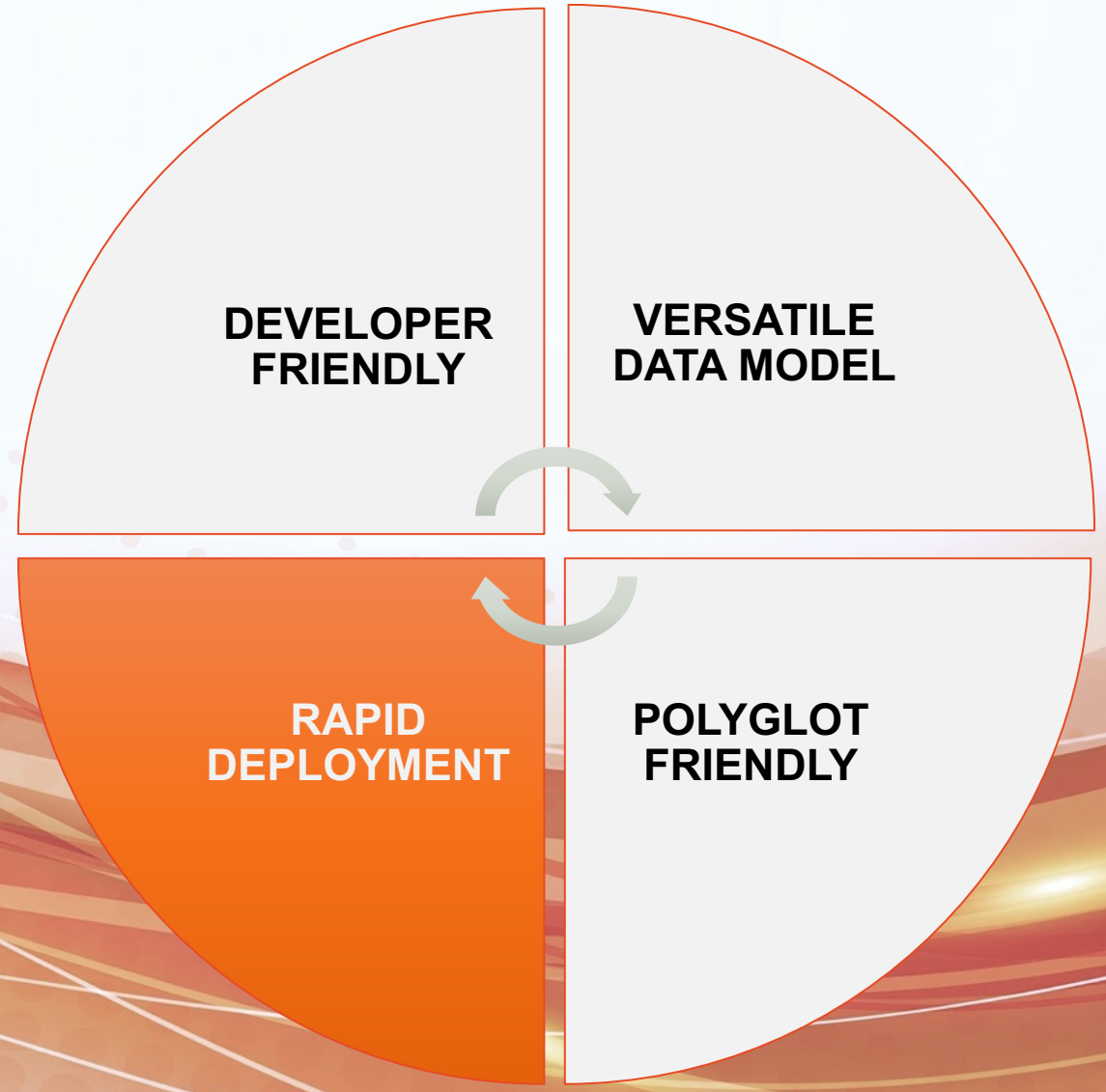

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CLOUD	DBaaS	Micro Services

• Public (AWS, Google, Azure, Aliyun, …)
• Private (OpenStack, VCloud, Puppet/Chef on Virtualization, Pivotal Cloud Foundry, Container/Kubernetes/OpenShift)
	• Stop deploying databases
	  • Deploy clusters w. HA, DR, self healing, scaling, etc.
	  • provide services, not databases
		• Large monolithic databases refactored into transaction sets
		• Applications get refactored into micro-services
		• Deployment models move from VM/Bare Metal to DBaaS and Containers

Rapid Deployment

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SUPPORTING DevOps WITH DBaaS

Address the tension between developers and operations

DEVELOPERS WANT | Agility | Speed to deploy | Flow through tool chain

OPERATIONS WANTS | Visibility | Control – *budgeted resources – cost –data models* | Efficient use of resources

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Dev & Ops Interaction Challenges

"I'll just use AWS…"

"I have to release it next month or else…"

"I need a NoSQL DB for my app to scale…"

"I need my environment NOW!"

"I only need it for a couple of weeks…"

"I JUST DON'T UNDERSTAND THESE DEVELOPERS..."

Dev & Ops Interaction Challenges

"My budget and my team are not getting any bigger.."

Why can't they just use Oracle?"

""We have no idea what they are putting on the public cloud.."

"We need time to do it right…"

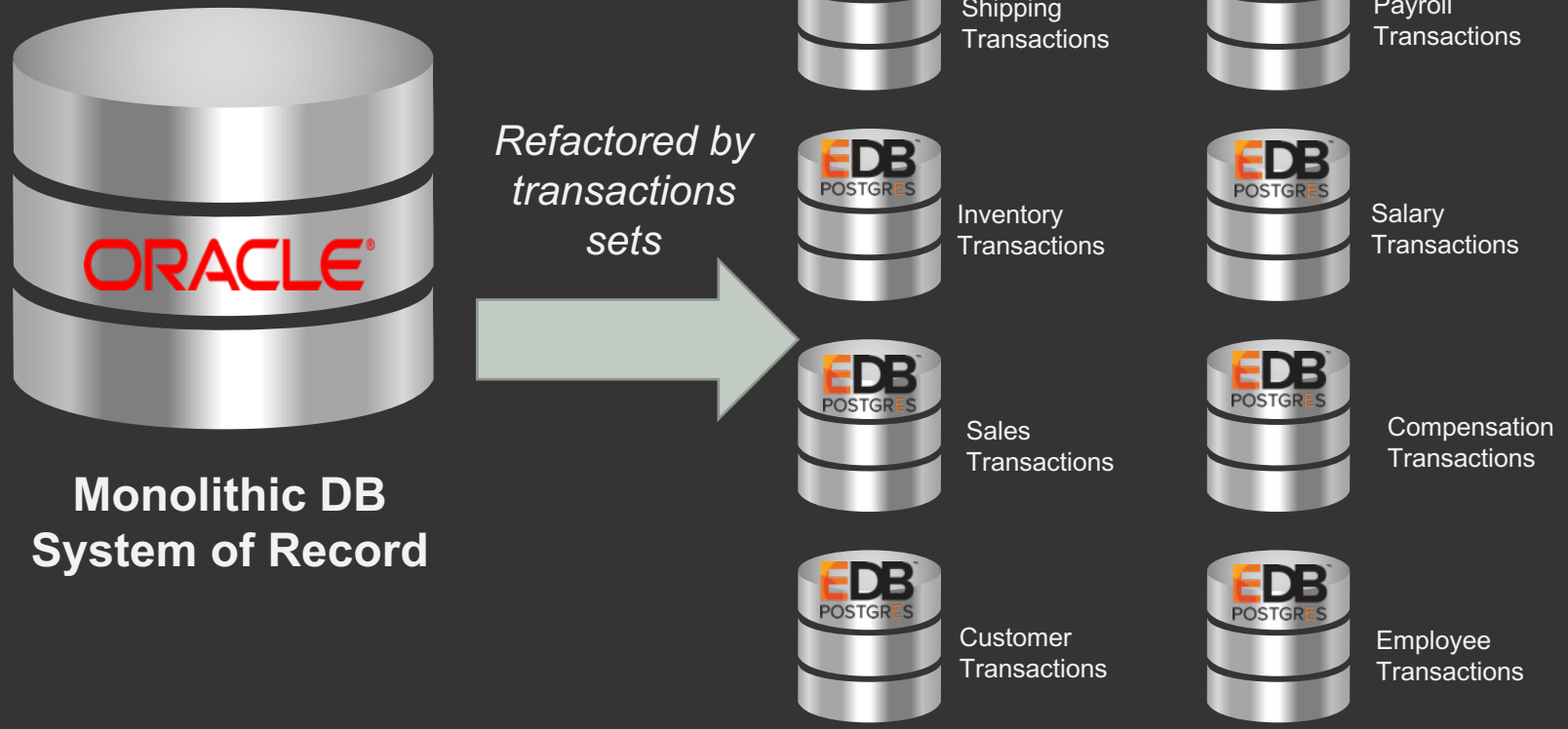
"I know that they are putting our customer data at risk…"

"THESE OPS PEOPLE JUST DON'T GET IT..."

Micro Services and Containers

MAJOR TRENDS

- Large monolithic databases refactored into transaction sets
- Applications get refactored into micro-services
- Deployment models move from VM/Bare Metal to DBaaS and Containers



Key to DevOps

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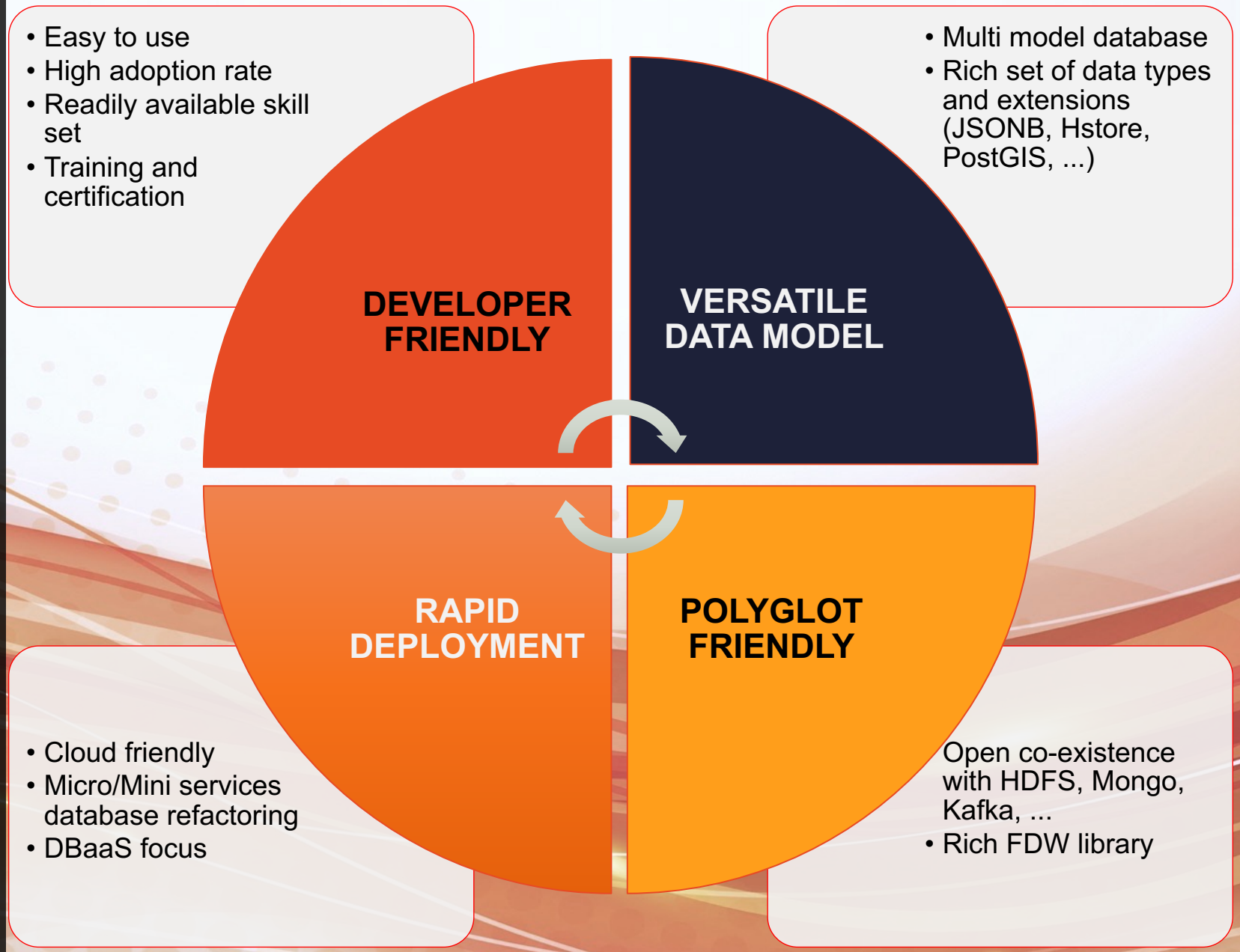

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THANK YOU