



ORACLE  
**AUTONOMOUS  
DATABASE** **LEARNING  
LOUNGE**

**Unlock modern analytics and AI with Oracle's  
converged platform**

Autonomous Database Learning Lounge

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**Hosted by Marcos Arancibia**

Autonomous Database Product Management

# Agenda



**George Lumpkin**

## Topics

- Learn how Oracle Autonomous Database unlocks the **value of your data** and spurs **innovation**.
- See how this **converged data platform** enables your user community with **persona-specific tools** underpinned by **unified data and metadata**.
- Learn how it can help you build a **new analytics platform** in the cloud or easily modernize your on-premises data warehouses into a cloud native service while **maintaining compatibility with your existing analytic applications and pipelines**.
- Plus, find out how AI is augmenting the data management experience and simplifying development.

## Q&A

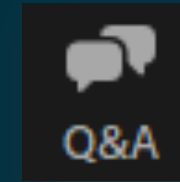
- **Product Managers will answer any questions**



# Before we begin...

**This session is for you !!!**

Ask your questions using **Q&A**



Product Managers are monitoring your questions

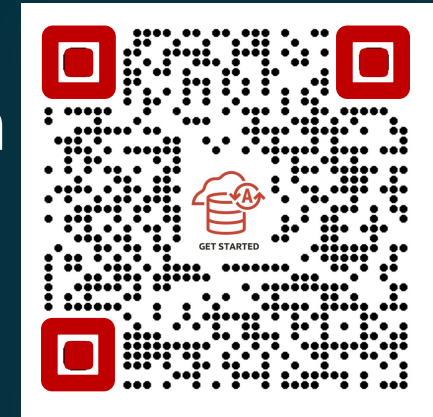
We will share links in **Chat**



The recording will be made available in a few days at  
[oracle.com/goto/adb-learning-lounge](https://oracle.com/goto/adb-learning-lounge)

# Important links to bookmark

Links to get you started and to keep up to date with Autonomous Database



**1** New Get Started page:  
[bit.ly/adb-get-started](https://bit.ly/adb-get-started)

**2** Join us: **LinkedIn**  
[bit.ly/adb-linked-in-grp](https://bit.ly/adb-linked-in-grp) **@AutonomousDW**

**3** Got a question?  
We are on stackoverflow  
[bit.ly/adb-stackoverflow](https://bit.ly/adb-stackoverflow)

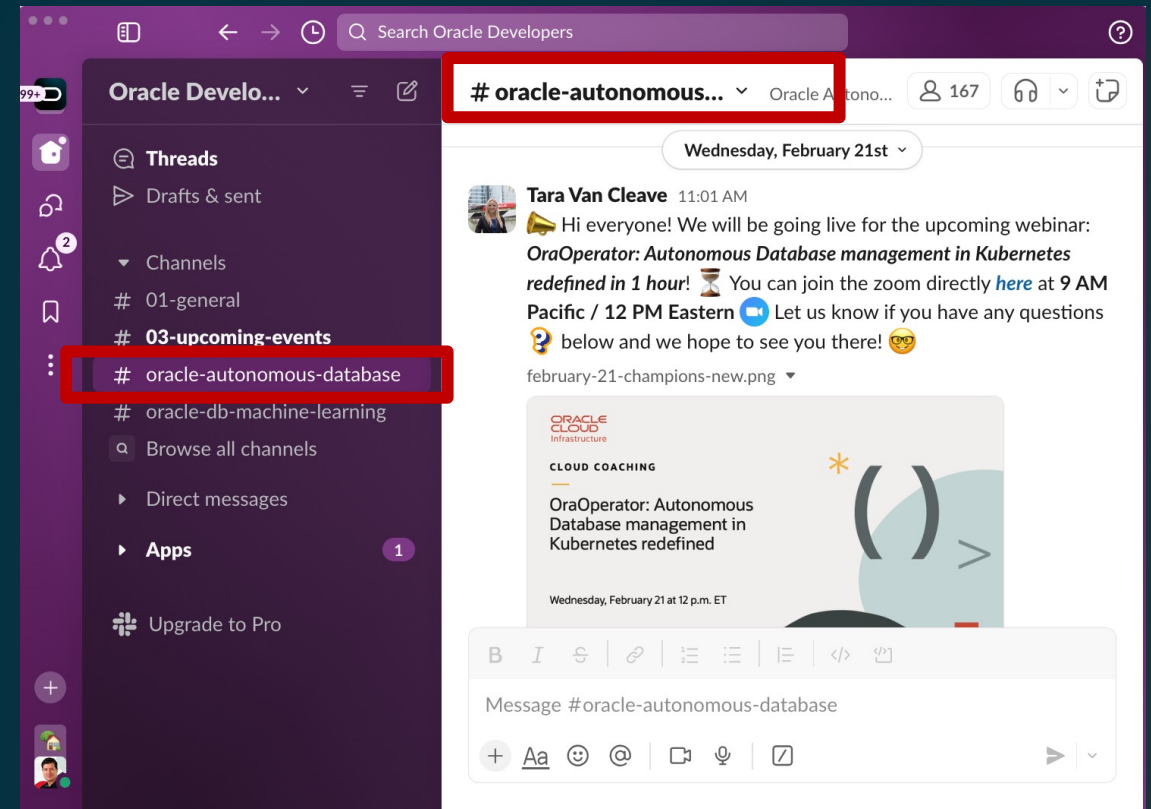
Join us on Developers Slack  
(search #oracle-autonomous-database)  
[bit.ly/odevrel\\_slack](https://bit.ly/odevrel_slack) (odevrel\_slack)



# Join our External Slack

**STEP 1:** [bit.ly/odevrel\\_slack](https://bit.ly/odevrel_slack) (odevrel\_slack)

**STEP 2:** search for **#oracle-autonomous-database** at the top and click on the Channel



# Speaker



**George Lumpkin**

ORACLE

# Modern Data Analytics and AI

**George Lumpkin**

Vice President, Product Management

October 2024



## 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.



# Modern data analytics platform

Any Workload

Query

AI

Any Location

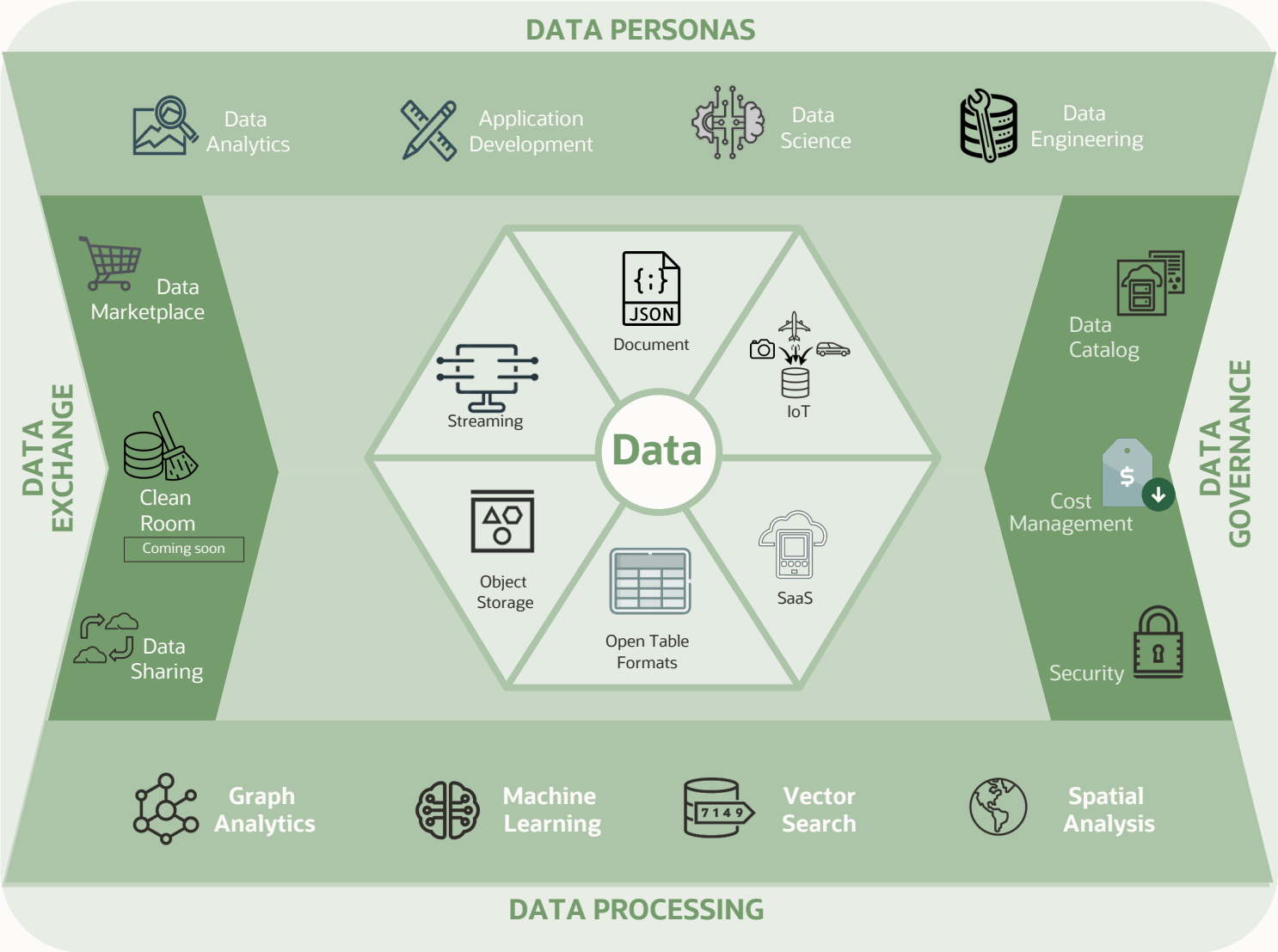
Clouds

On-premises

Any Data

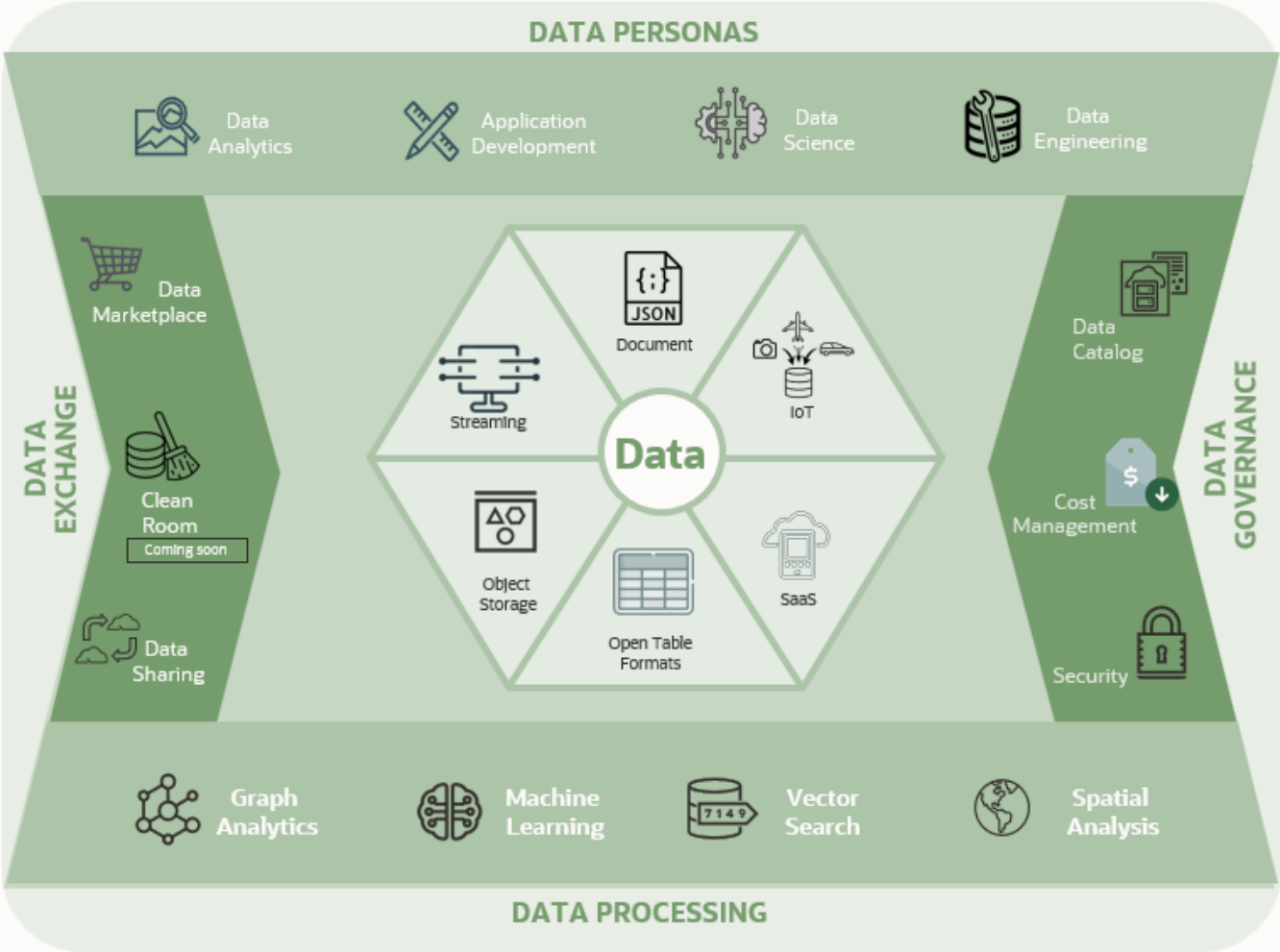


# Autonomous Database: Modern Data Analytics Platform





# Autonomous Database: Modern Data Analytics Platform

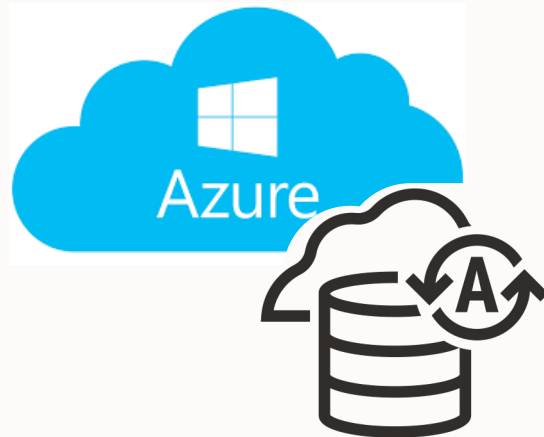


# Autonomous Database Deployment Options – Available Today

Oracle Cloud Infrastructure



Azure  
(via Database@Azure)



Google  
(via Database@GCP)



Dedicated  
Cloud@Customer



Coming soon: *Oracle Autonomous Database @ AWS*

# Autonomous Database is **Multi-Cloud**



**Full ecosystem runs identically in**

- **OCI**
- **Azure**
- **GCP**
- **Dedicated Region Cloud@Customer**

## **Native Integration with every cloud**

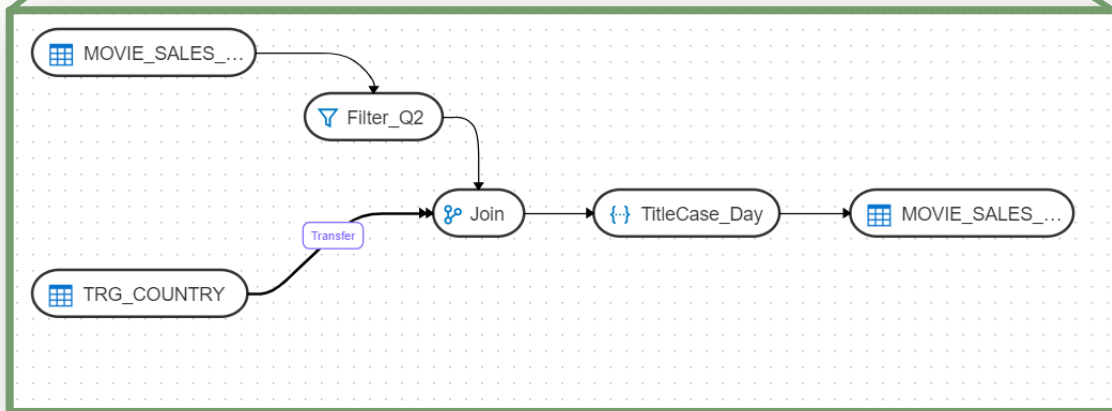
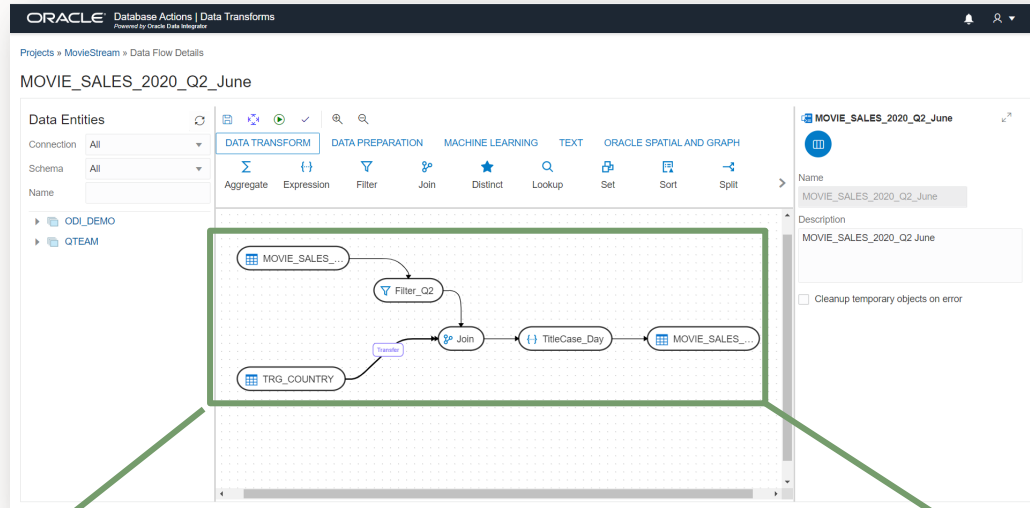
Example: integrations with Azure services

- Entra ID
- Azure Key Vault
- Visual Studio Code
- Power BI
- Azure OpenAI
- Azure Blob Storage / Azure Data Lake Storage
- Azure Purview (coming soon)
- Azure Data Factory
- Azure DevOps
- Azure API Management Service

# Autonomous Data Warehouse: A Platform for Every Persona



# For Data Engineers: Self-Service Data Integration And Data Quality with **Transforms**



## Fully-managed data integration solution

- Included with Autonomous Database
- Nothing more to buy, install or maintain

## Extensive pre-built connectivity to over 100 sources

- Source from Oracle and 3rd party databases, SaaS apps and services
- Built-in GUI + scripting support for building zeroETL / data mirroring pipelines
- Auto code generation for applications sources including Fusion, NetSuite and Salesforce

## Simple “drag-and-drop” data transformations

- Orchestrate multi-task workflows to manage data flow operations
- Built-in data quality
- Integrate with Slack, Teams, notification services



# For Data Scientists: Build, Deploy and Manage Models with Oracle ML

End-to-end platform for Machine Learning

- **Flexible:** Choice of SQL, R or Python
- **Powerful:** Over 30 scalable in-database machine learning algorithms
- **Open:** Import external models with ONNX and leverage external R or Python packages
- **Simple:** Build models via no-code AutoML
- **Enterprise-ready:** Lifecycle management including model deployment and monitoring

Fully managed and included with Autonomous Database

- Nothing more to buy, install or maintain

The screenshot displays the Oracle Machine Learning for Python interface. It features a code editor with Python code for data visualization, including a boxplot and a histogram. The interface also shows a 'Sales Weekly Data Monitor' dashboard with a 'Data Drift' chart and a comment thread.

**Oracle Machine Learning for Python**

Overloaded data visualization functions

boxplot

histogram

Create derived variables

Sales Weekly Data Monitor

Data Drift

Comments:

- Alex, great visualization of IRIS flower dimensions. Please add outliers. OMLUSER 7 minutes ago
- Thanks for the feedback. I've added outliers. OMLUSER02 in a few seconds





# For Data Analysts: Simplify the analytic workflow with **Data Studio**

One integrated experience spanning the analytic workflow

1. **Discover** and understand available data
2. **Integrate** any type of data from any source
3. **Analyze** and derive insights
4. **Share** data sets securely with stakeholders

Fully managed and included with Autonomous Database

- Nothing more to buy, install or maintain



# For Application Developers: Build apps faster with low-code **APEX**

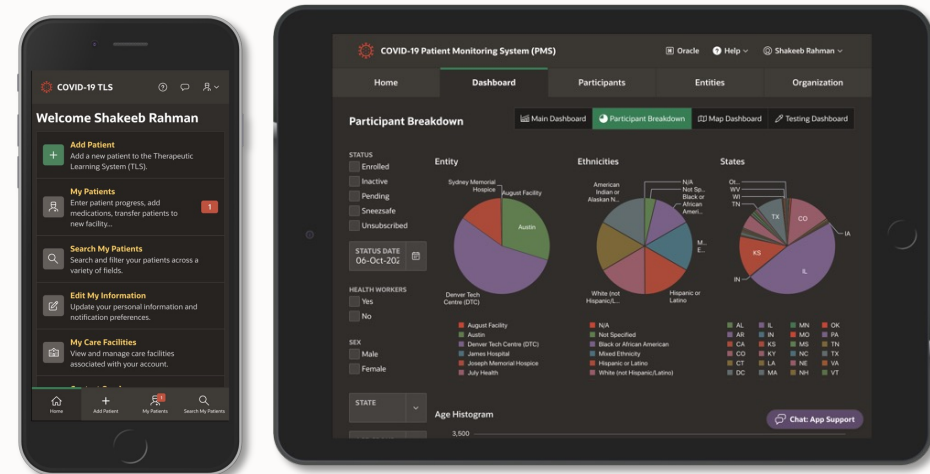
Agile low-code framework for highly-available building modern apps

- Deliver apps **20x faster** with **100x less code**

Oracle APEX delivers the most productive way to develop and deploy **Mobile and Web** apps everywhere

Fully managed and included with Autonomous Database

- Nothing more to buy, install or maintain



# Autonomous Data Warehouse: A Platform for Every Analytic Architecture

# Autonomous Database for every Analytic Deployment Models

One cloud service for all deployments

Data Warehouse



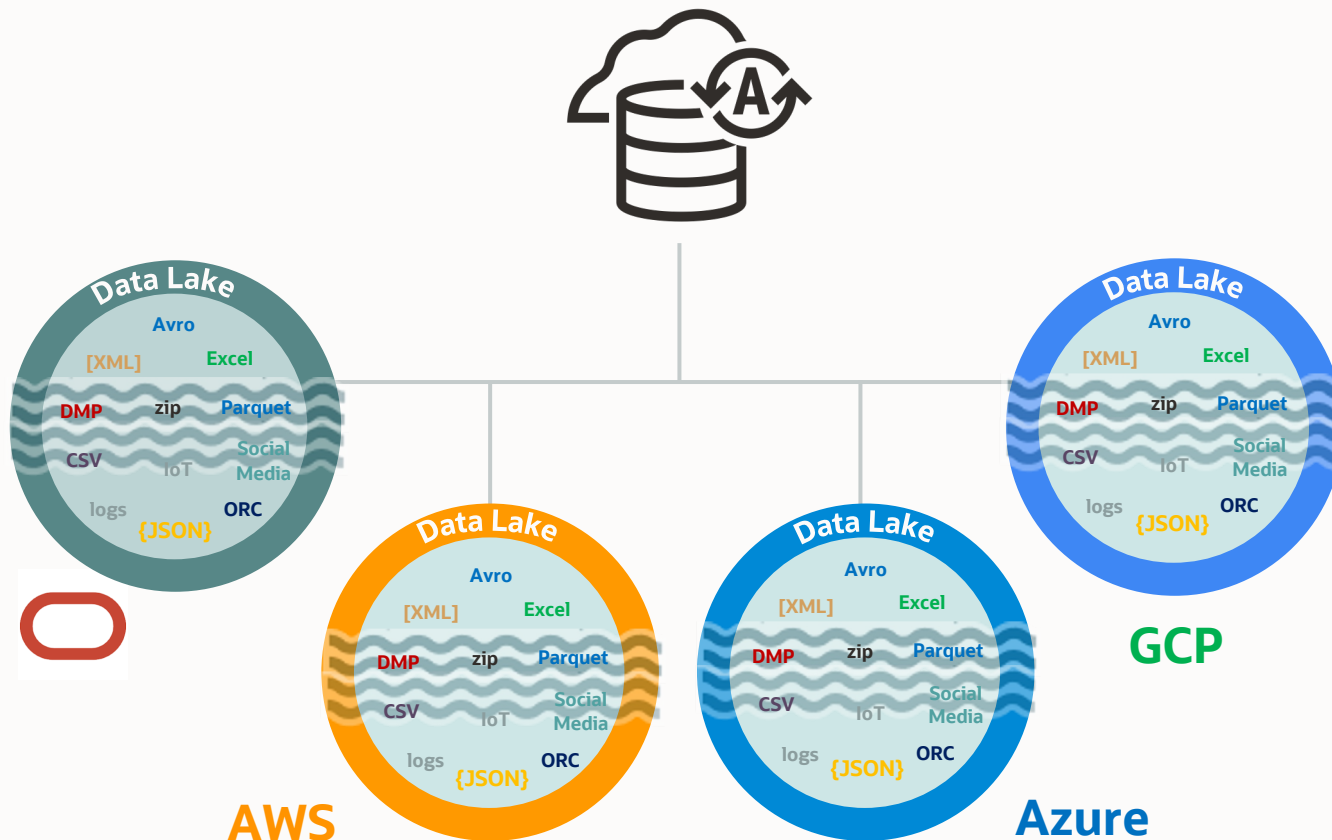
Data Lakehouse



Data Fabric



# Simple, scalable, secure multi-cloud access to all types of data



Query or load data from **OCI, AWS, Azure and GCP** object stores

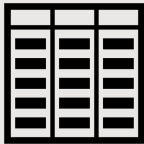
- Access control using native cloud access policies (OCI Resource Principle, AWS Resource Names, ...)

Support **all common data types** and table formats

- Parquet, ORC, CSV, JSON, Avro and more
- **Apache Iceberg tables**, Delta Share tables



# Autonomous Database **Data Catalog**



## Unified Data Catalog

Mount catalogs from other databases, cloud stores, external data catalogs, and shares  
Search across entire connected data ecosystem for unified view  
Simple access to any data

### Autonomous Databases

### Data Lake Files

Avro

[XML] Excel

DMP zip Parquet

CSV IoT Social Media

logs {JSON} ORC

### Data Catalogs

OCI Data Catalog   Iceberg Catalog   Amazon Glue

### Data Shares

Tableau   Power BI   Databricks   Google BigQuery

Qlik   Looker   Microsoft Azure   Dremio

Spark   Pandas

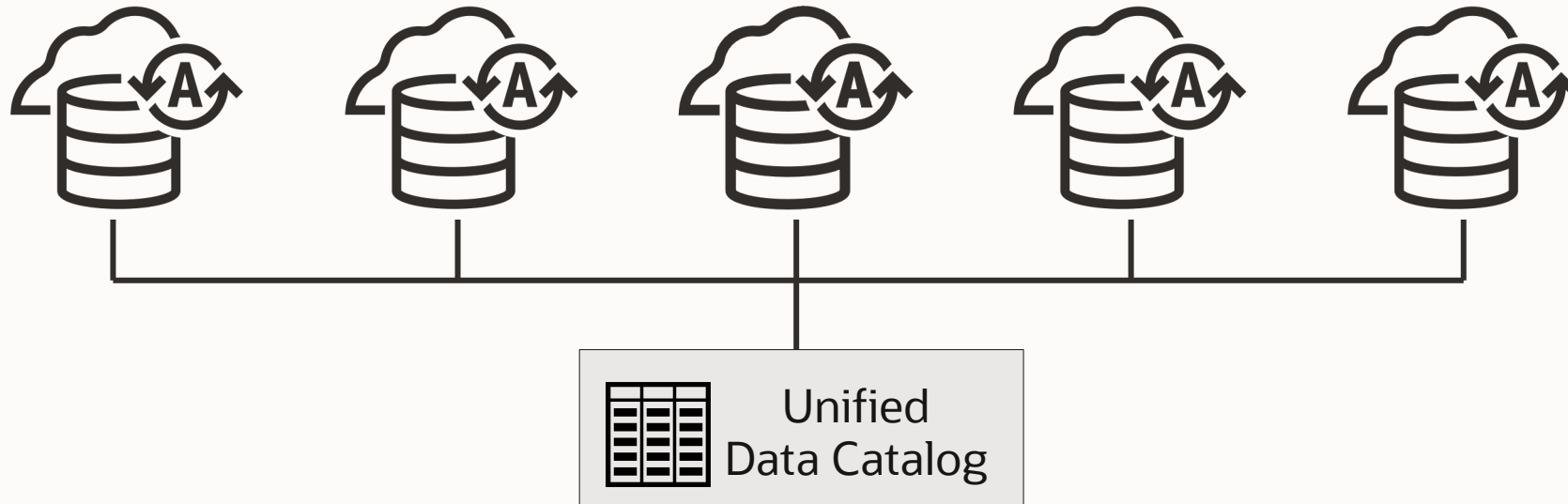
Presto   Trino





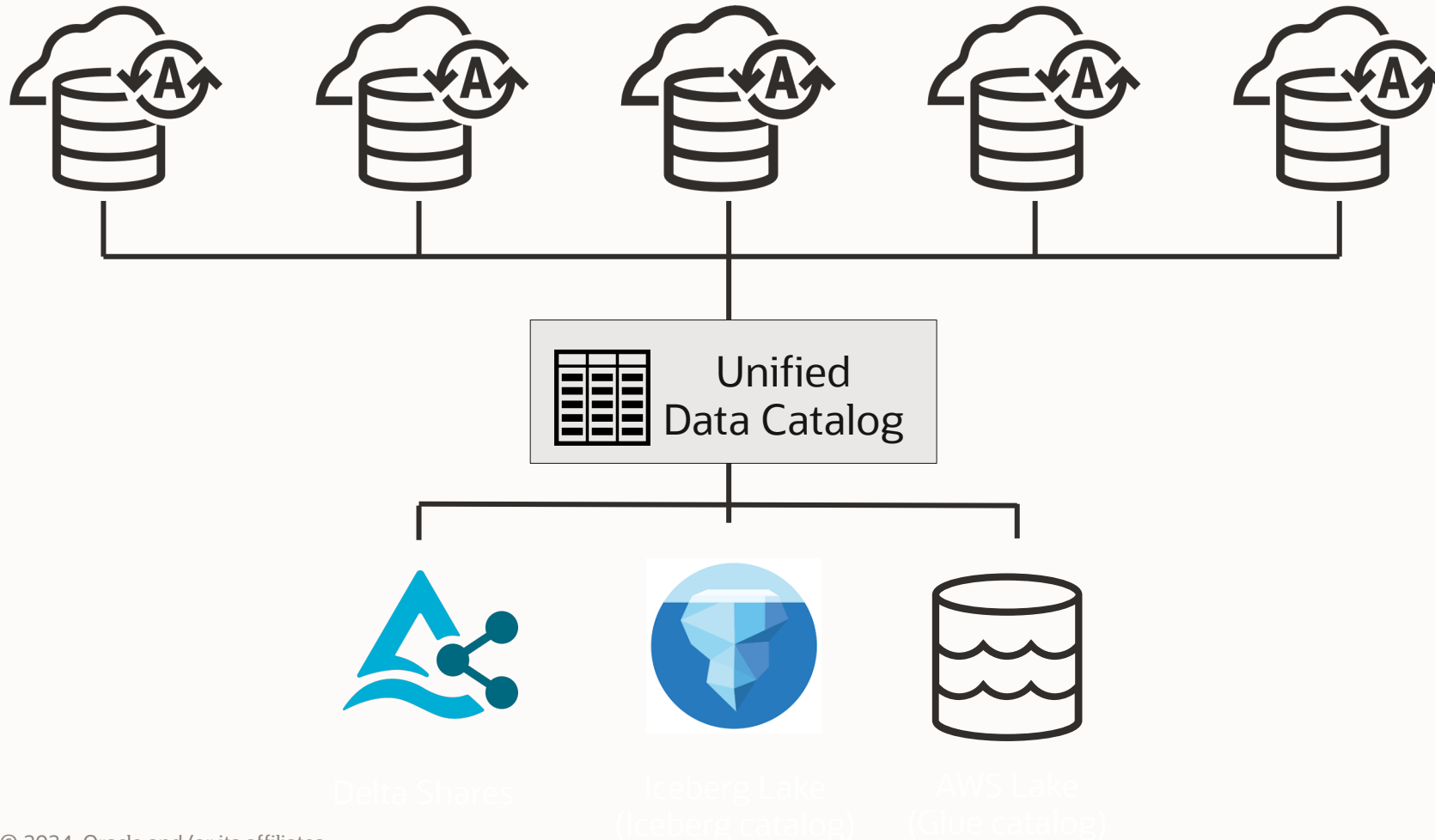
Coming Soon

# All Autonomous Databases use the same Unified Catalog



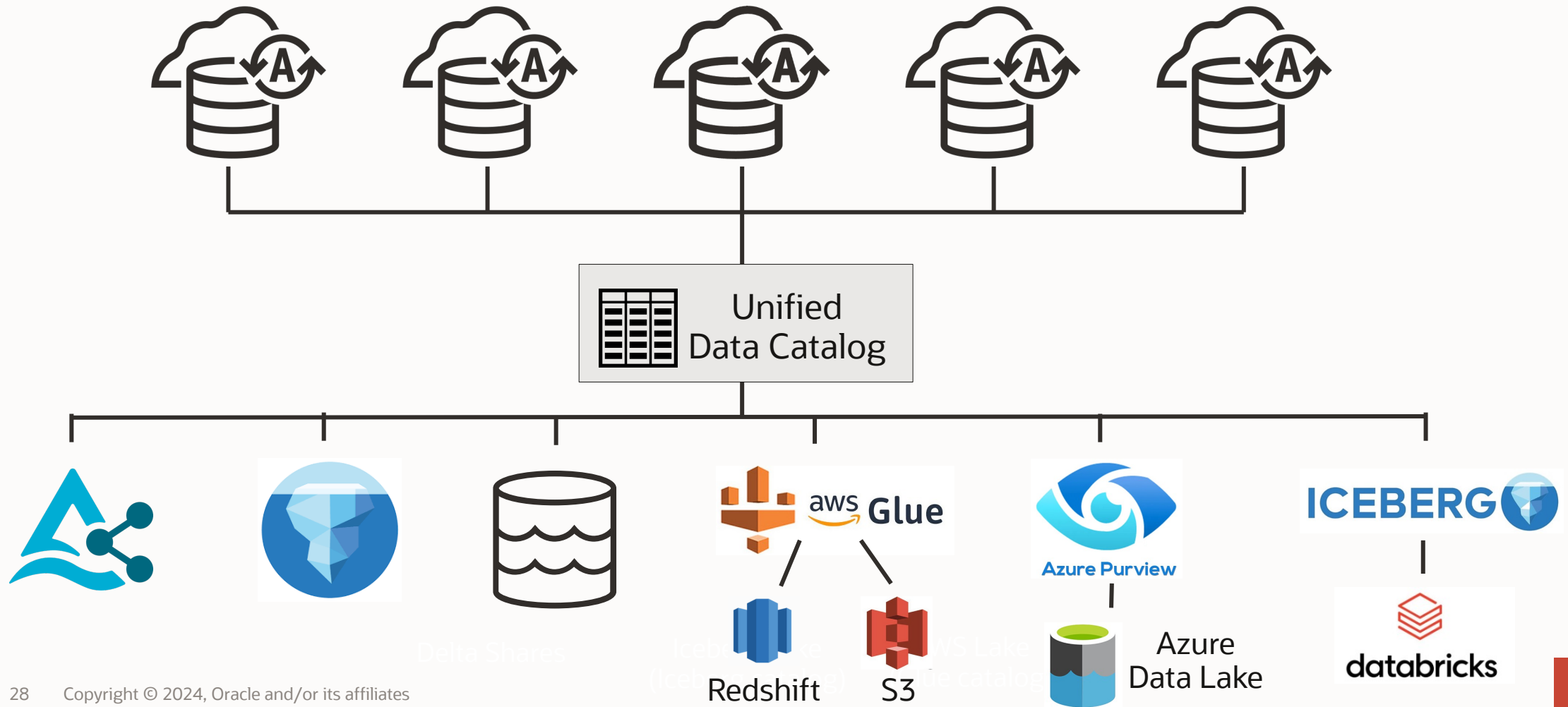
Coming Soon

# All Autonomous Databases access the same Data Lakes and Data Shares



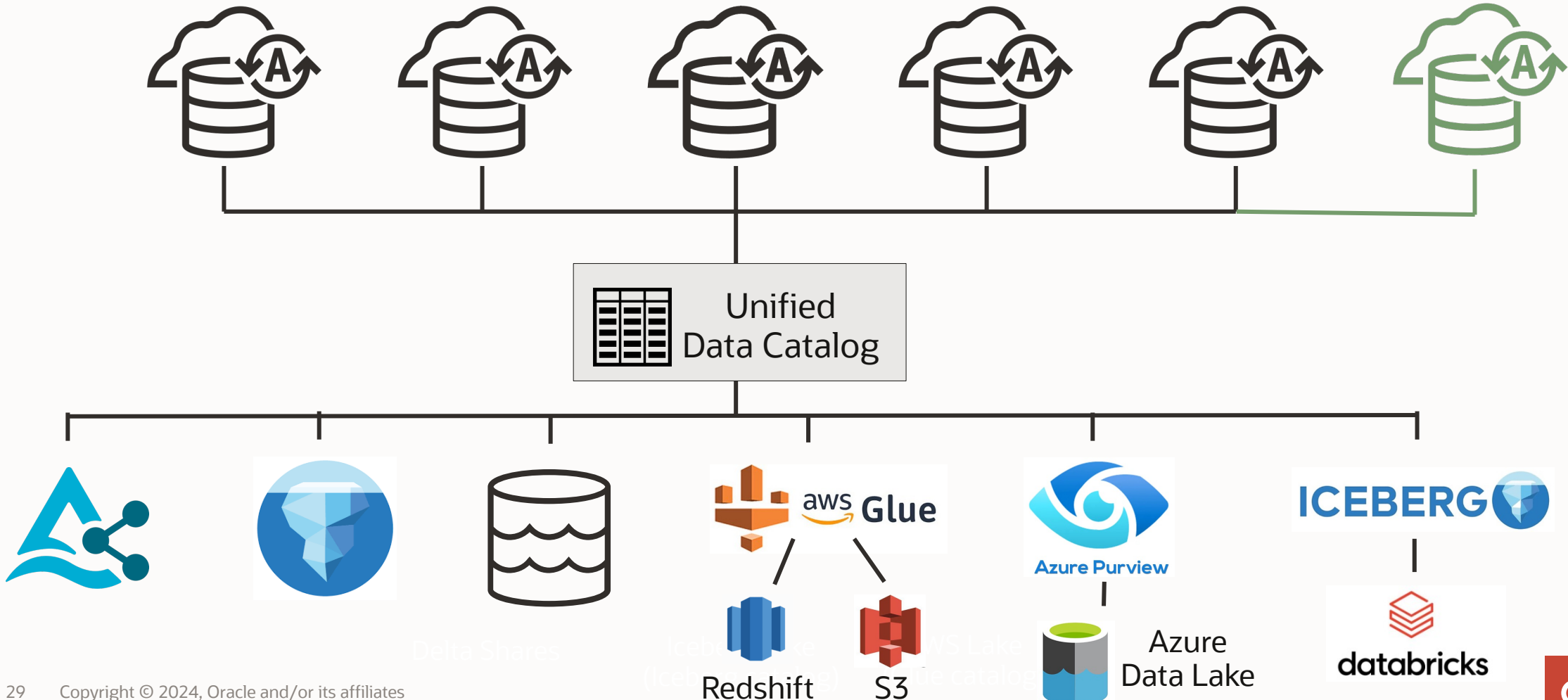
Coming Soon

# All Autonomous Databases access *other* Catalogs



Coming Soon

# Dynamically add Autonomous Databases any time



**This is a Preview  
Feature Coming Soon**

**Oracle Autonomous Database**  
**Data Studio Catalog**

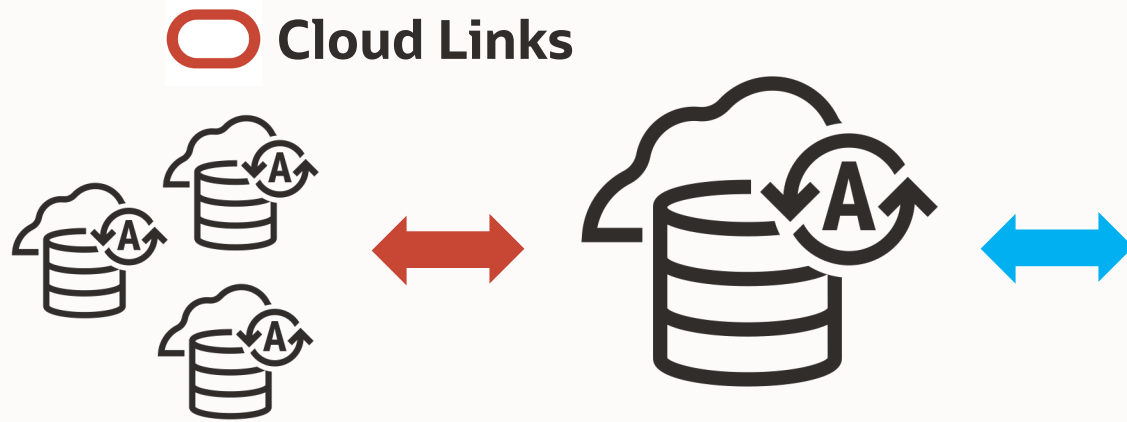
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**Simplify data discovery and  
integration**

# Autonomous Data Warehouse: A Platform for Data Sharing and Data Exchange



# Data Sharing in Autonomous Database



## Delta Sharing

OPEN SOURCE CLIENTS	COMMERCIAL CLIENTS
Spark	Business Intelligence
pandas	Analytics
presto	tableau
R	Power BI
HIVE	databricks
	Google Big Query
	Qlik
	Looker
	Microsoft Azure
	dremio

- Share data with anyone using standard open-source protocol (Delta Sharing)
- Easily share data across Oracle Autonomous data warehouses and transactional systems
- Versioned data shares and live data shares

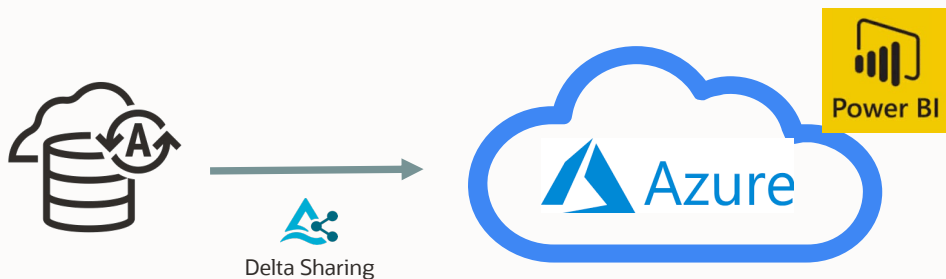


# Data Sharing in Autonomous Database

## Multinational Pet Healthcare organization

Enable additional teams to access Autonomous Database using PowerBI

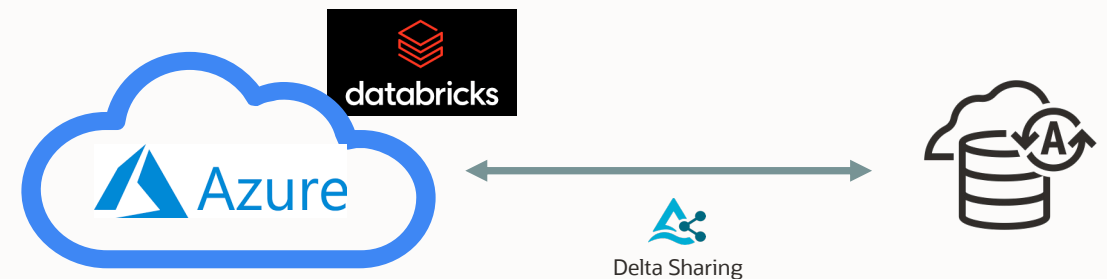
- No direct access to ADW needed
- No additional query workload on ADW



## Multinational Packaging manufacturer

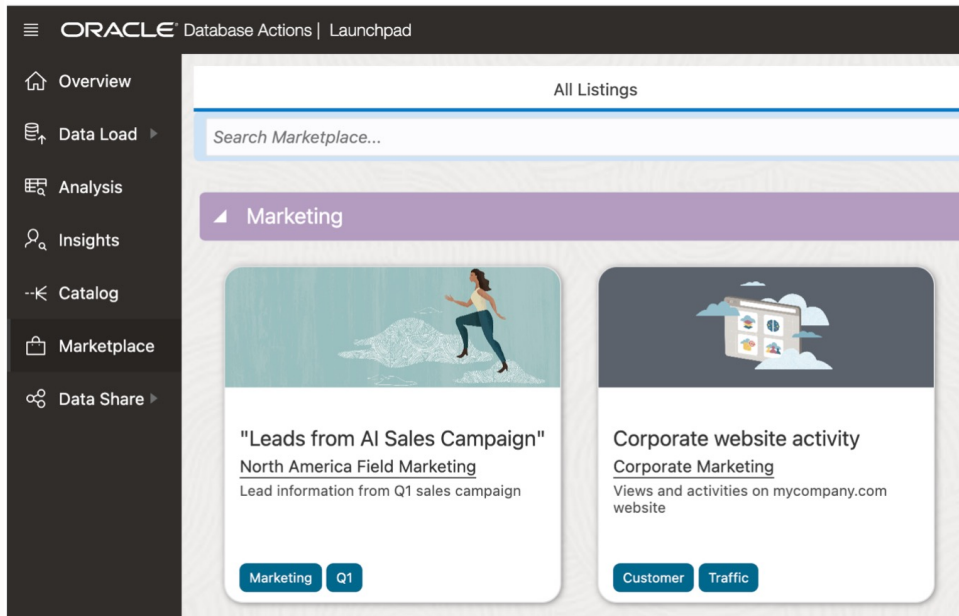
Simple integration between Autonomous Database and Databricks on Azure

- No ETL required
- Simple to implement and maintain



# Data Marketplace in Autonomous Database

Explore data products, collaborate across your organization and beyond



- Easily explore available datasets
- Import the datasets directly into your database with one click
- Add your own datasets to the marketplace and collaborate with everyone in your organization



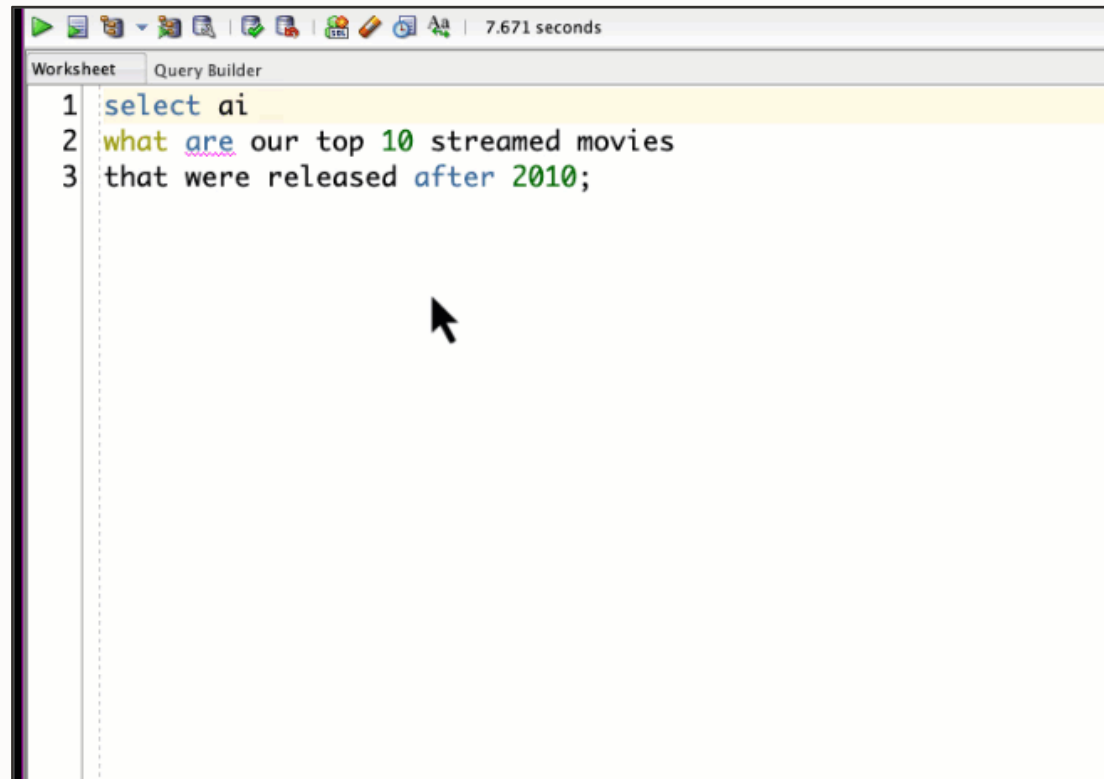
**Oracle Autonomous Database**  
**Data Studio Marketplace**

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# Publish and Access Datasets

# Autonomous Data Warehouse: A Platform for AI

# Easy to extend and build new natural language apps with **Autonomous Database Select AI**



```
1 select ai
2 what are our top 10 streamed movies
3 that were released after 2010;
```

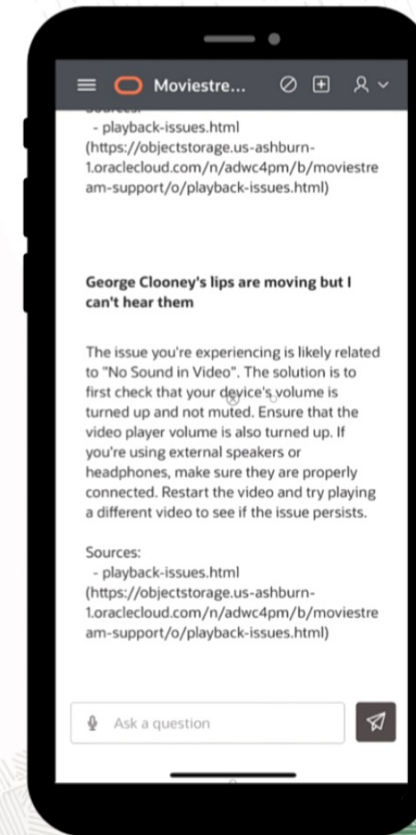
Use a **standard SELECT** statement followed by **AI** and your question

Process the result as you would **any other SQL** result set

# Simplify developing RAG applications - Demo

NEW

## Oracle Autonomous Database Building apps with Select AI



# AI and Autonomous Database

## Accelerate dev for AI-centric apps

- Select AI
- NEW** • Retrieval Augmented Generation (RAG)
- NEW** • Graph-based RAG
- NEW** • AI data pipelines: create embeddings using Transforms

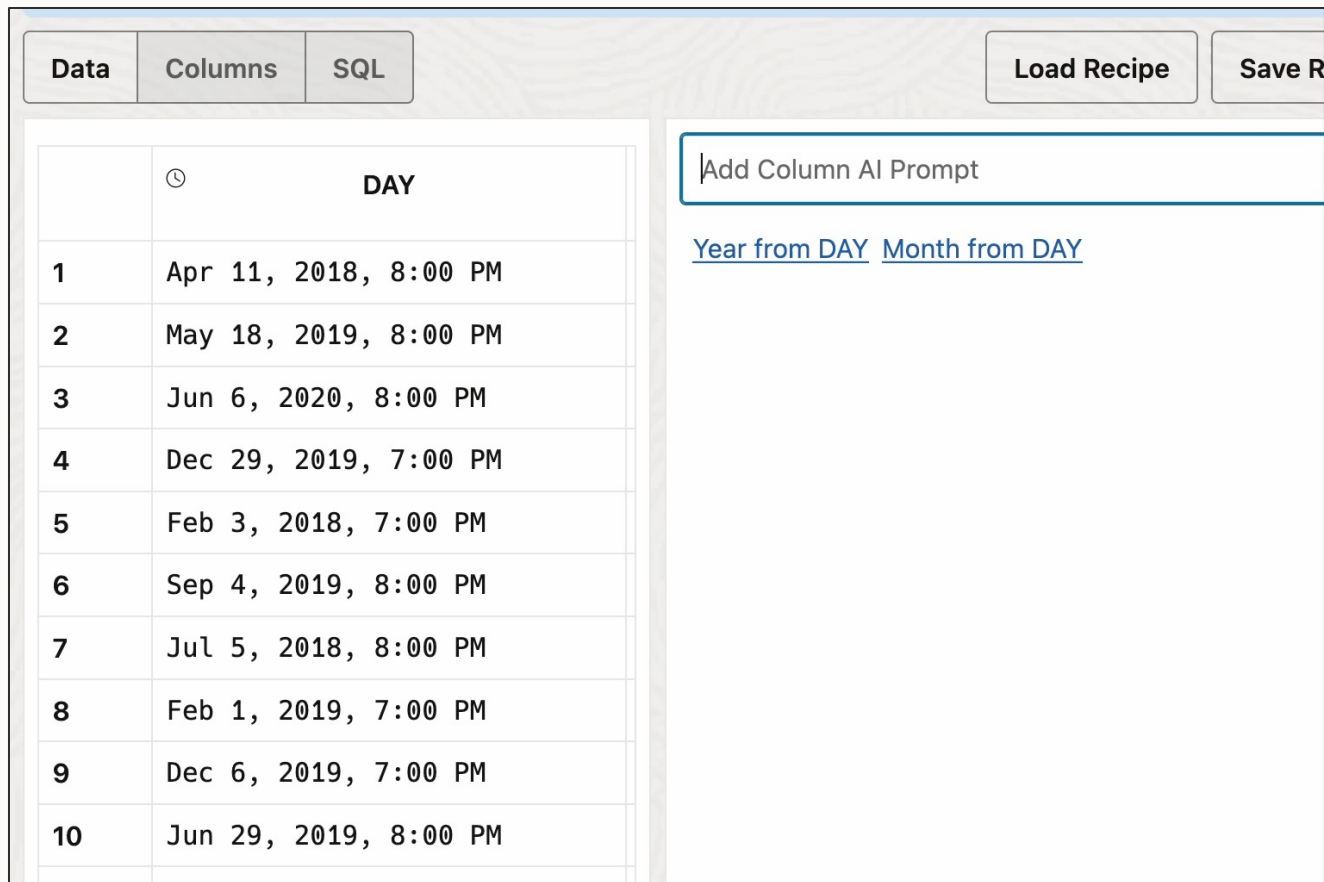
## Simplify data management with AI

- NEW** • Data Load
  - Automatically detect PII data
  - Enrich data using AI Expressions
- NEW** • Table Assistant
  - Easily edit data and columns using natural language commands
- NEW** • Synthetic Data Generation





# Edit tables with natural language using Autonomous Database Table AI Assist



The screenshot displays the Oracle Autonomous Database Table AI Assist interface. It features a table with 10 rows of data under the column 'DAY'. To the right of the table is a text input field labeled 'Add Column AI Prompt' with two example prompts: 'Year from DAY' and 'Month from DAY'. Above the input field are buttons for 'Load Recipe' and 'Save R'.

	DAY
1	Apr 11, 2018, 8:00 PM
2	May 18, 2019, 8:00 PM
3	Jun 6, 2020, 8:00 PM
4	Dec 29, 2019, 7:00 PM
5	Feb 3, 2018, 7:00 PM
6	Sep 4, 2019, 8:00 PM
7	Jul 5, 2018, 8:00 PM
8	Feb 1, 2019, 7:00 PM
9	Dec 6, 2019, 7:00 PM
10	Jun 29, 2019, 8:00 PM

Ask for a new column  
using a natural  
language prompt

Generates the SQL for  
you automatically



**Oracle Autonomous Database**  
**AI Expressions and AI Assist**

---

# Enhance Table Content with AI

# Freedom to choose from LLMs in Oracle Cloud or other Clouds

Integration with 35 different LLMs across 7 providers to deliver widest choice

Choose from a wide array of supported LLMs from:

- OCI Generative AI
- OpenAI
- Azure OpenAI
- Cohere
- GCP Gemini **NEW**
- Claude **NEW**
- Hugging Face **NEW**

```
-- Create an AI profile used for natural language queries
DBMS_CLOUD_AI.create_profile(
    'GENAI_VECTOR',
    '{"provider": "oci",
     "credential_name": "OCIAI_CRED",
     "vector_index_name": "support"
    }');

-- Create the vector index and the pipeline. Its source is the web site
DBMS_CLOUD_AI.create_vector_index(
    index_name => 'support',
    attributes => '{"vector_db_provider": "oracle",
                  "location": "/n/adwc4pm/b/moviestream-support/o/",
                  "profile_name": "GENAI_VECTOR",
                  "vector_dimension": 1024,
                  "vector_distance_metric": "cosine",
                  "chunk_overlap": 50,
                  "chunk_size": 450
    }');
```



# Run models directly in Autonomous Database

Import transformer models using ONNX to speed up in-database vector processing

**LEVERAGE** ready-made, pre-trained AI models

**IMPORT** ONNX formatted models into Autonomous Database

**SEAMLESS**, more efficient way to generate vector embeddings



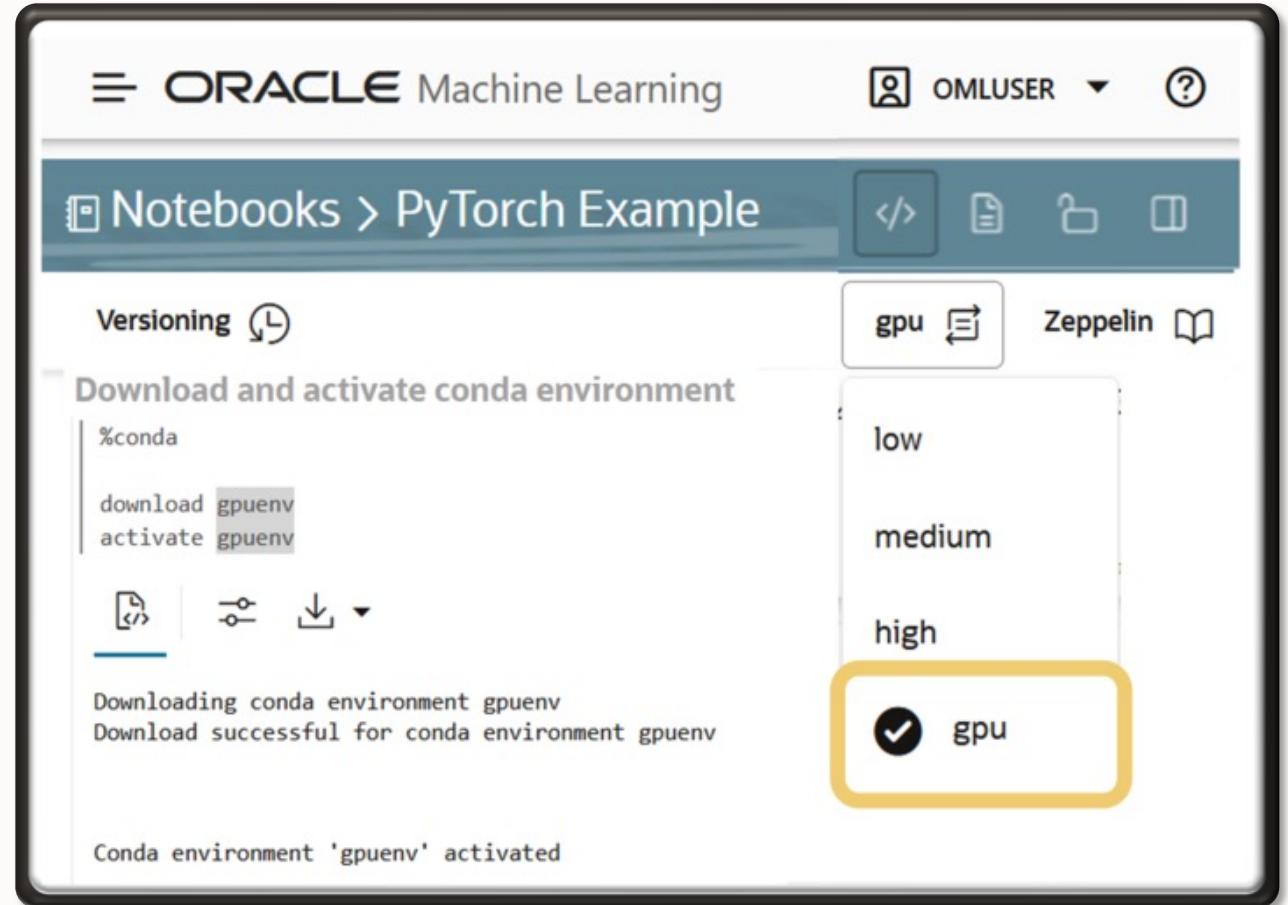
```
BEGIN
  DBMS_VECTOR.LOAD_ONNX_MODEL (
    directory => 'DM_DUMP',
    file_name => 'all_Minilm_L12_v2.onnx',
    model_name => 'ALL_MINILM_L12_V2');
END;
/
```

# Run models directly in Autonomous Database with GPU's

Fully-managed access to NVIDIA GPUs to accelerate performance of AI data operations

Supercharging for Python workloads via blazing-fast GPU power

- Simple **One-click** GPU Activation
- **Lightning-Fast** Processing for AI embedding models, deep learning training, and inferencing
- **Integrated** efficiency for optimal performance and productivity
- Coming soon: Execute in-database ONNX models on GPU's



# Autonomous Database: Modern Data Platform

## Built for **every analytics persona**

- Data Engineer
- Data Scientist
- Application Developer
- Data Analyst

## Built for **every analytics workload**

- SQL
- Graph
- Machine Learning
- Spatial



## Built for **all analytics data**

- Cloud Data Lakes
- Open Table Formats
- Streaming Data
- SaaS Data

## Built for **end-to-end data governance**

- Data Catalog
- Data Quality
- Data Integration
- Data Security

## Built for **secure collaboration**

- Data Sharing
- Cloud Links
- Data Marketplace
- Clean Room





# Get started!

- Try Autonomous Database for free
- Watch demos
- Learn with self-service workshops
- Keep up with the latest news

ORACLE Products Industries Resources Customers Partners Developers Company

Database > Autonomous Database >

Try Autonomous Database for free Download Autonomous Database for free

## Get started with Autonomous Database

Discover these essential resources that will help you deliver successful projects using Oracle Autonomous Database. Whether you're building reporting solutions for your organization, needing to gain insights using sophisticated analytics, developing next generation applications - or all of these - Autonomous Database helps get you there. Get started today.

### Query your data using natural language

Don't worry about where your data is stored or how to formulate a SQL query. Simply "speak human" to ask questions about your business and let Oracle Autonomous Database Select AI provide the answer using your data.

Watch the webcast Read the blog

### Improve collaboration and decision-making across teams through data sharing

Share data securely and efficiently across different departments, applications, and organizations using the Delta Sharing protocol. With Autonomous Database data sharing, users can easily grant access to subsets of their data while maintaining full control over who has access and what they can do with it.

Watch the webcast Read the blog

### Reduce compute costs by consolidating workloads on Autonomous Database

Learn how to potentially achieve up to 87% compute cost savings versus paying for each instance individually with Elastic Resource Pools on Autonomous Database.

Read the blog

Stay informed about the latest updates Subscribe to the Oracle Database Insider

## Autonomous Database Resources

### Demonstrations

Discover how easy it is to integrate data, innovate with self-service analytics, develop smarter apps, and keep your data secure through a series of brief demos.

### LiveLabs

Get hands-on experience with Oracle Autonomous Database using online tutorials for free. You'll learn about a range of topics, from provisioning and data loading to performing advanced analytics and app development.

### Insider

Hear direct Management Autonomous Database features, benefits, and more.

GET STARTED

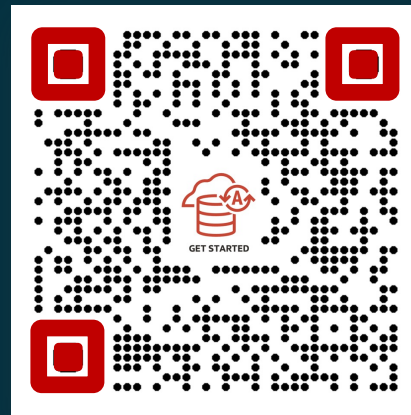


<https://www.oracle.com/autonomous-database/get-started/>

# Important links to bookmark

Links to get you started and to make sure you keep up to date with everything related to Autonomous Database

**1** Our new Get Started Page is the right place to start: : [bit.ly/adb-get-started](https://bit.ly/adb-get-started)



**2** Join us:  
**LinkedIn**  
[bit.ly/adb-linkedin-grp](https://bit.ly/adb-linkedin-grp)

**X**  
[@AutonomousDW](https://twitter.com/AutonomousDW)

**3** Got a question?  
We are on stackoverflow  
[bit.ly/adb-stackoverflow](https://bit.ly/adb-stackoverflow)

Join us on Developers Slack  
(search #oracle-autonomous-database)  
[bit.ly/odevrel\\_slack](https://bit.ly/odevrel_slack) (odevrel\_slack)



# Final Thoughts

[oracle.com/goto/adb-learning-lounge](https://oracle.com/goto/adb-learning-lounge)

The screenshot shows the Oracle Autonomous Database Learning Lounge website. At the top, there is a navigation bar with 'ASK TOM', a search bar, and links for 'Questions', 'Office Hours', 'Videos', 'Resources', and 'Classes'. Below the navigation bar, the main heading is 'Autonomous Database Learning Lounge'. There are buttons for 'Share', 'Register for Series', and 'Log In To Register'. The main content area starts with a paragraph about the series, followed by a link to 'Get Started with Autonomous Database' with a red arrow pointing to it. Below this, there are tabs for 'Show All', 'Upcoming', and 'Replays'. The 'Upcoming' section features a card for 'What a week! Recapping Autonomous Database at CloudWorld'24' with a red arrow pointing to it. The 'Replays' section is sorted by 'Newest' and displays four replay cards, each with a red arrow pointing to it. The cards include titles like 'The new way to manage Oracle Databases on Microsoft Azure for Oracle DBAs' and '(Portuguese) O potencial da Inteligência Artificial e Automação com Oracle Autonomous Database e Oracle Cloud Infrastructure (OCI)'.

Links

Upcoming

Replays



**AUTONOMOUS  
DATABASE** **LEARNING  
LOUNGE**

**Thank you for joining  
today's webinar !!!**

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