

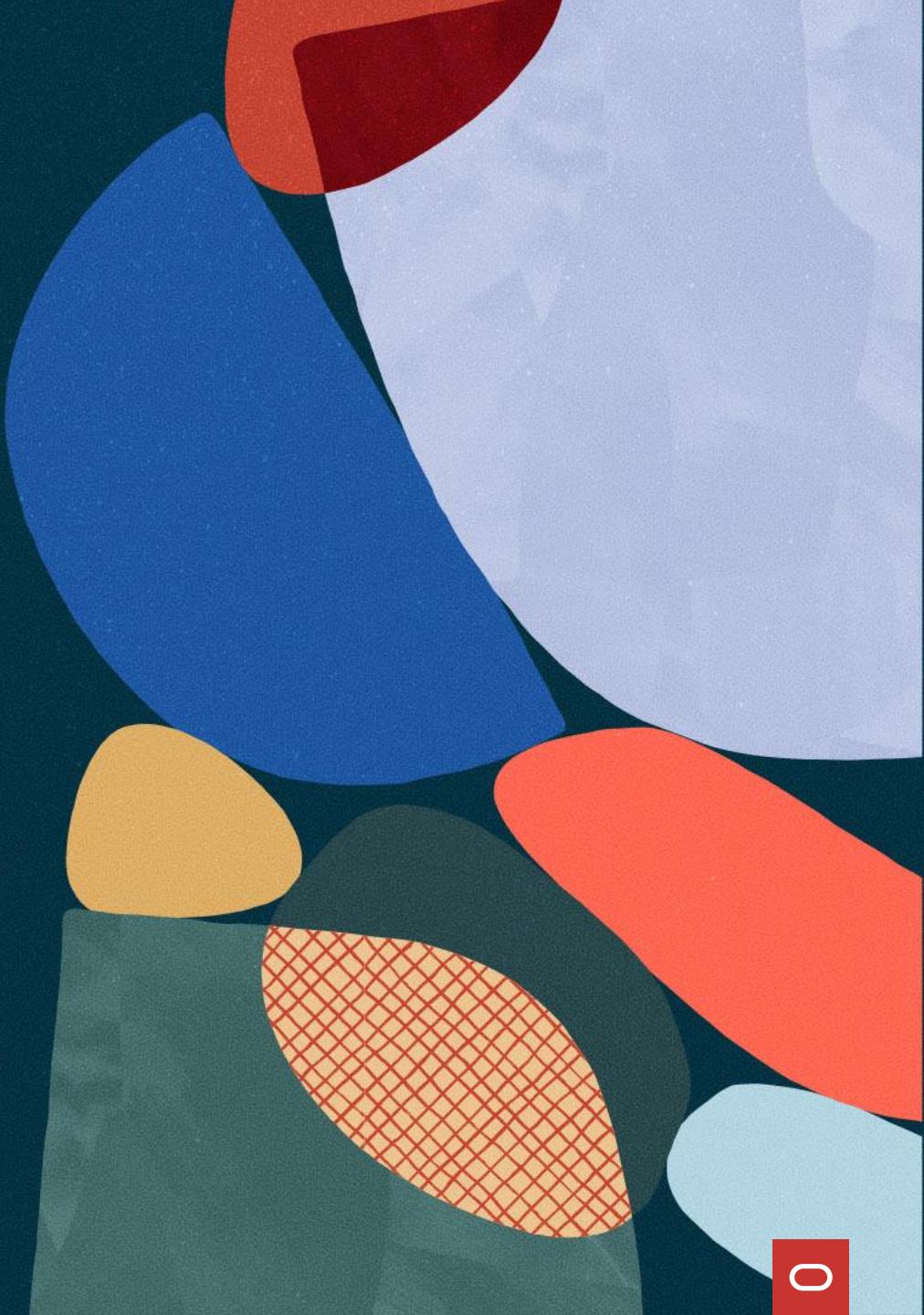
ORACLE

# AI World

**Empower Your Data with Oracle  
Database@Google Cloud and Native AI  
Services**

LRN 3265

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# Speakers

## Vijay Bangaru

Vice President, Product Management  
OCI Multicloud

## Paul Lewis

Chief Technology Officer  
Pythian

## Julien Silverston

Senior Principal Solution Architect  
OCI Multicloud

# Safe harbor statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, timing, and pricing of any features or functionality described for Oracle's products may change and remains at the sole discretion of Oracle Corporation.

# Oracle AI World 25 LRN 3265

## Agenda

- 1 Oracle Database@Google Cloud Overview
- 2 Pythian's Application Migration Journey
- 3 Deploy, Connect, and Vertex AI integration
- 4 Q&A

# Oracle Database@Google Cloud Overview

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Vijay Bangaru

Vice President, Product Management  
OCI Multicloud



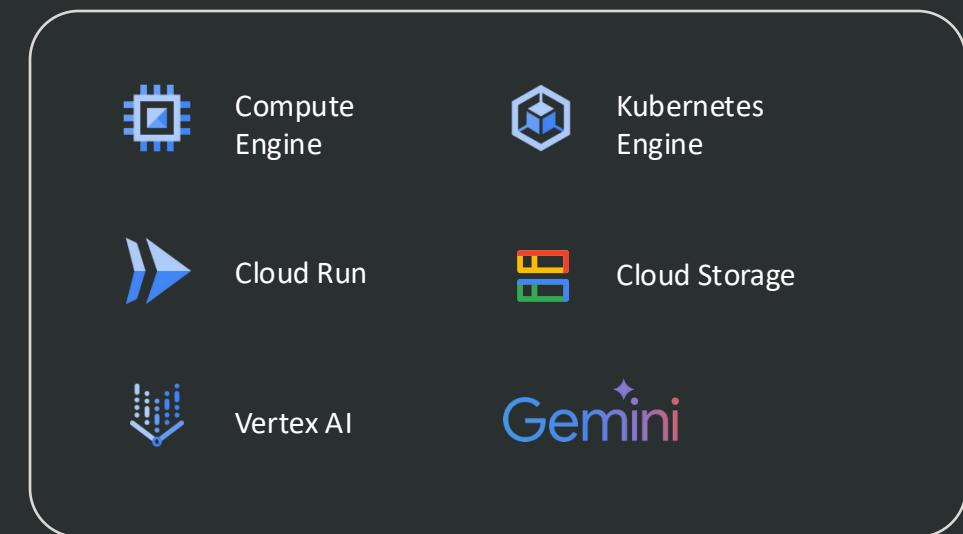
# Oracle Database@Google Cloud – The Best of Both Worlds

Enterprise grade data management services



**ORACLE  
CLOUD**  
Infrastructure

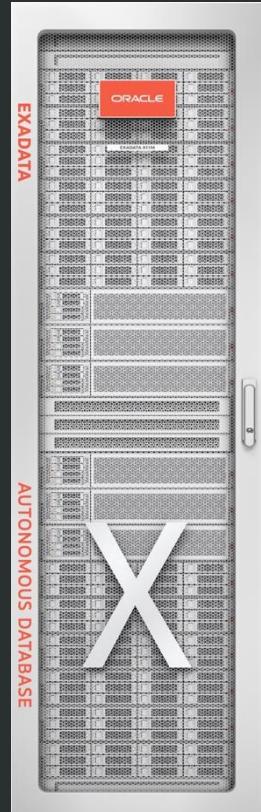
Innovative cloud services



Google Cloud

# Exadata: Premier Platform for Oracle Database Services

Extreme performance, scalability, and availability for data and AI workloads, at a low cost



## Data optimized hardware

Scale-out, data optimized compute, networking, and storage

## Data intelligent software

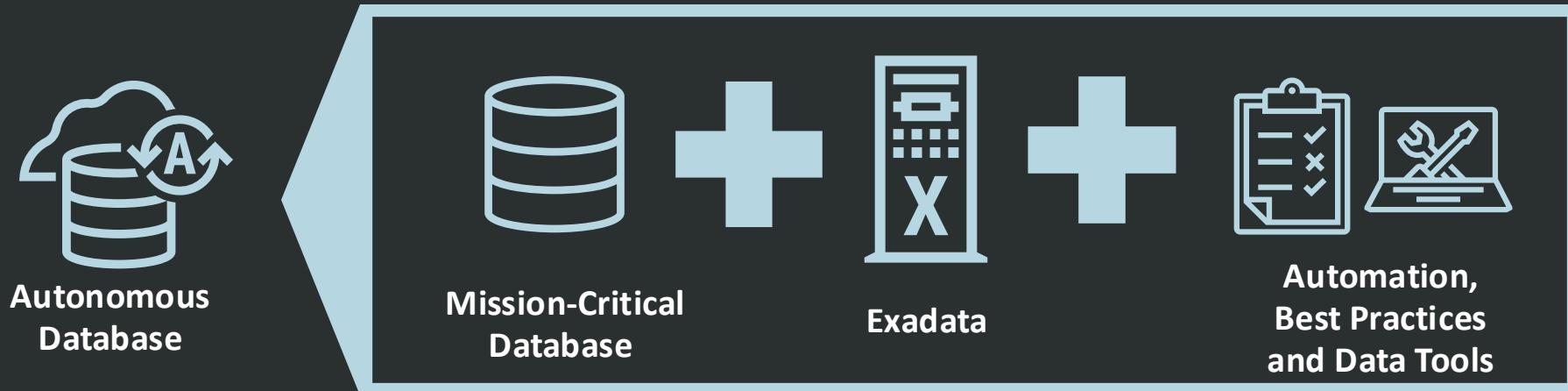
Unique algorithms deliver extreme performance and efficiency for AI, analytics, and mission-critical apps, at any scale

## Engineered to run everywhere

On-premises, Cloud@Customer, Oracle Cloud, and Multicloud

# Autonomous Database Delivers the Best Data Experience

Fully-managed, cloud native, lowest TCO



Automatically secures, tunes, and scales

✓ Eliminates many manual tasks

✓ Reduces human error

✓ Simplifies scaling

✓ Minimizes downtime

✓ Aligns costs with demand

Runs on top of **Real Application Clusters** ♦ Up to **99.995% SLA** ♦ **Zero regression SLO**

# Oracle Base Database Service

Co-managed with 100% Oracle Database compatibility on Oracle hardware

## Full-featured Oracle Database cloud instance

- Flexible single VM on shared hardware generation-agnostic Standard x86 compute with block storage
- Support for Oracle Database 19c and 23ai

## Complete customer administrative control

- Customer-controlled automation for create, update, backup, scale, disaster recovery, and more
- Simple deployment in minutes

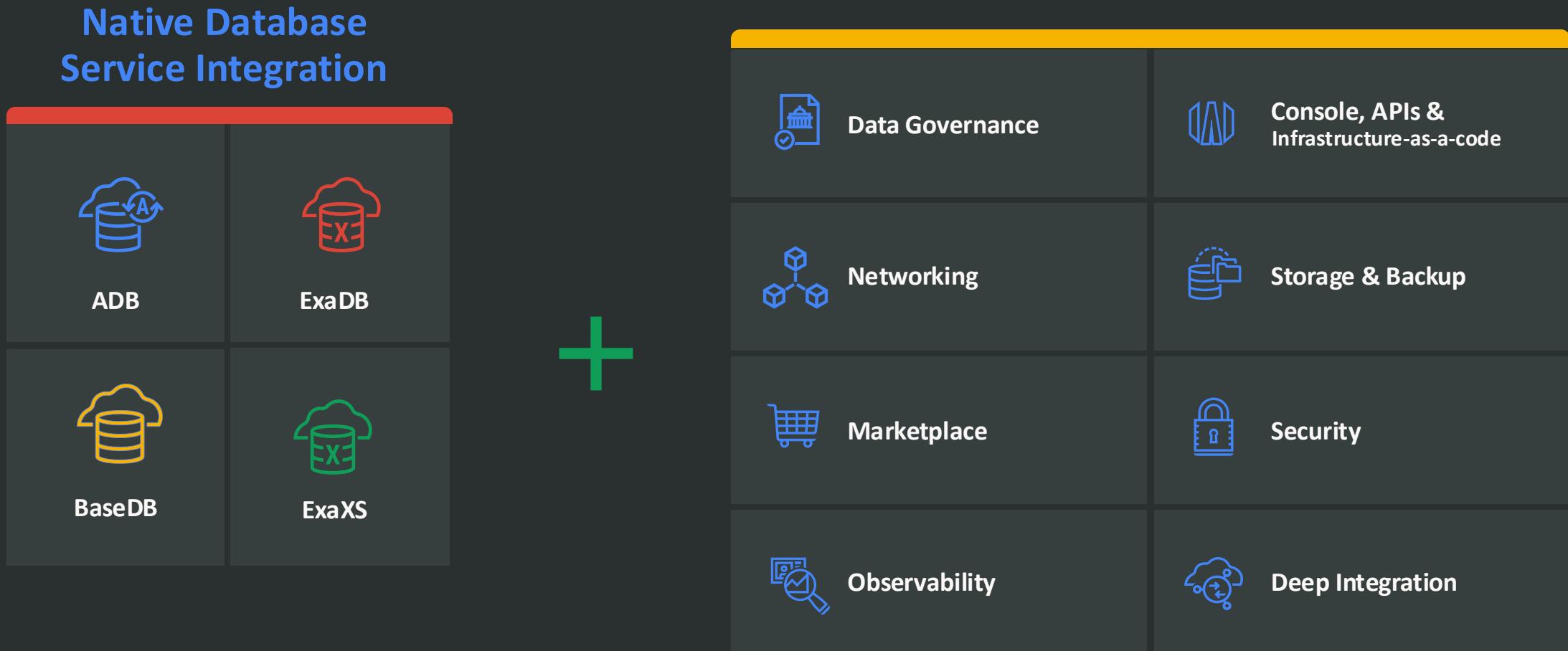
## Cloud economics

- Low cost with pay-as-you-go pricing and independent compute and storage scaling
- Choice of Oracle Database Standard and Enterprise Edition License-included options or Bring Your Own License (BYOL)

Shape	VM.Standard.x86
Database	Single-instance
ECPU	4 - 256
Memory	8 – 512 GB
Data Storage	256 GB – 40 TB
License Included Editions	Standard, Enterprise, High Performance

# Oracle Database@Google Cloud – The Best of Both Worlds

## Unified Integrations



# OCI Multicloud Service Availability

Services		Google Cloud
Oracle Exadata Database Service – Dedicated (ExaDB-D)		
Oracle Autonomous Database - Serverless (ADB-S)		
Oracle Autonomous Database - Dedicated (ADB-D)	Planned	
Oracle Database Autonomous Recovery Service (RCV/ZRCV)		
Oracle GoldenGate	Planned	
Oracle Base Database Service		
Oracle Exadata Database Service - Exascale Infrastructure (ExaDB-XS)		
Oracle Interconnect		
Exadata X11M		
Exadata X9M		

# Oracle Multicloud – Global Footprint



## Oracle Database @Google Cloud

### 8 Live regions

- North America Northeast 1 (Montreal)
- US East 4 (Ashburn)
- US Central 1 (Iowa)
- US West 3 (Salt Lake City)
- Europe-west3 (Frankfurt)
- Europe-west2 (London)
- Asia Northeast 1 (Tokyo)
- Australia Southeast 2 (Melbourne)

#### Dual zones regions

- US East 4 (Ashburn)
- Europe-west2 (London)

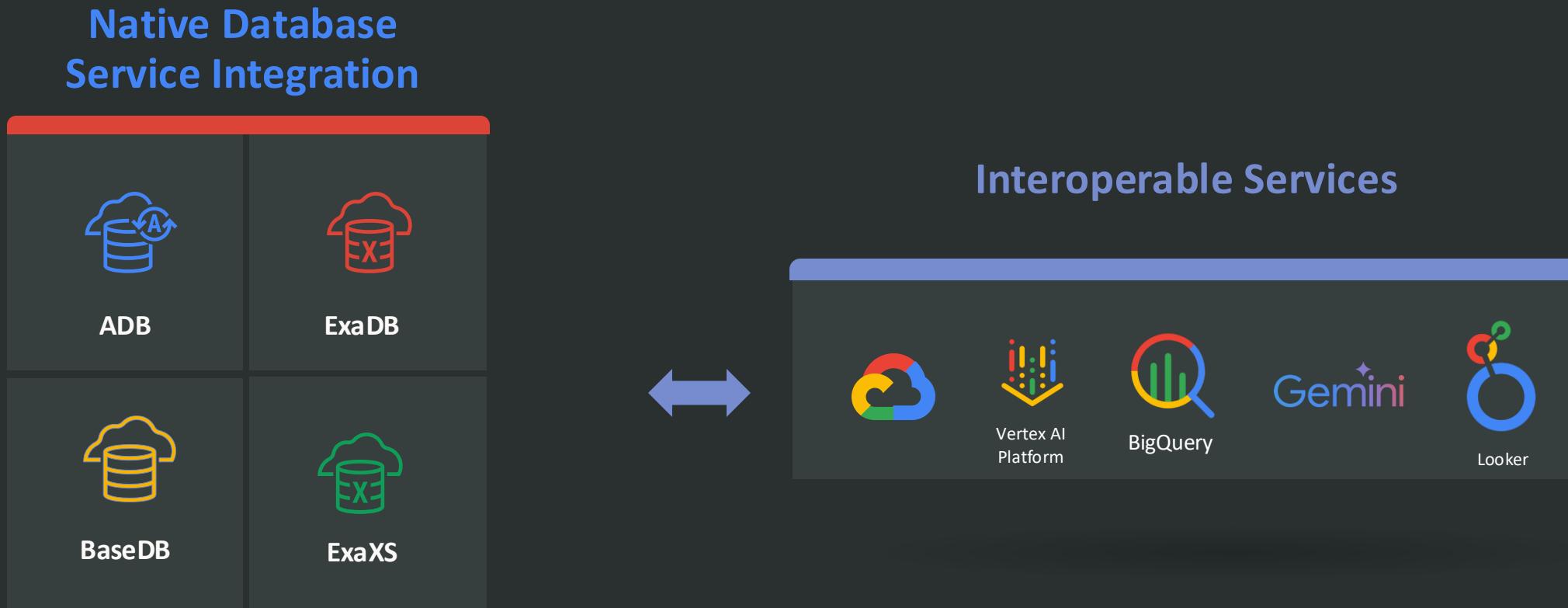
### 9 Planned regions

- North America Northeast 2 (Toronto)
- Europe West 8 (Milan)
- Europe West 12 (Turin)
- Australia Southeast1 (Sydney)
- Asia South 2 (Delhi)
- Asia South 1 (Mumbai)
- Asia Northeast 2 (Osaka)
- South America East 1 (Sao Paulo)
- North America South1 (Queretaro)

#### Dual zones regions

- Australia Southeast 2 (Melbourne)
- Europe West 8 (Milan)
- Europe-west3 (Frankfurt)

# Oracle Database@Google Cloud – AI and Analytics Integration



Pythian

# Pythian Services

## Oracle@Google



Advantages of running Oracle Database@Google Cloud

# Pythian at a Glance

**27K+**

Databases managed

**45+**

Data ecosystem technologies

**500+**

Global customers

## **Expertise + experience + technologies:**

Deep data ecosystem expertise and specialization in cutting-edge technologies like AI to empower your business transformation.

## **Agility through flexible delivery models:**

Flexible services adapt to your unique needs, whether on-premises or in the cloud, supporting every stage of your digital transformation.

## **Long-term partners:**

A commitment to long-term partnerships ensures enhanced value from your data and lays the foundation for your AI future.

**28+**

Years in business

**300+**

Data experts

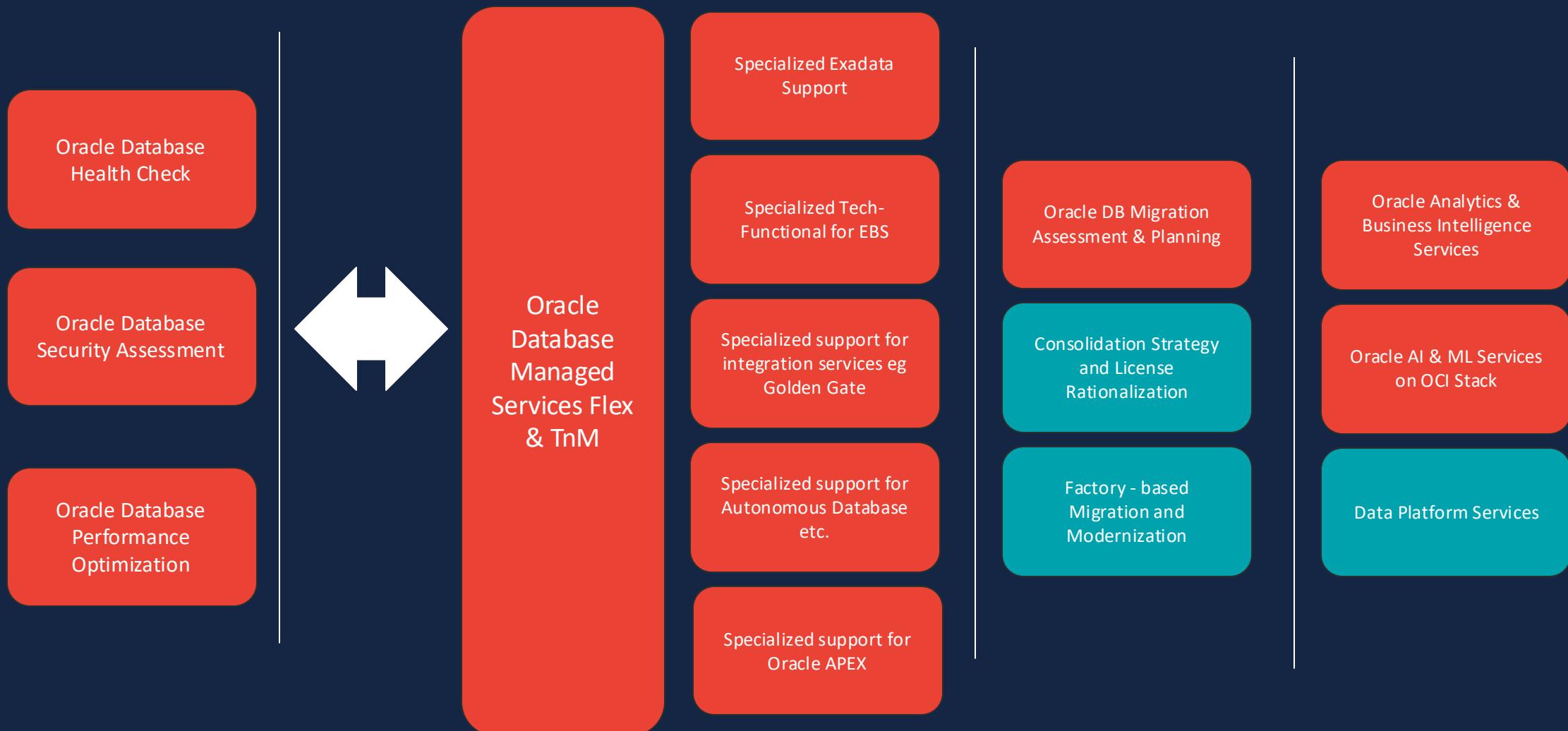
**2K+**

Environments managed

**94**

Net Promoter Score (NPS)

# What we do today?



# APEX to GCP



# **Why Oracle Database@Google Cloud ?**

- The new partnership gave us the ability to run Oracle based apps with ease (friction all gone)
- Can integrate with other Google Cloud services and the things we have and are building there (including the AI solutions)
- Easier cost control: centralized billing through the Projects and in the Google Cloud ecosystem we're used to
- Licensed included costing model means we can add new environments (even if temporarily) with ease and without Oracle licensing concerns
- ADB fully-managed platform allows our software stack to stay up-to-date (the old environment had fallen far far behind)



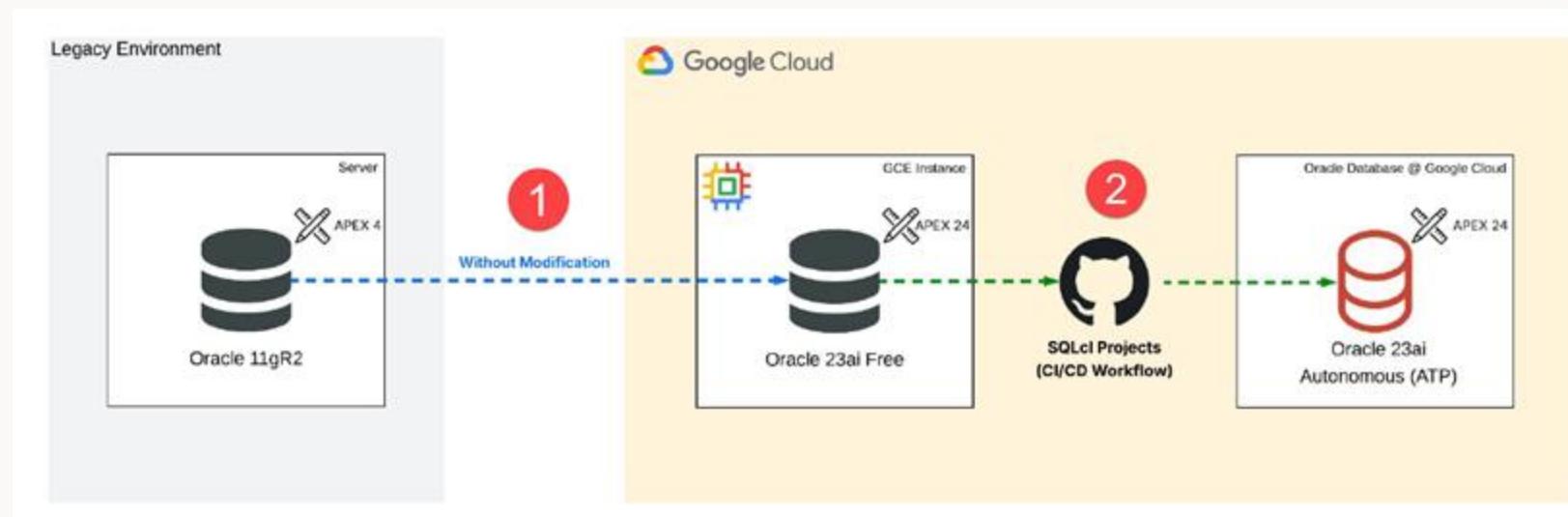
# Identified Candidate: Our Early Mover

## Application (APEX) Modernization Steps

1. Copied the application (APEX) without change into the modernized infrastructure
2. Upgraded the application (APEX rewrites) and implementation of a Git & CI/CD workflow (adding modern tools and workflows to the development process)

A Pythian internal “Resourcing Application”

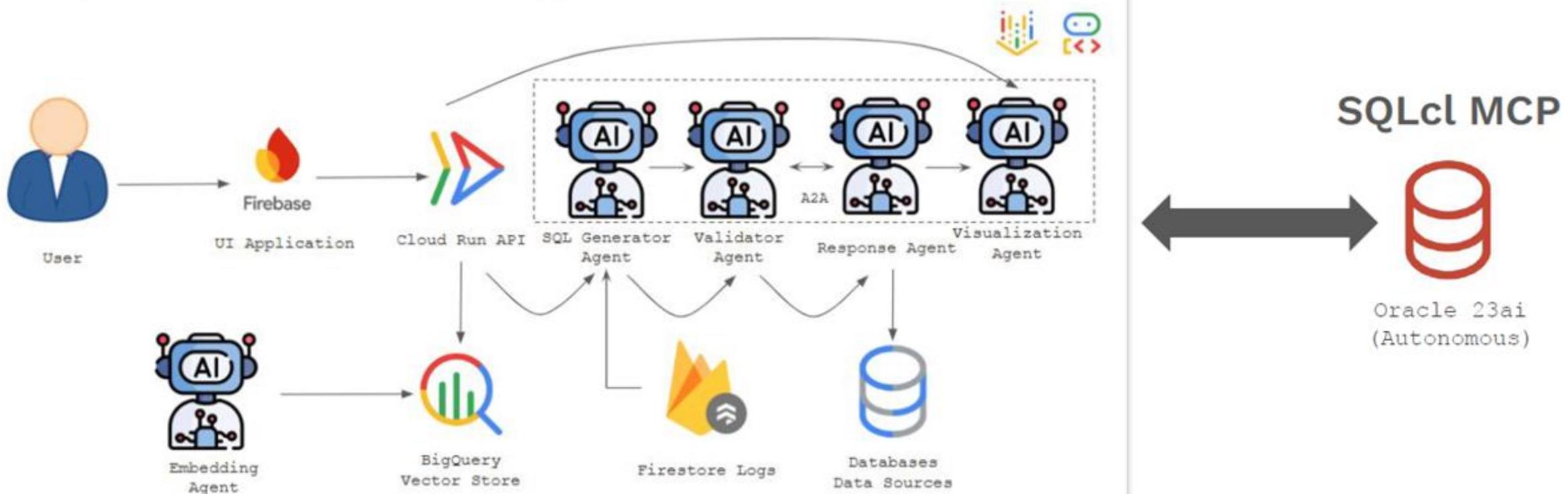
- A small APEX Application: in-use but not up-to-date
- No source-code repository – app only exists “in the database”
- Fragile: Can’t do/change anything to avoid risk



# AI @ Google Cloud

## Advantages of Moving to GCP

### Sample Architecture: Multi-Agent NL2SQL



# Vertex AI / Gemini Built Health Checks

**PostgreSQL Health Check Report Generator**

**Key Innovations:**

1. Business Impact Quantification:
  - Downtime Risk: 60% probability
  - Performance Degradation: 40%
  - Cost Impact: "\$5K/month wasted"
  - Compliance: "Fails PCI-DSS, HIPAA"
  - User Impact: "Timeout errors, slow loads"
2. Complete Remediation SQL:
  - o Full SQL commands (not just descriptions)
  - o Prerequisites checklist
  - o Rollback commands for safety
  - o Risk level assessment
  - o Downtime requirements
  - o Estimated duration
3. Phase-Based Action Plans:
  - o Immediate (24-48 hours)
  - o Urgent (7 days)
  - o Short-term (30 days)
  - o Medium-term (60-90 days)
  - o Long-term (Ongoing)
4. Real Claude Sonnet 4.5 Integration:
  - o Executive summaries for C-level
  - o Root cause analysis
  - o Strategic recommendations

**Report Structure**

The ultimate report includes:

1. Executive Summary
  - AI-generated business-focused summary
  - Findings breakdown by severity
  - Key metrics and recommendations
2. AI-Powered Analysis
  - Root cause analysis
  - Risk assessment with probabilities
  - Interdependency mapping
  - Strategic recommendations
3. Prioritized Action Plan
  - Five phases with:
    - Specific actions with numbers (1.1, 1.2, etc.)
    - SQL commands for each action
    - Validation criteria
    - Dependencies
    - Success criteria
4. Detailed Findings
  - Organized by area (Architecture, Configuration, Design, Security, Performance):

**Comparison with Previous Versions:**

Feature	AI Report (LLM)	Human Report (comprehensive)
Data Coverage	✓ 157 tables with samples	✗ Limited
AI Analysis	⚠ Mock responses	✓ Full analysis
Business Impact	✗ None	✓ Excellent
Remediation	...	...

## Future AI Use @ Pythian

**Application development:** Using to re-write long and complicated SQL of internally developed and AI-based APEX security review tool

**Testing:** recursively so it can “check its own changes”

## Application insights:

Delivery resourcing efficiencies: Predictive analysis on utilization and team trends;

Resourcing allocations (true “forecasting”) and who can be assigned for future projects

# Thank You!

**Paul Lewis, Chief Technology Officer**  
[plewis@pythian.com](mailto:plewis@pythian.com)



# Oracle Database@Google Cloud

## Deploy and Connect

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Julien Silverston

Senior Principal Solution Architect  
OCI Multicloud



# Unify

## Empower your data with native AI services

### Customer journey



Onboard with Oracle Database@Google Cloud through the Google Cloud Marketplace



Use Oracle Database Network to connect your data to Google Cloud services and applications



Combine the capabilities of Oracle Database 23ai with Google Cloud Vertex AI

# 1. Onboard with Oracle Database@Google Cloud through the Marketplace

Purchase a **PAYG** or **private offer** through the **Google Cloud Marketplace**

- Work with Oracle account team on private offer
- Pay Google Cloud – consumption applies to Google Cloud commitments
- Deploy OCI database services
  - Oracle-managed Oracle Exadata hardware
  - Located within Google Cloud data centers
- Earn Oracle Support Rewards towards your tech software license support bill

## 2. Provision Oracle database services into your Google Cloud

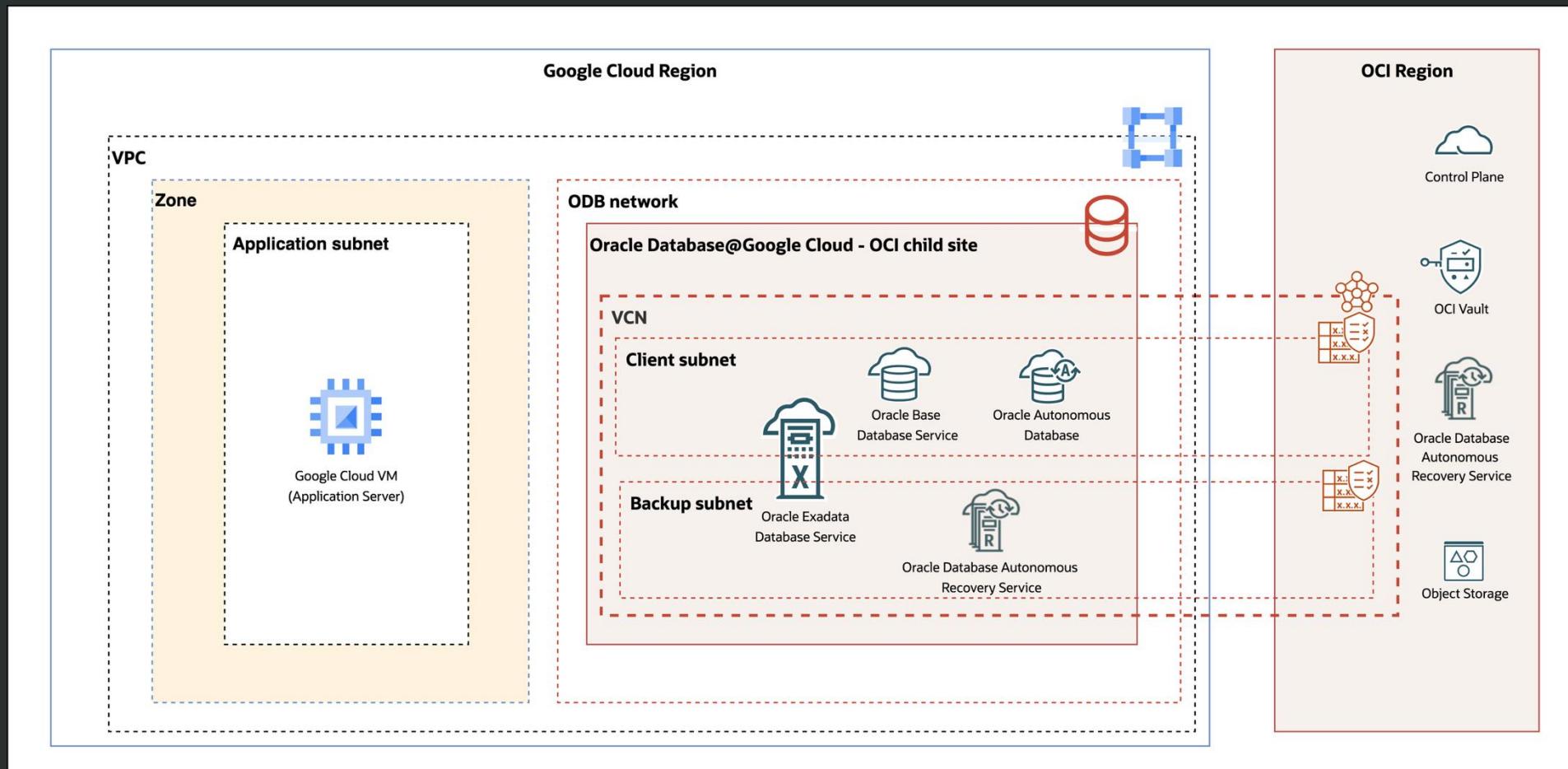
### Provision OCI database services using the Google Cloud management console, CLI/API, Terraform

- Manage access with Google Cloud IAM
- Monitor Oracle database with Google Cloud Monitor

### Manage OCI database services using the OCI console, CLI/API, Terraform

- Create and manage container and pluggable databases
- Manage backup and restore, Data Guard, OCI integrations

# Oracle Database@Google Cloud - Architecture



## 2. Create Oracle Database Network to connect your Google Cloud services and applications

```
gcloud oracle-database odb-networks create aiworld01 \
    --project=aiworld \
    --location=us-east4 \
    --network=projects/aiworld/global/networks/default

gcloud oracle-database odb-networks odb-subnets create client \
    --project=aiworld \
    --location=us-east4 \
    --odb-network=aiworld01 \
    --cidr-range=10.10.15.0/24 \
    --purpose=client_subnet

    ✓ Create ODB network, select your VPC
    ✓ Define your private subnet
    ✓ Follow Google Cloud network topologies : Standalone VPC, Peered
        VPC, or Shared-VPC
```

## 2. Deploy Exadata Infrastructure

```
gcloud oracle-database cloud-exadata-infrastructures  
create demo01 --location=us-east4 --display-  
name=demo01 --properties-shape="Exadata.X11M" --  
properties-compute-count=2 --properties-storage-  
count=3
```

## 2. Create VM Clusters on Exadata Infrastructure

```
gcloud oracle-database cloud-vm-clusters create
cluster1 \
--exadata-
infrastructure=projects/aiworld/locations/us-
east3/cloudExadataInfrastructures/demo01 \
--project=aiworld \
--location=us-east3 \
--display-name="cluster1" \
--odb-subnet=projects/aiworld01/locations/us-
east3/odbNetworks/aiworld01/odbSubnets/client \
--backup-odb-subnet=projects/aiworld01/locations/us-
east3/odbNetworks/aiworld01/odbSubnets/backup \
--properties-license-type=license-included \
--properties-ssh-public-
keys="VtTxzlPJtIivthmLOmWdRDFy5127pKUTwLp02" \
--properties-gi-version=23.0.0.0 \
--properties-hostname-prefix=custer1 \
--properties-cpu-core-count=8
```

## 2. Create Autonomous Database

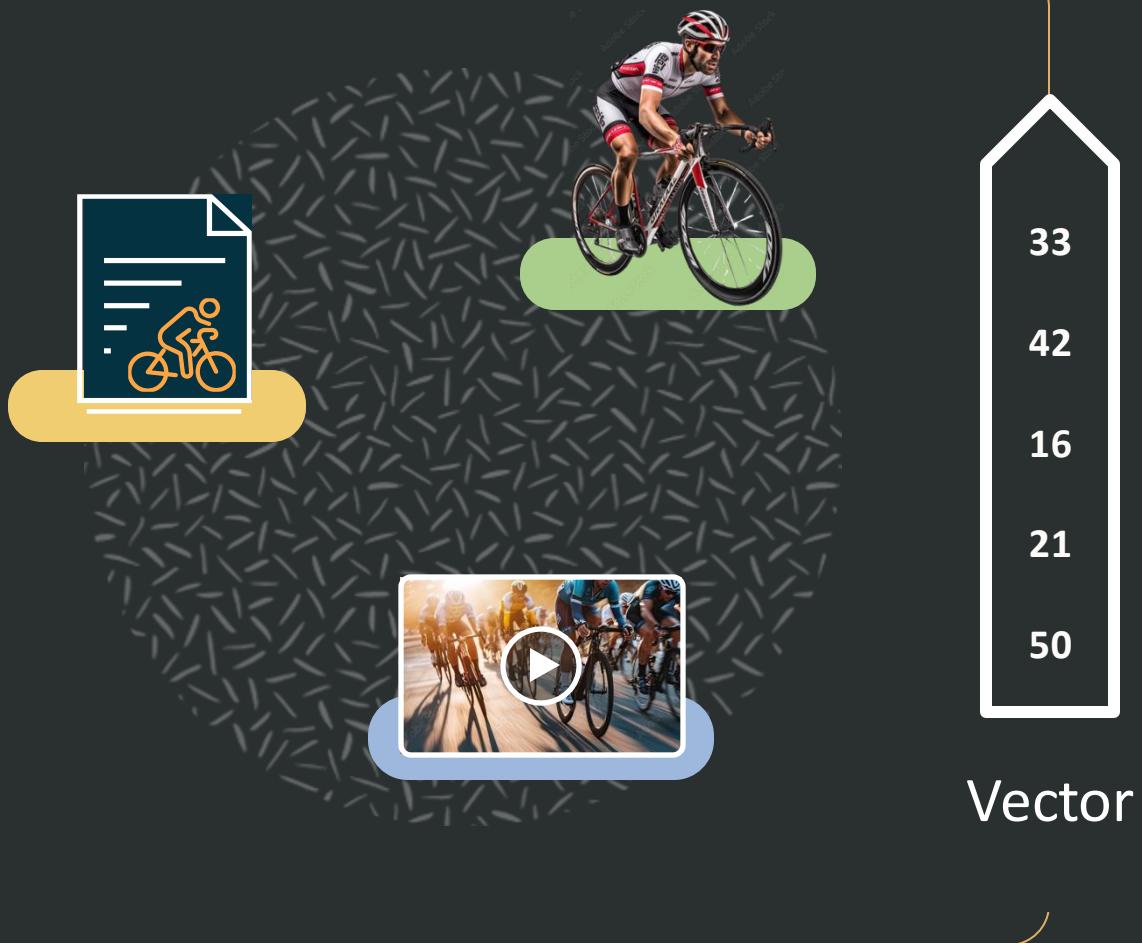
```
gcloud oracle-database autonomous-databases create  
jsdemo --location=us-east4 --display-name="jsdmeo" --  
database=jsdemo --admin-password=123Abpassdord --  
properties-compute-count=2 --properties-db-  
version=23ai --properties-license-  
type=LICENSE_INCLUDED --properties-db-workload=oltp -  
-odb-network=projects/network-project/locations/us-  
east4/odbNetworks/my-odbnetwork --odb-  
subnet=projects/network-project/locations/us-  
east4/odbNetworks/my-odbnetwork/odbSubnets/my-  
odbsubnet
```

### 3. Combine the capabilities of Oracle Database 23ai with Google Cloud Vertex AI

#### Oracle Database 23ai

- AI Vector Search
  - Vector data type for storing vector embeddings
  - SQL syntax and functions express similarity search with ease
  - Approximate search indexes packaged and tuned for high performance and quality
  - No need to move and synchronize data or manage multiple products

# Oracle AI Vector Search



An AI Vector is a sequence of numbers, called dimensions, that represent the semantic content of a document, image, or video

Developers create a vector for an object by just passing the object to a built-in vectorization function

Oracle 23ai natively stores vectors and compares vectors to find objects with similar semantic content

# Combine relational and AI search directly in SQL

```
SELECT cyclist_id, title, image_url  
FROM race  
WHERE image_url is not null  
ORDER BY VECTOR_DISTANCE(title_vr, :search_vr)  
FETCH FIRST 10 ROWS ONLY;
```

**Visit our booth in the Oracle AI World Hub to see the full demo**

# Learn more about Oracle Database@Google Cloud

<https://www.oracle.com/cloud/google/oracle-database-at-google-cloud/>

Find solutions, pricing, video demos, documentation, or connect with a specialist and sign up

## Visit our booth in the Oracle AI World Hub

Chat with product experts and explore Oracle Cloud Infrastructure and our Multicloud offerings

## See the full Empower Your Data demo

## Visit the Google Cloud booth in the Oracle AI World Hub

Connect with our Google Cloud partners and learn more



# Thank you

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thoughts on this session.**



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