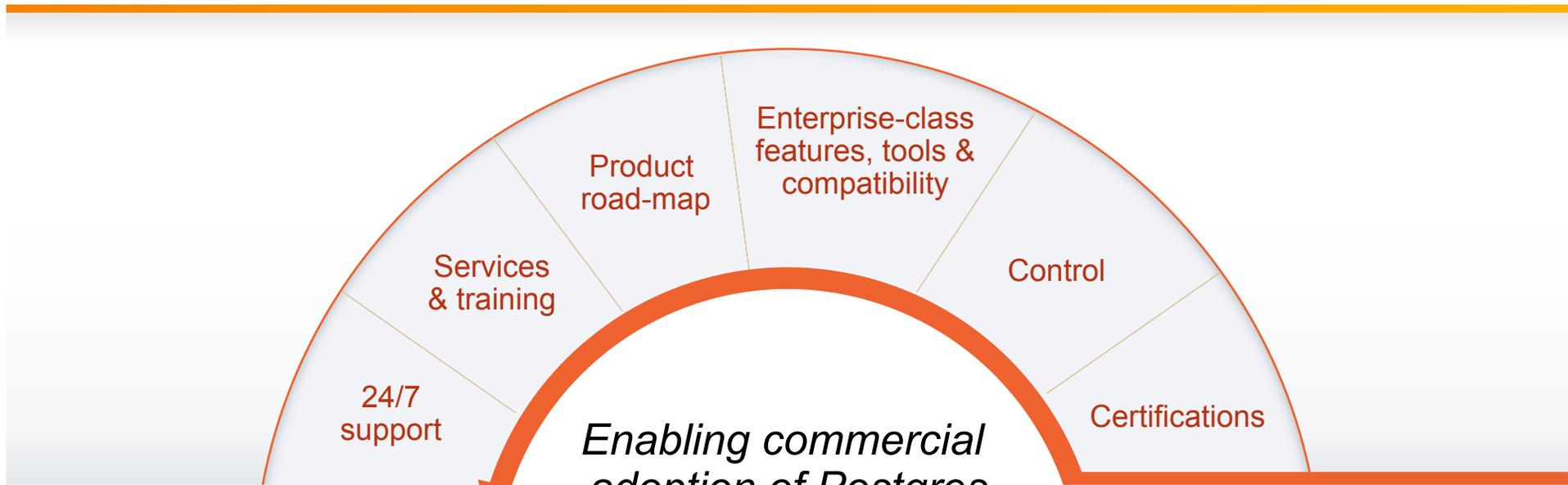




# The Centerpiece for Modernizing IT Infrastructures and Business Transformation

Greg Bogochwalski, Prague  
November 2016



*Enabling commercial adoption of Postgres*

**POSTGRES**  
innovation

**ENTERPRISE**  
reliability



# EDB Customers

*EDB currently has over 3,700 total customers including 85 of the Fortune 500 and 169 of the Forbes Global 2000*



# Key Strategic Partners



Multi-platform DBMS partner  
2013 AllianceOne Partner of the Year

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Lead open source DBMS for Power Linux

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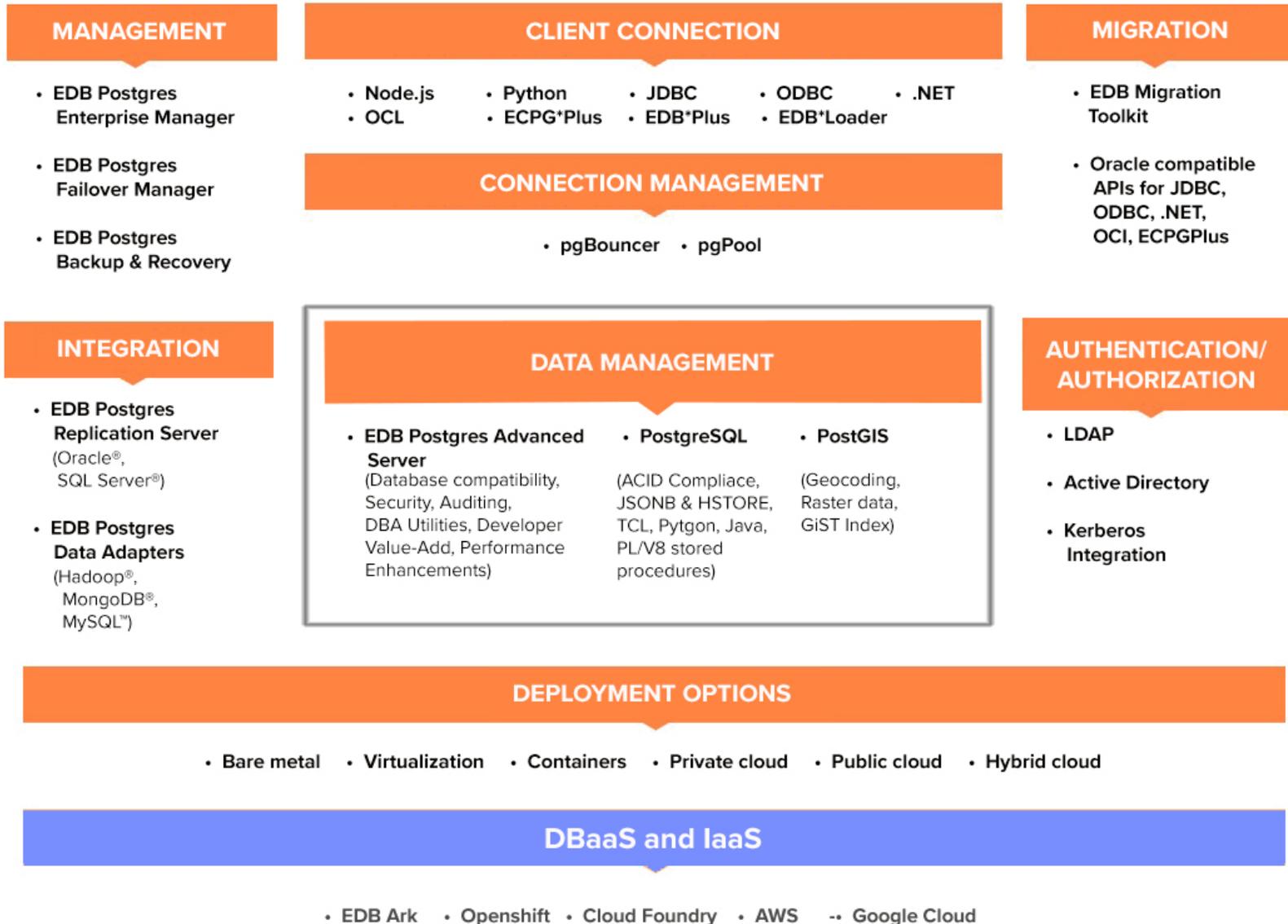
Global sales & technology partner

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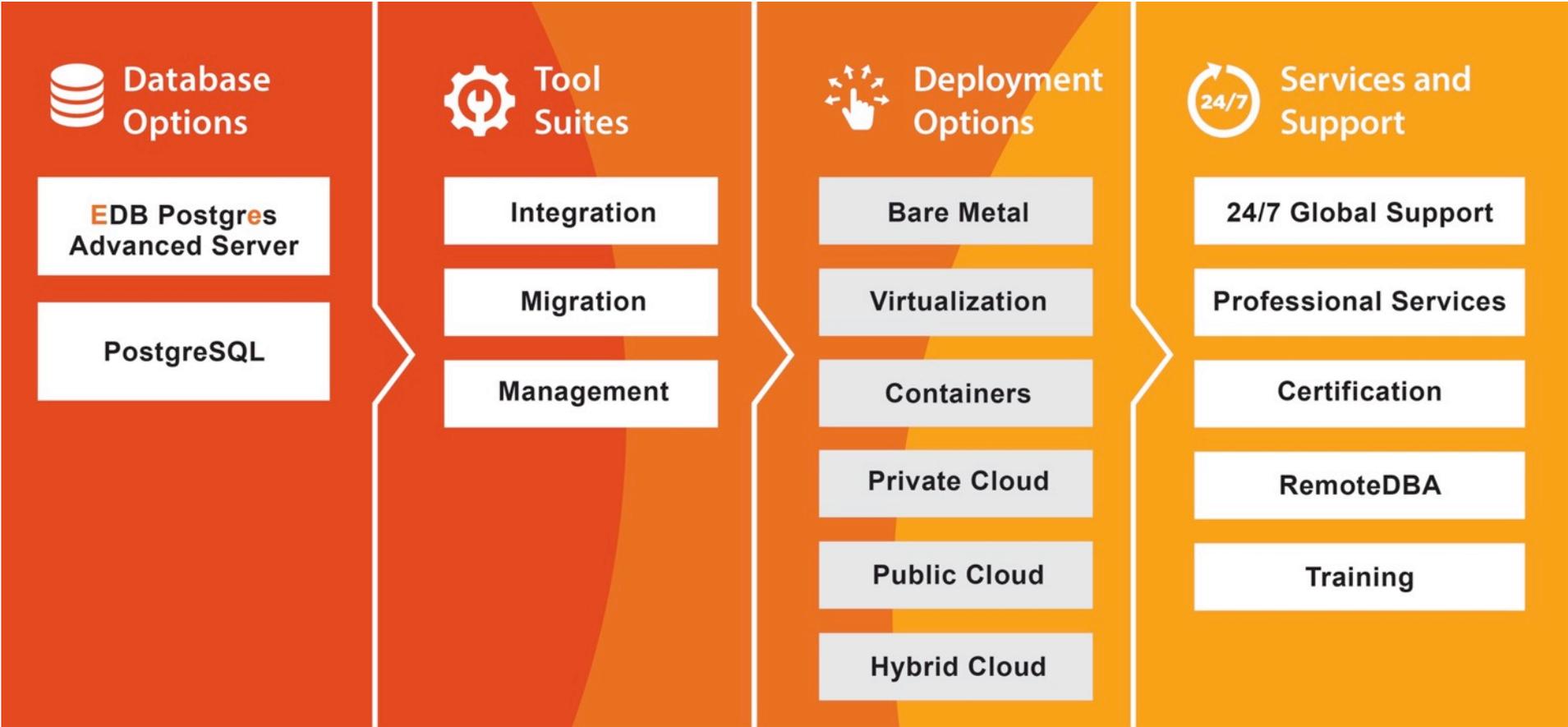


Certified DBMS provider

# EDB Technologies



# EDB Postgres Platform



# The EDB Postgres Platform - Subscriptions

Capabilities	Components	Subscriptions			Benefits
	EDB Postgres...	Enterprise	Standard	Developer	
<b>Database</b>					
Open source-based DB w. enterprise features (Oracle compatibility, performance & security)	Advanced Server	X		X	ACID compliant, reliable, high performance and extensible relational data store
Open source DB	PostgreSQL		X	X	
<b>Management Suite</b>					
GUI-based Management, Monitoring and Alerting	Enterprise Manager	X	X	X	Comprehensive management, monitoring, alerting and tuning with advanced backup/recovery operations and configurable database high availability;
Backup and Recovery	Backup and Recovery	X	X	X	
High Availability	Failover Manager	X	X	X	
<b>Integration Suite</b>					
Data Replication (SMR/MMR)	Replication Server (SQL Server, Oracle, Postgres)	X	X	X	Data Federation and Distributed Transaction Management capability to integrate the database with the enterprise data management environment. * Beta
Data Integration	Data Adapters (FDW)	X	X	X	
Distributed Transaction Management	XA Connector*	X		X	
<b>Migration Suite</b>					
Database Migration	Migration Toolkit (Oracle, Sybase, MS SQL)	X	X	X	Tools to migrate applications from commercial databases to open source-based databases
Database Migration Assessment Tool	Migration Assessment (Oracle)	X	X	X	DMA Tool is available as part of a services engagement

**24 x 7 Global Support**

**Professional Services, RemoteDBA, Training, Certification**

**Deployment Options: Bare Metal, Virtual, Public, Private & Hybrid Clouds**

# EDB POSTGRES

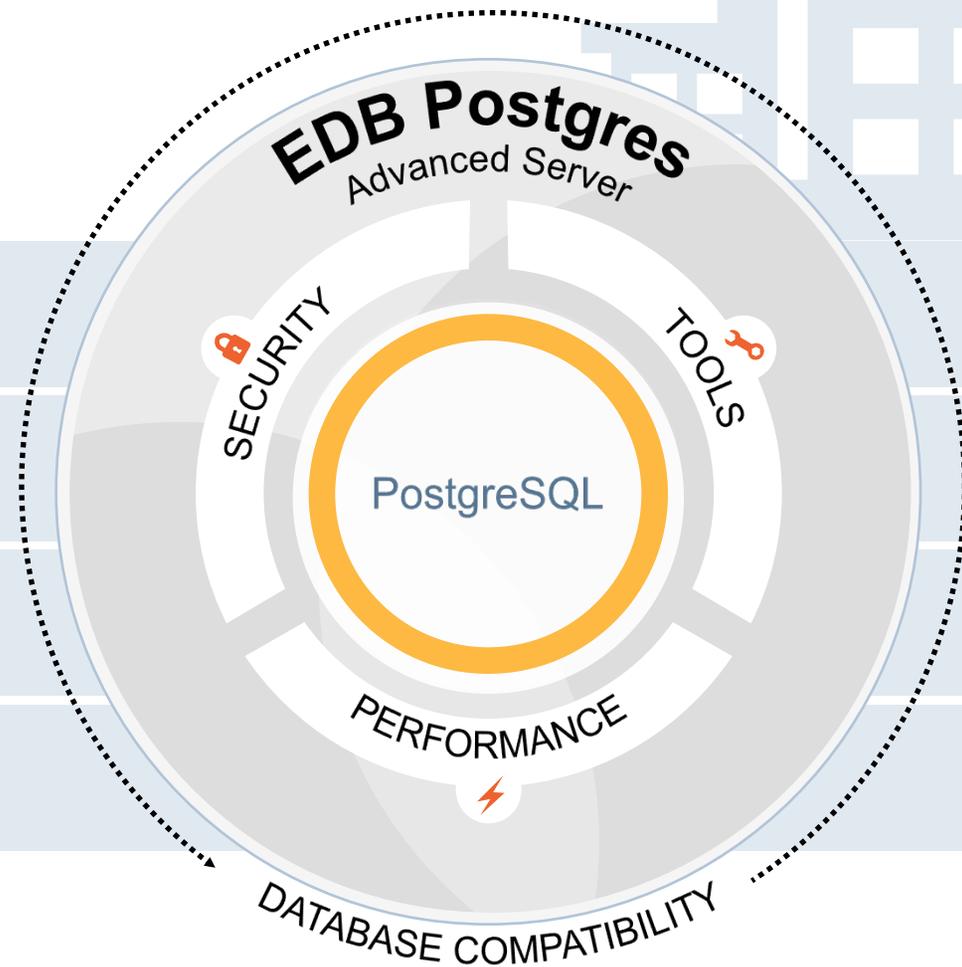
## ADVANCED SERVER

Security

Tools

Performance

Compatibility



# Database Compatibility for Oracle®

## *Compatible with:*

*Your people*



Oracle  
Developers

*Your apps*



Oracle  
Applications

*Your business*



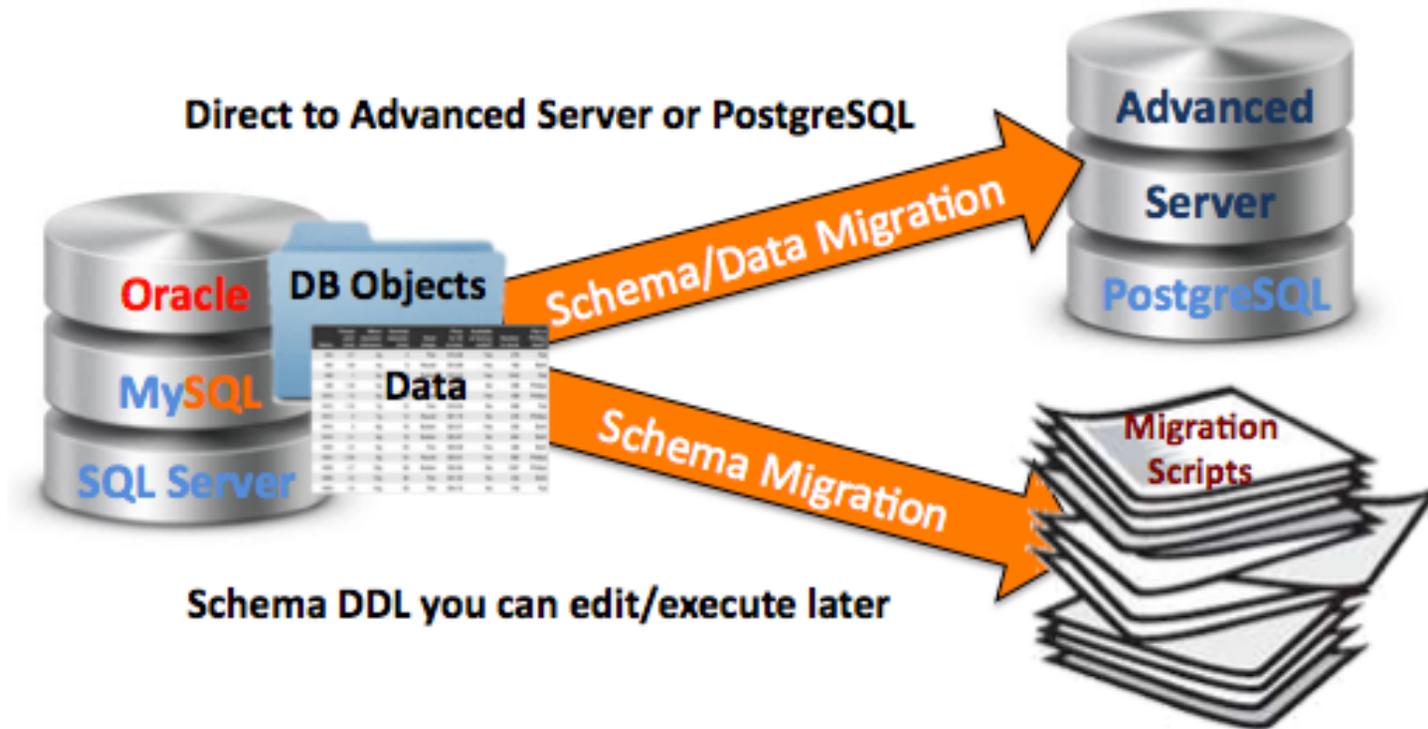
Lower Costs and  
Increased Agility

- Run applications written for Oracle virtually unchanged
- No need to retrain Oracle DBAs and developers
- Support for PL/SQL language and OCI interoperability
- Replication for easy sharing of data

*No disruption to your ongoing operations!*

# EDB

## Migration Toolkit



# Sample Customer Performance Stats

- Global mobile ad network
  - Largest database is 14TB
  - 1.2 billion transactions a day, 55K transaction per second
  - 400 concurrent users
  - Analyzes 240TB of data per day
- Online Brokerage Firm
  - 1 billion writes a day
  - 3,000 transactions per second
  - 800 concurrent users
- Global stock trade underwriter
  - Largest database is 8 TB
  - 6 to 10 million transactions per day
- Global consumer financial services provider
  - Example application database is 2 TB
  - 200K SELECT statements per second
  - 25K WRITE transactions per second

# EDB Postgres Advanced Server Deployment Strategies

Strategy	Benefits
New LOB Applications	<ul style="list-style-type: none"> <li>• Significant cost savings for non mission critical systems</li> <li>• Leverages all existing Oracle skills</li> <li>• Very low risk</li> </ul>
Oracle Replication Server	<ul style="list-style-type: none"> <li>• Significant cost savings</li> <li>• Leverages EDB Postgres Replication Server</li> <li>• Leverages all existing Oracle skills</li> <li>• Improves transaction and query performance</li> </ul>
Migrate / Rewrite non-Mission Critical Apps	<ul style="list-style-type: none"> <li>• Significant cost savings</li> <li>• Leverages all existing Oracle skills</li> <li>• Very low risk</li> </ul>
Migrate / Rewrite Mission Critical Apps	<ul style="list-style-type: none"> <li>• Biggest cost savings</li> <li>• Leverages all existing Oracle skills</li> <li>• Greatest deployment flexibility</li> </ul>

# Oracle vs. EDB TCO Comparison on x86

	Oracle Enterprise Edition	EDB Postgres Advanced Server
<b>License Fee Per Core</b>	(8 cores) (x86 processor)	(8 cores) (x86 processor)
Database	\$47,500	included in subscription
Partitioning	\$11,500	Included
Data Guard	\$11,500	Included
Diagnostics	\$5,000	Included
Total License Fee per Core	\$75,500	included in subscription
<b>Total License Fee per Server (CapEx) (0.5 core factor)</b>	<b>\$302,000</b>	<b>\$0</b>
Annual support/subscription cost per core	22% of License Fee	\$1,750 per core
<b>Annual Support/Maintenance per Server (OpEx)</b>	<b>\$66,440</b>	<b>\$14,000</b>
<b>Total 3 Year License and Support Cost</b>	<b>\$501,320</b>	<b>\$42,000</b>

No CAPEX • Annual OPEX reduction **79%** • 3 YR TCO cost savings **92%**

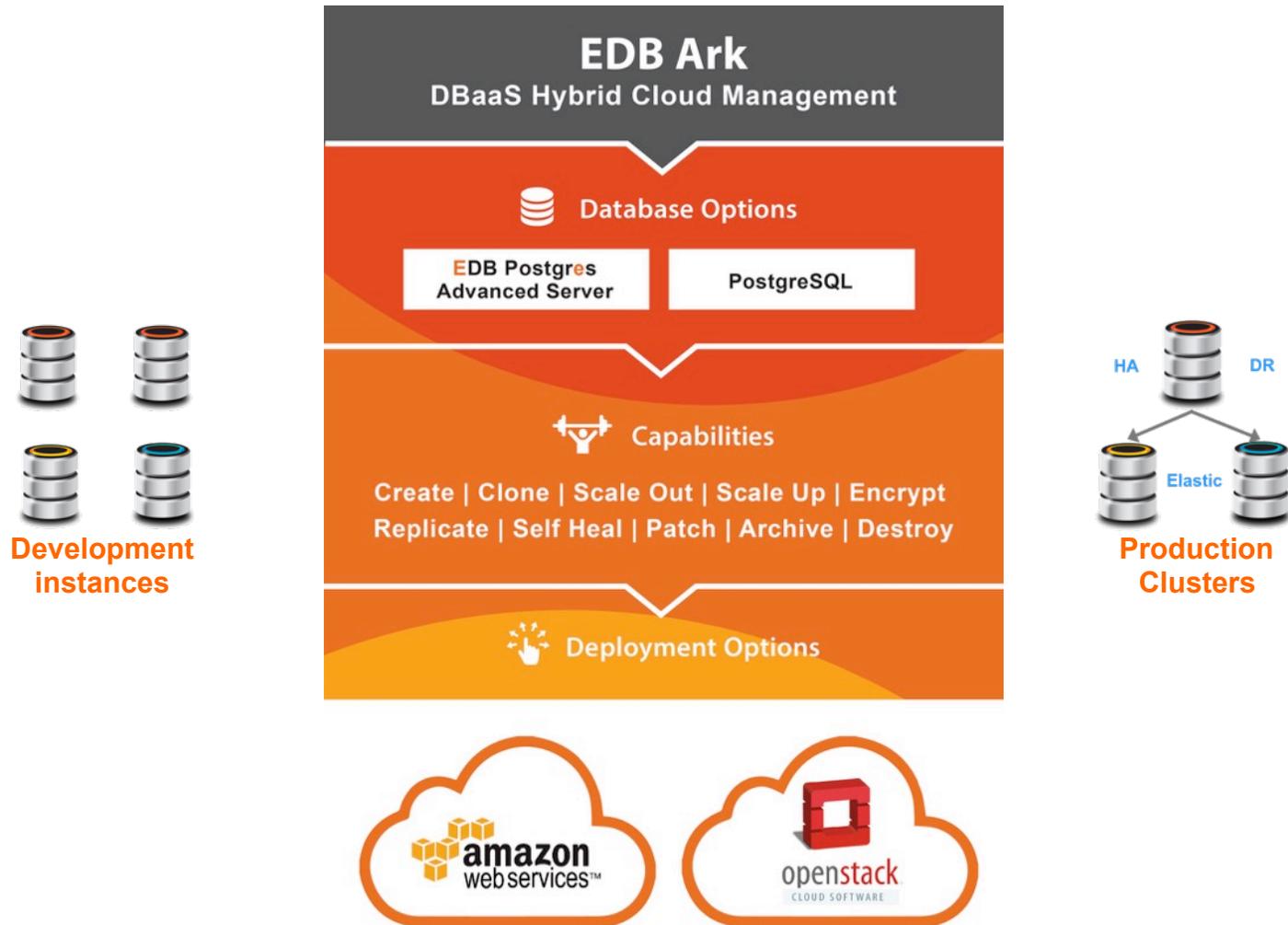


## EDB Ark

Database-as-a-Service for Hybrid Cloud Deployments of  
Postgres to Private and Public Clouds

# EDB Ark

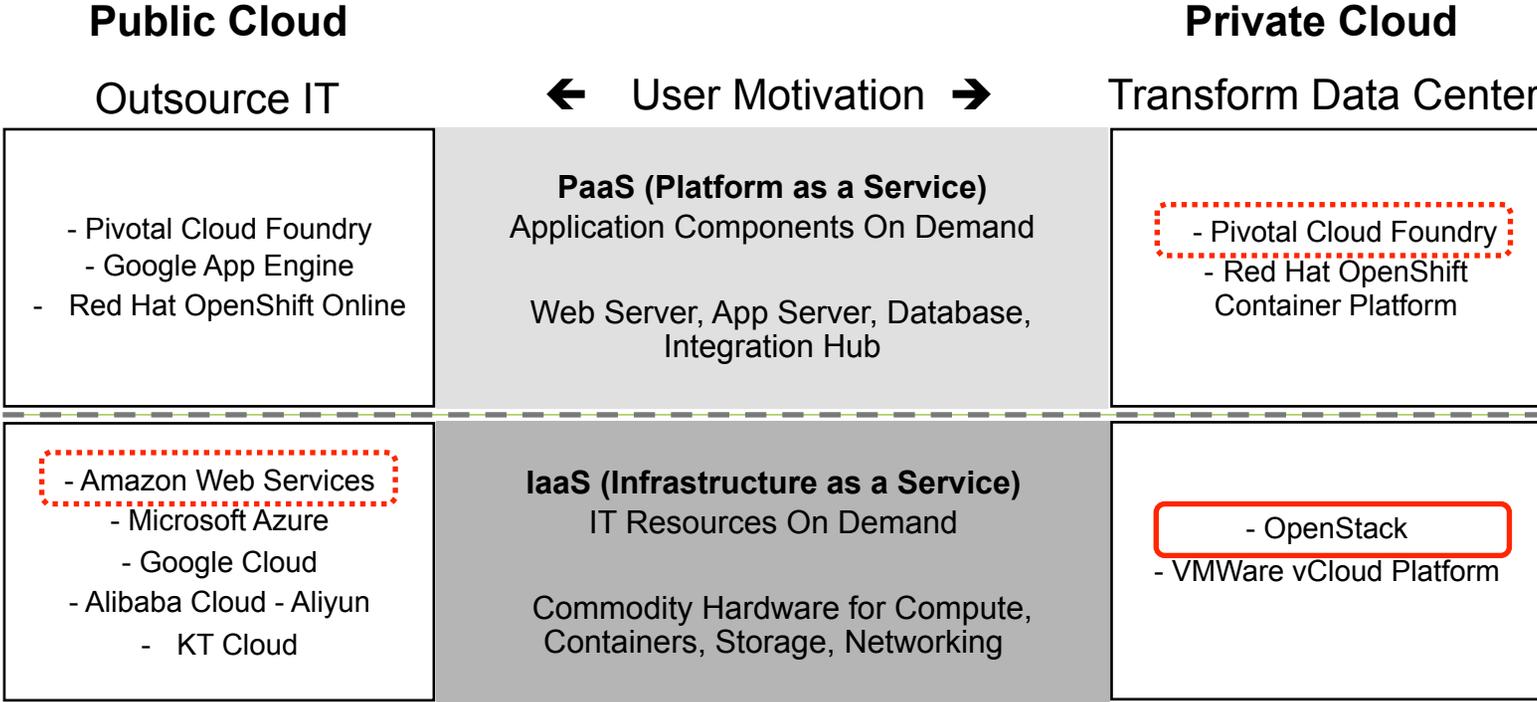
- Provisions and manages robust, elastic, HA Postgres clusters in multiple clouds



# EDB Ark - Subscriptions

- EDB Ark
  - Per installed EDB Ark **server**
    - One server can manage many database clusters consisting of hundreds or thousands of cores
  - Multiple instances may be purchased
    - e.g. one for each division, location, data center, etc.
- EDB Ark Runtime for PostgreSQL
  - **PostgreSQL cores** under EDB Ark management

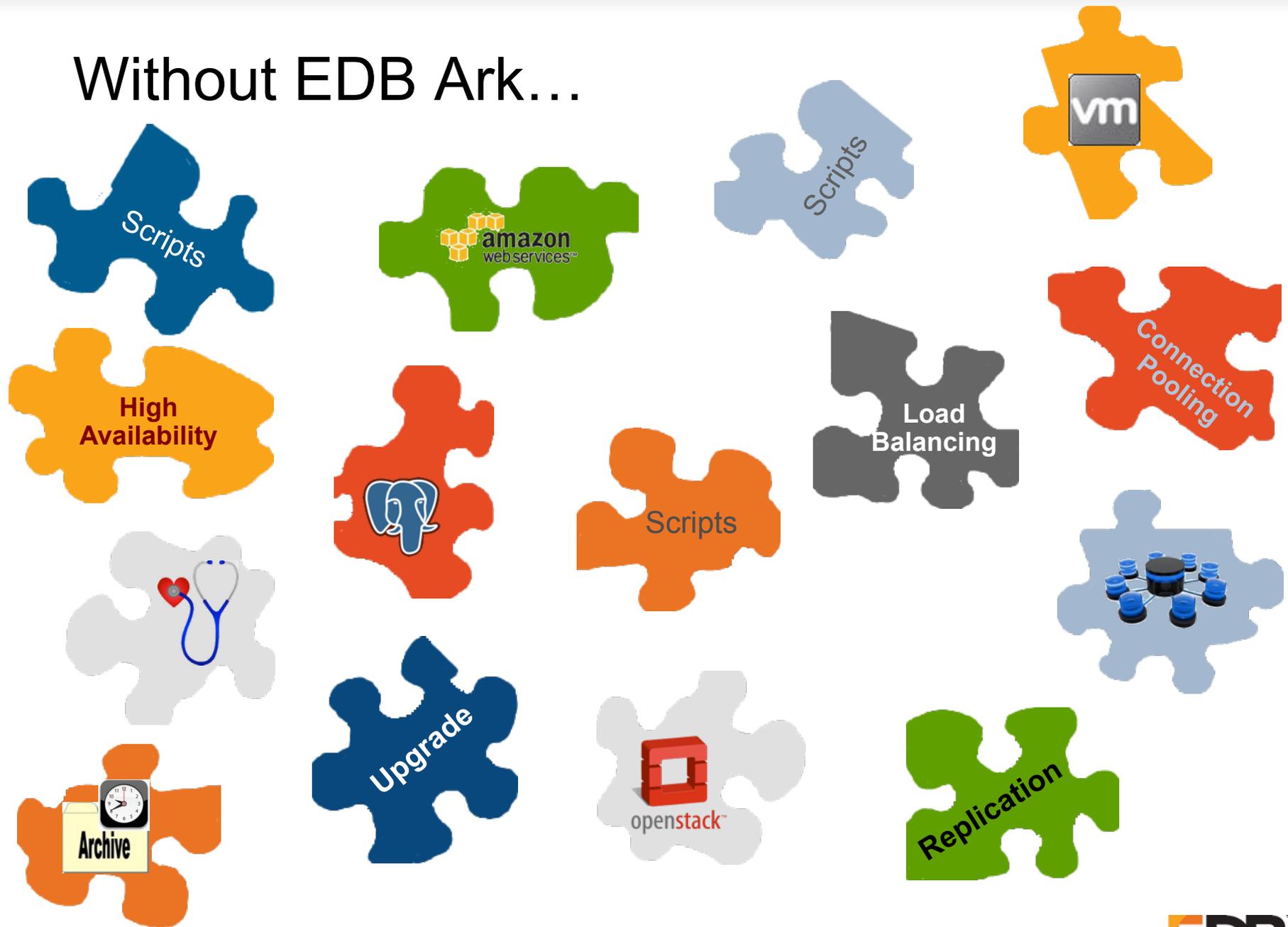
# EDB Ark's place in the cloud market



**Oct 2016 EDB Ark**

**Dec 2016 for EDB Ark**

# Without EDB Ark...



# With EDB Ark...

**Create a new Server Cluster** [X]

Step 1 | Step 2

**Provide the details for your cluster**

Cluster Name: devops-project-7

Engine Version: Postgres Plus Advanced Server 9.5 64bit on Cer

Server Class: d1.xlarge

Virtual Network: General VM Network

Floating IP Pool: EnterpriseDB Network

Number of nodes: 5

Storage GB: 2

Encrypted

Perform OS and Software update?

Master User: enterprisedb

Master Password: postgres

Notification Email: gary.carter@enterprisedb.com

Next Cancel

- Point and click interface
- Customizable cluster details
- Multi-node HA configurations
- Automated DR policies
- Automated setup / deployment
- On-demand to online in minutes

**Create a new Server Cluster** [X]

Step 1 | Step 2

**Automatic Backup Retention Details**

# of automatic backups to retain: 7

Backup Window (Greenwich Mean Time): 12:00am - 2:00am

Continuous Archiving (Point-in-Time Recovery)

Previous Launch Cancel

# With EDB Ark...

**EDB Ark Console** Tenant: DEMO Log Out

Dashboard Clusters Backups User DBA Admin

NAME	PENDING	DATA SPACE %	LOAD	VM	HA	DB	UP
salesdb		4%	0.02	✓	✓	✓	✓
accountingdb		2%	0.02	✓	✓	✓	⚠

**Details**

Creation Date: Wed Sep 07 19:01:34 BST 2016  
 DB Username: enterprisedb  
 Owner: ryan.shoemaker  
 Email: ryan.shoemaker@enterprisedb.com  
 Size: 1gb (encrypted)  
 Region: uk  
 Virtual Network: General VM Network  
 Server Class: m1.medium  
 Engine Version: Postgres Plus Advanced Server 9.5 64bit on CentOS/RHEL 7  
 OS/SW update on creation: true  
 Monitor Load Balancer Health  
 Cluster healing mode:  
 Replace failed master with a new master  
 Replace failed master with existing replica

**Auto-Scaling Thresholds**  
 Auto-Scaling Thresholds  
 % of Storage Size used: 70  
 # of Server Connections: 245

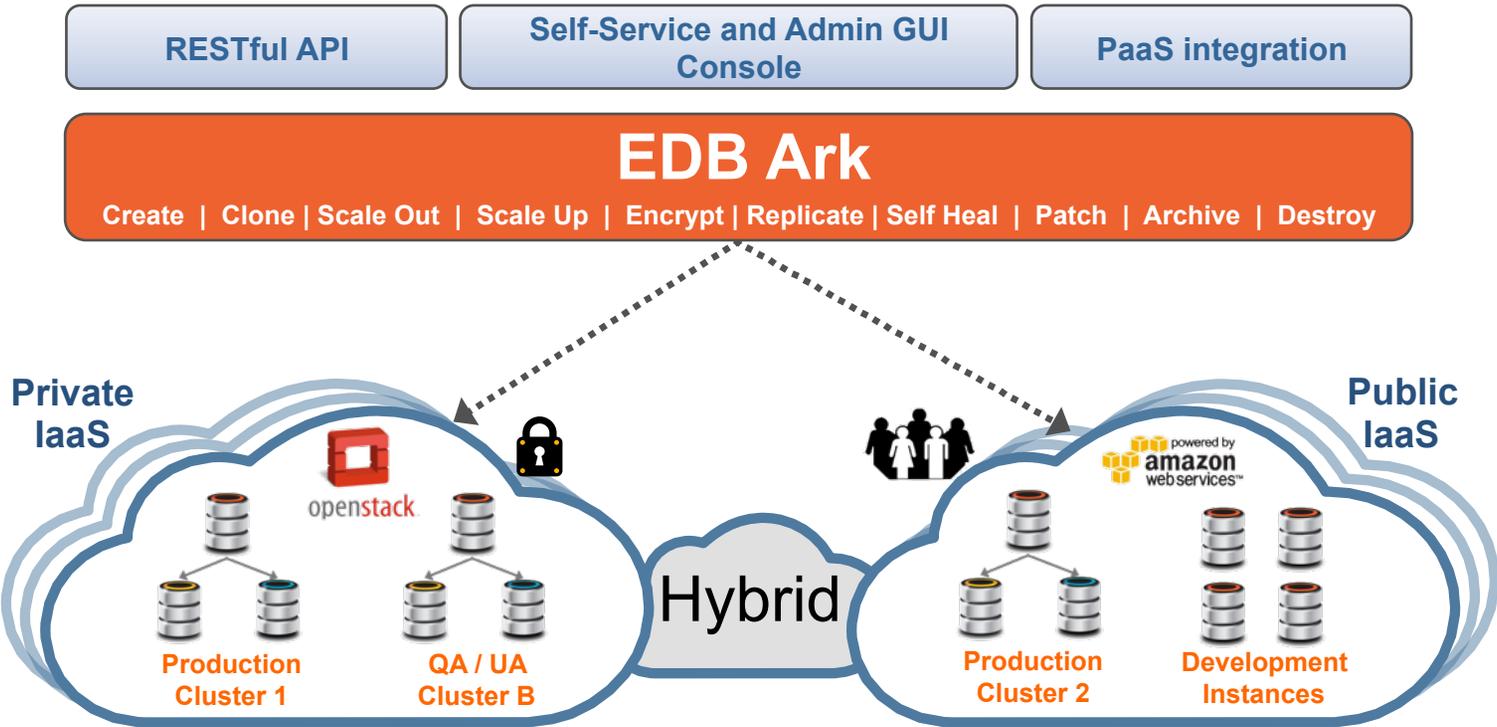
**Backup Settings (Greenwich Mean Time)**  
 Backup Window: 12:00am - 2:00am  
 Backup Retention: 7  
 Continuous Archiving (Point-in-Time Recovery)

**Monitoring**  
 Events

- 1 Scale replicas in or out manually
- 2 Clone cluster for new app development
- 3 Upgrade Postgres version on your schedule
- 4 Scale server class up or down manually
- 5 Transaction or Recovery preferred failover
- 6 Multi-node clusters with automatic replication, connection pooling and load balancing
- 7 User controlled auto-scaling thresholds
- 8 Auto-backup policies including PITR
- 9 Monitoring and Events panels

Automated, fast, simple, management visibility and reliable.

# EDB Ark details



# EDB Ark v2.0 Summary

- EDB Ark
  - Provisions and manages Postgres in OpenStack cloud
- Value Proposition
  - Flexibility, control and visibility (deploy in multiple clouds)
  - Business agility (new digital initiatives and DevOps)
  - Lower costs (optimizes resource usage)
- Separate download, product, brand, and pricing
  - Requires an EDB Ark subscription
- Annual subscriptions:
  - EDB Ark (server) @ \$0 /server/year for support
  - EDB Ark Runtime for PostgreSQL (cores) @ 250/core/year
    - Allows using EDB Ark with self-supported PostgreSQL

# EDB Postgres for Containers

- A **new distribution and deployment model** for EDB Postgres Platform
- Containers provide:
  - **Small units** of granularity ensure efficient use of system resources
  - Provide **less overhead** and start instantly
  - Use Kubernetes to **standardize and automate** deployment and system scaling.
- EDB is developing Red Hat Docker containers that **intelligently groups database components** for ease of use.

## 3 Containers for EDB Postgres

- Q4 2016: **Advanced Server 9.5 Container**
  - Used to create master and replica containers
  - Includes Failover Manager agent and pgPool load balancer
  - Uses Postgres streaming replication to synch replicas
  - Defined persistent storage for non-ephemeral data
- Q4 2016: **Backup and Recovery Container**
  - Used for backups of master databases on a regular basis
  - When creating replicas, Advanced Server containers identify a backup to use for seeding the replica
- 2017: **Postgres Enterprise Manager Container**
  - Used to monitor and manage databases

# Summary: EDB Provides Best of Both Worlds

PostgreSQL



Enterprise Requirements

Fast development cycles  
Thousands of developers  
Advanced features  
No vendor lock-in  
Low cost

24/7 support  
Services and training  
Enterprise-class features & tools  
Indemnification  
Product road-map  
Responsiveness, dependability & control

*EDB Enables Postgres Innovation AND Enterprise Reliability*

