ORACLE

Lakehouse Without Compromises:
Oracle Autonomous AI Lakehouse with Apache Iceberg Support

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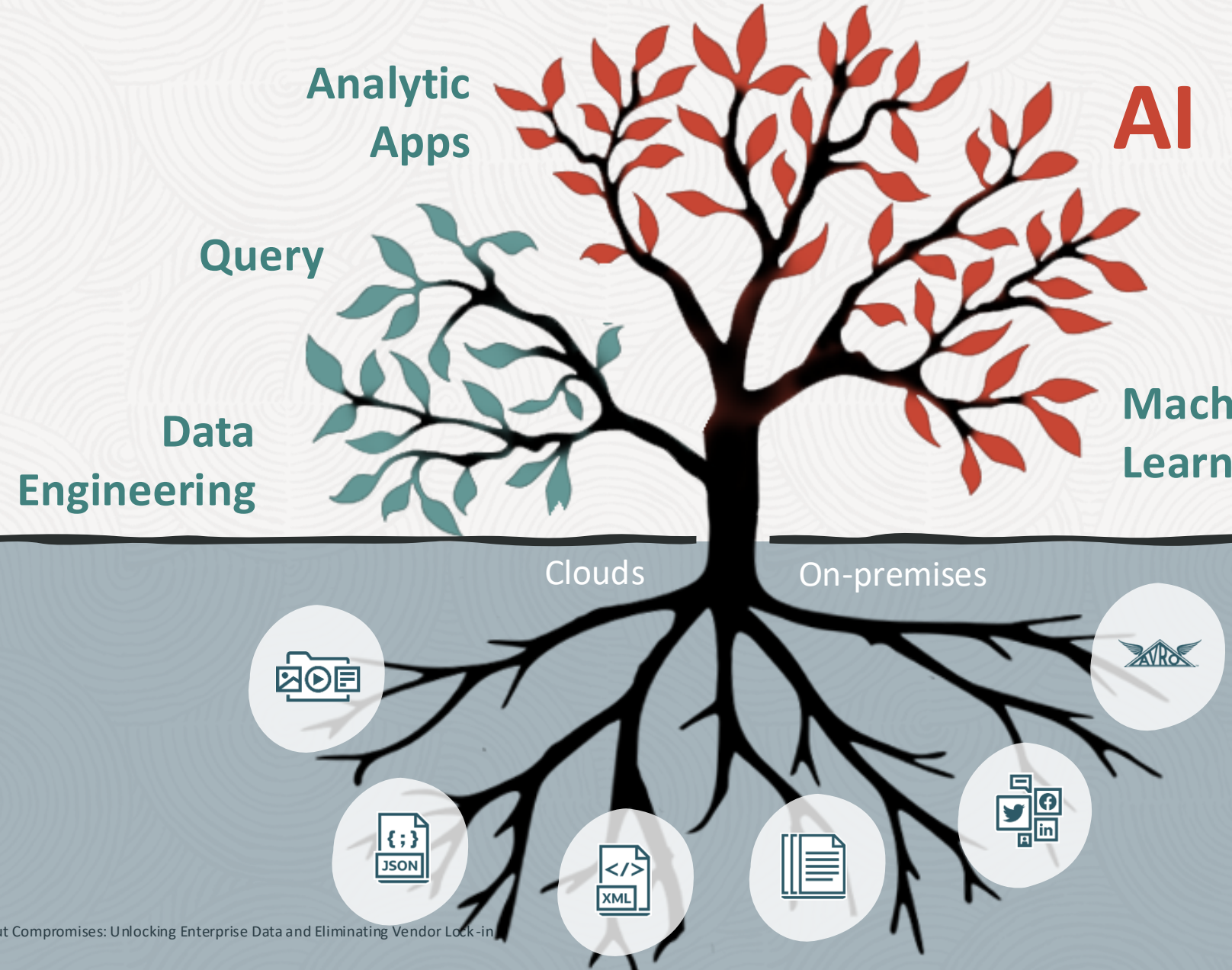
Data Lakehouse: Foundation for AI

Any Workload

Any Location

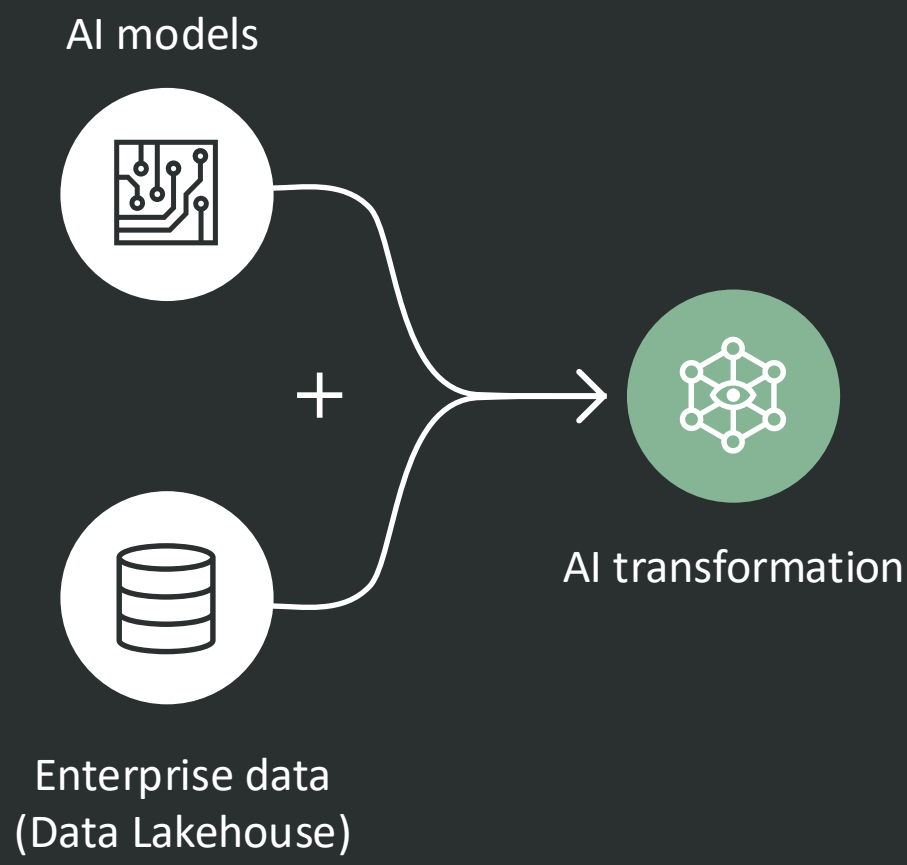
Any Data



AI: The Next Industrial Revolution

AI is going to **transform entire industries**, but most organizations are unprepared for this shift

Blending **foundation models** with **enterprise data** is key to achieving disruptive AI transformation



Serving Data the AI way – Foundations for an AI-ready Data Strategy

Reduced Complexity
Unify all data types and data sources under one architecture, with simplified governance

Trusted Data
Maintain accurate, consistent and protected data

Performance at scale
Deliver performance and availability at scale

Cost Efficient
Optimize infrastructure and operations costs without compromising performance

Built-in Intelligence
Bring AI to the enterprise Data

Empowered Users
Make data accessible, understandable and usable for all

Introducing Oracle Autonomous AI Lakehouse

Complete and Open

Open and interoperable with Iceberg

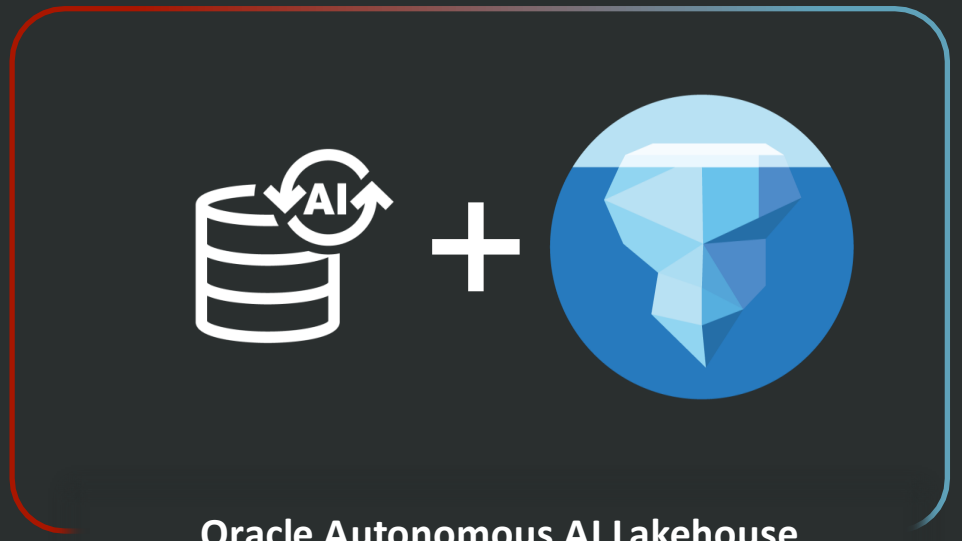
- Runs on OCI, Multicloud, Cloud@Customer

Lakehouse without compromise

- The openness of **Iceberg**
- The performance, reliability, and trust of Oracle

AI-powered operations

- Built-in AI, analytics, and security across all data
- Operationalize AI Insights directly in business operations



Enterprise-wide AI & analytics

The best of Open Table Iceberg Data Lake PLUS the best of Oracle AI Database

Industry Analyst Insights: Lakehouse Trends in the Age of AI

Stephanie Walter

Practice Lead, AI Stack

HyperFRAME Research

Lakehouse Trends in the Age of AI

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Practice Leader, AI Stack

HyperFRAME RESEARCH

The Lakehouse Conversation Has Changed

- The lakehouse is no longer just an analytics architecture
  - Originally designed to unify BI and analytics
  - Now becoming the control plane for AI workloads

- AI is reshaping expectations around
  - Data access
  - Governance
  - Interoperability
  - Platform control

Adopting a Modern Lakehouse Architecture

Demand is growing for architectures that combine:

- Warehouse-grade governance and performance
- Lake-style openness and scalability
- These architectures now underpin analytics and AI initiatives

What’s Driving Lakehouse Popularity

- Unlocking more value from existing and new data assets
- Supporting democratization of AI and machine learning alongside analytics
- Enabling real-time and distributed data access
- Preparing for hybrid and multi-cloud environments

Common Vendor Approaches in the Market

Integrated Lakehouse Platform Model

- Combines storage, compute, governance, and AI in a single ecosystem
- Delivers rapid innovation and tight integration
- May introduce ecosystem dependency and reduced portability

Cloud-Native Data Warehouse Model

- Strong governance, security, and elastic performance
- Operates within a tightly controlled platform
- May limit openness or cross-platform interoperability

Endemic Friction Points in Enterprise Data Strategies

- Data silos fragment analytics and AI workflows
- Vendor lock-in limits flexibility and future choice
- Hybrid and multi-cloud increases data environment complexity
- Inconsistent governance slows innovation and compliance

Interoperability is Now AI-Driven

- Shared table metadata across engines
- Consistent governance and policies
- SQL, Python, and AI access to the same data
- Support for structured, semi-structured, and vector data
- Seamless operation across hybrid and multicloud environments

The Open Table Format Movement: Promise and Reality

- Promise: Unify metadata and governance to break down silos and vendor lock-in
- Importance: Avoid vendor lock-in and enable AI and analytics to run on any data, anywhere
- Reality: Performance, concurrency, updatability, and security are still maturing, creating operational complexity

Control, Governance, and Confidence

Key questions enterprises are asking:

- Who controls the data and metadata?
- Can we change platforms without breaking our strategy?
- How portable and future-proof is our architecture?

Governance remains a major concern:

- Consistent policy enforcement across engines and clouds
- End-to-end lineage for analytics, ML, and AI
- Auditability for model inputs, outputs, and decisions

Where Enterprises Go From Here

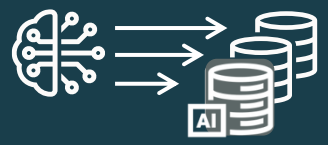
To succeed in AI, enterprises should prioritize data st
that:

- Unify metadata, governance, security, and lineage acr
environments
- Adopt open standards like Iceberg to maintain portabi
avoid lock-in
- Reduce silos and platform dependencies to increase
flexibility
- Enable analytics and AI everywhere your data lives, inc
across hybrid and multicloud


HyperFRAME
RESEARCH

AI for Enterprise Data. Oracle meets you where you are.

Freedom to run **AI & Analytics** natively on **your data, anywhere.**



AI on Live Data, Zero Copy

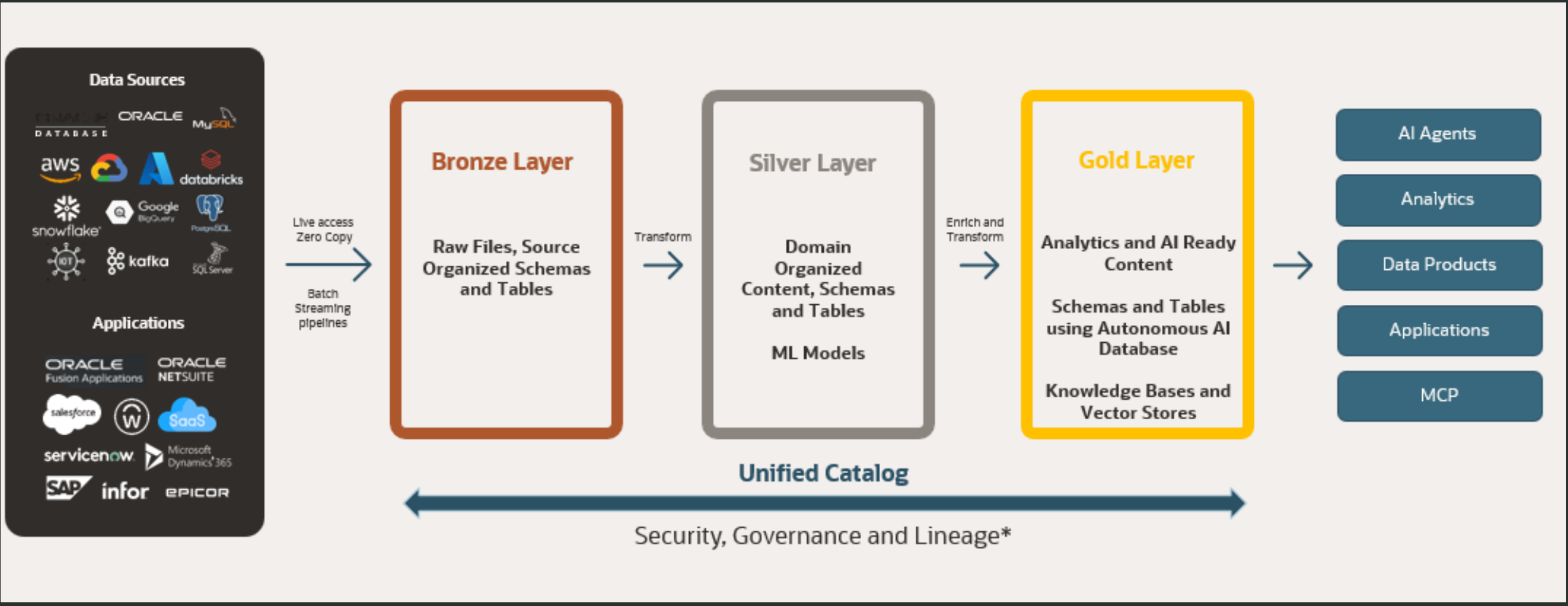
- Get instant answers on live data across multiple data sources and clouds with zero copy, zero ETL
- Respond to business events in near-real-time with AI Agents
- Maintain governance and security while bringing AI to the data

Modern AI Lakehouse

- Transition warehouses and marts to a secure, scalable, high-performance cloud
- Modernize legacy data experience with AI
- Build a new modern AI Lakehouse and AI analytics & apps

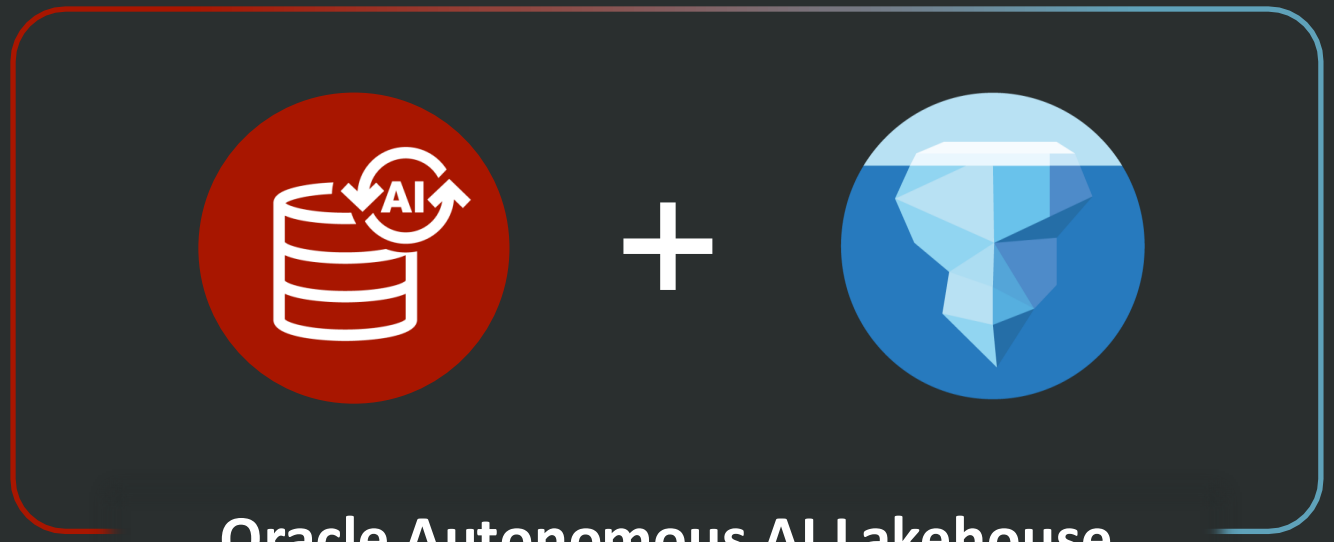
Complete AI Data Platform

- Build pipelines and infrastructure to support AI/ML initiatives
- Enable predictive, prescriptive, and agentic analytics
- Provide developers and data scientists with modern tools and platforms



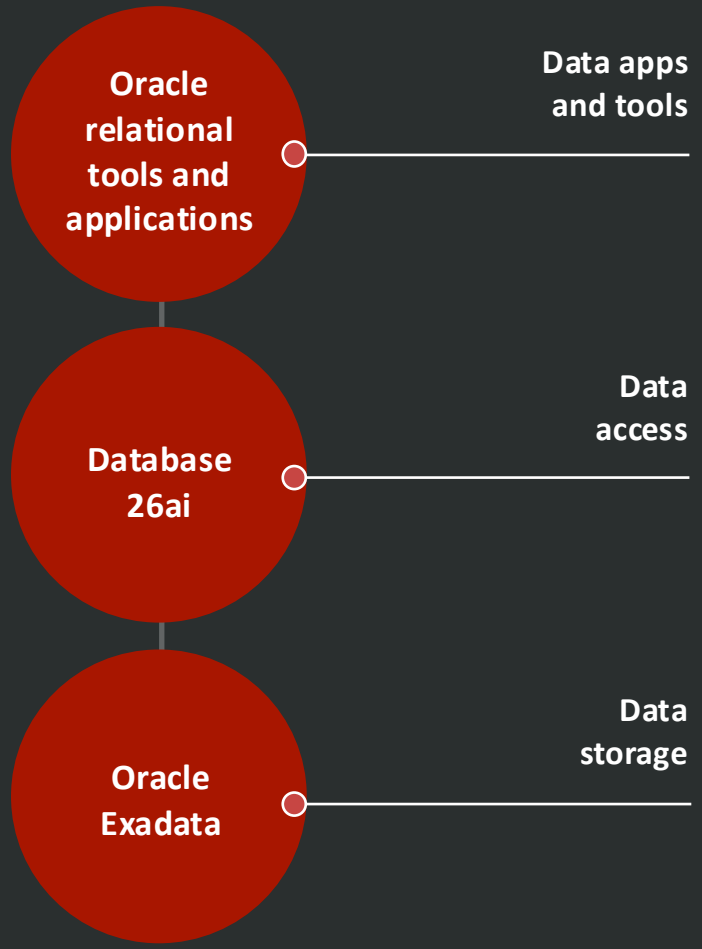
Oracle Autonomous AI Lakehouse Vision

Enterprise-wide AI & analytics with the best of Open Table **Iceberg** Data Lake PLUS the best of **Oracle**



The Oracle data platform is arguably the most capable

Open Standards
Oracle



Converged Data Architecture supports all leading data types

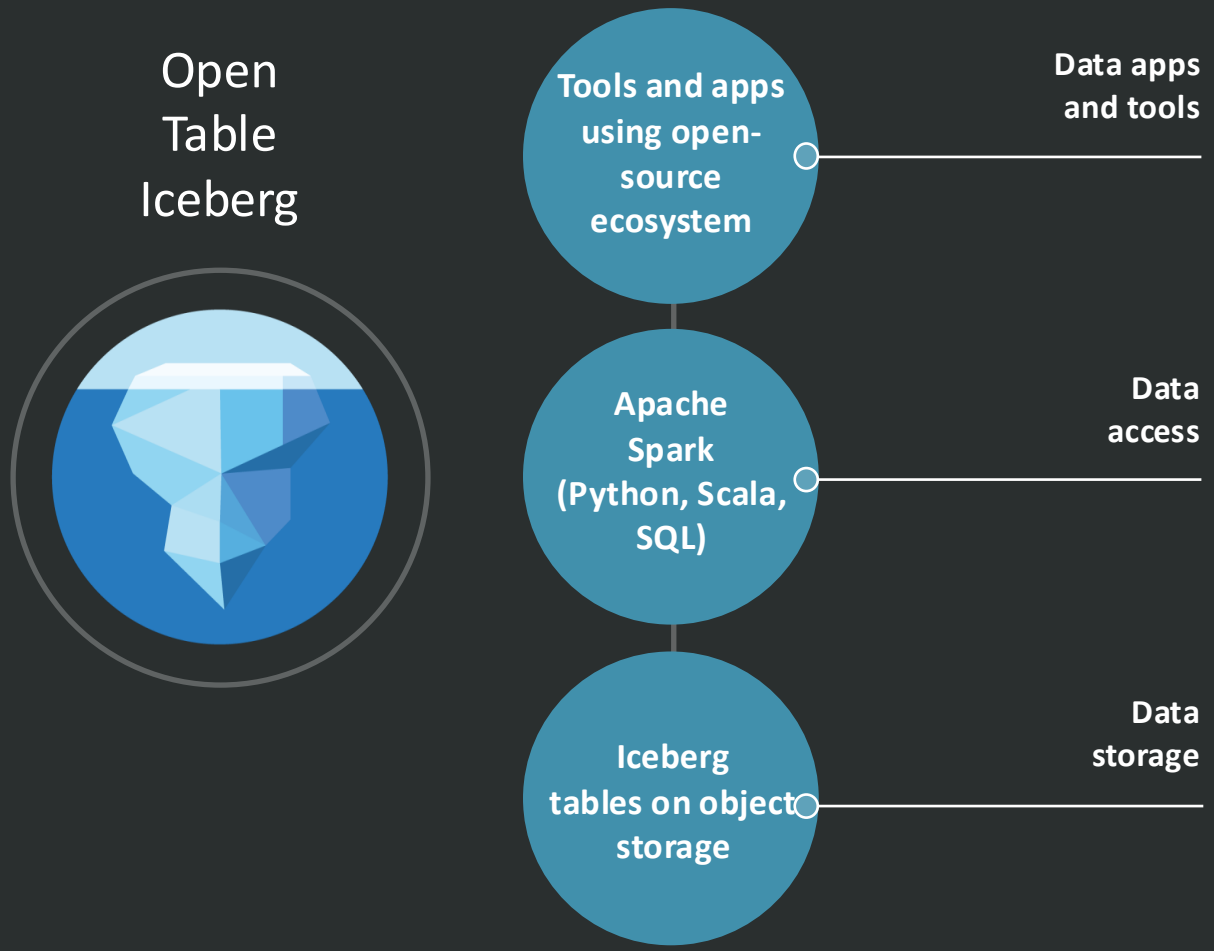
Sophisticated secure analytic SQL perfected over 45 years

Translytical real-time, enterprise workloads

Broadest ecosystem of tools and apps

Extreme-performance **Exadata storage** for same price as object store + no cost per IO

An Iceberg-based data platform is arguably the most open



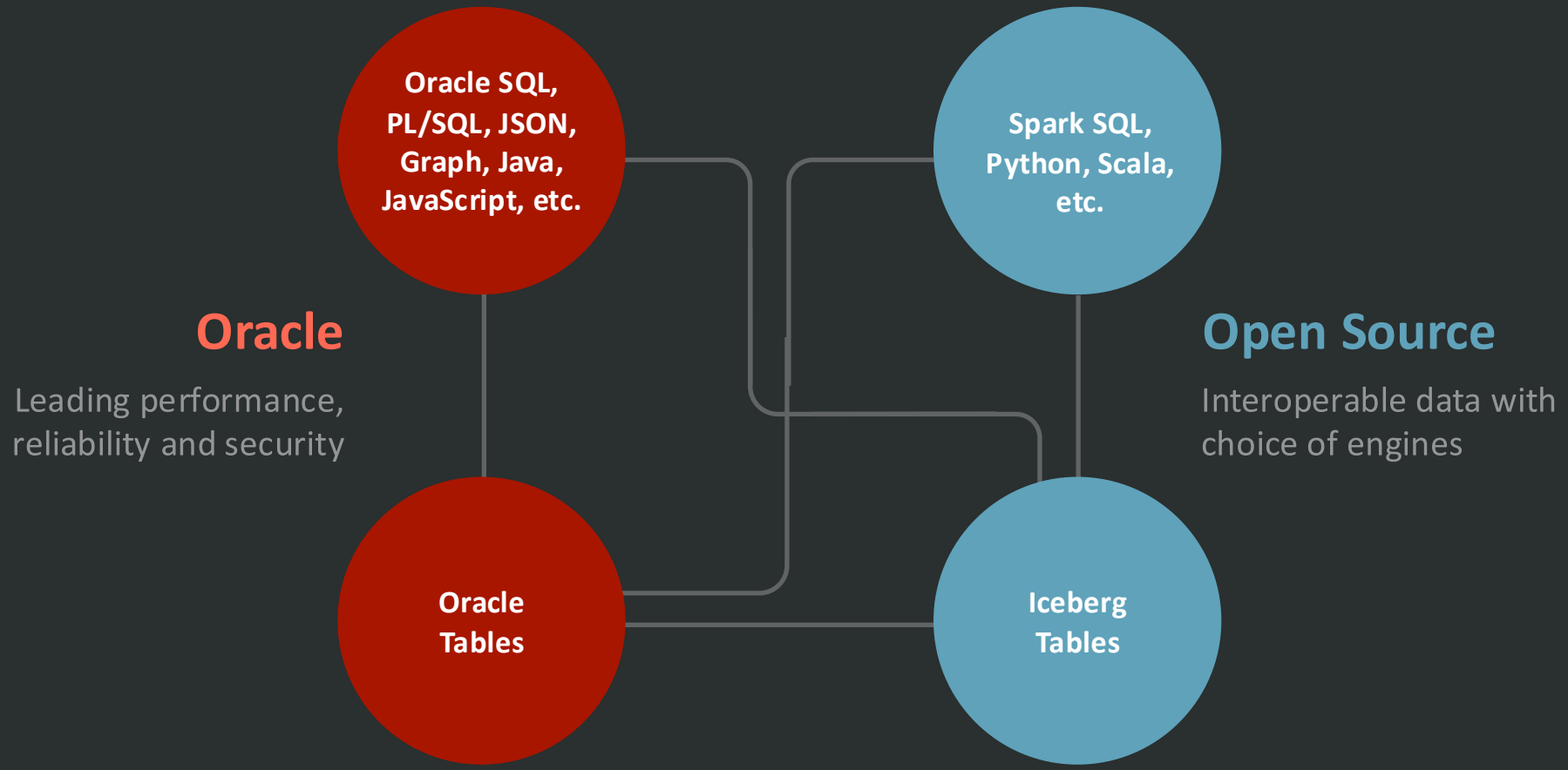
Popular with **data science and AI** communities

Open-source analytics engines, such as Spark and Flink, to process data

Open data formats:
Parquet, CSV, JSON, Avro, Delta UniForm, Iceberg

Highly scalable and low-cost **object storage**

Instead of having to choose between most capable and most open platform, you can now get the best of both with the Oracle Autonomous AI Lakehouse

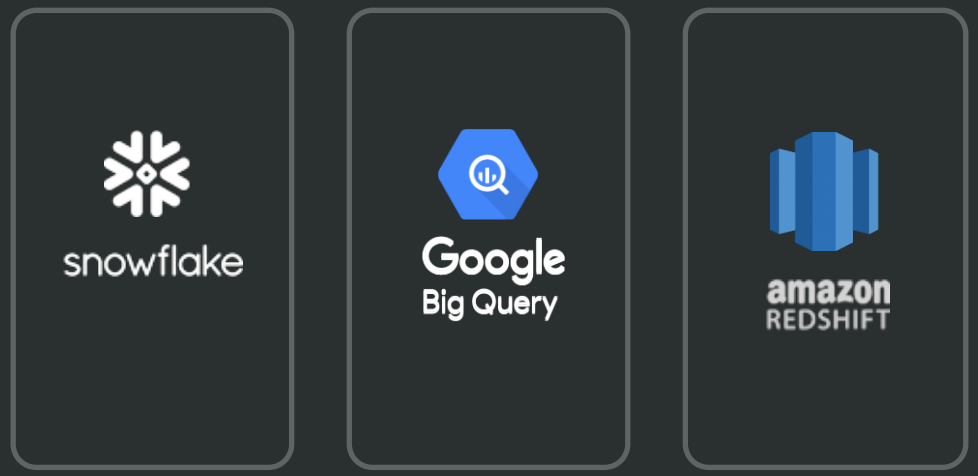


Accessing your Iceberg data with Oracle

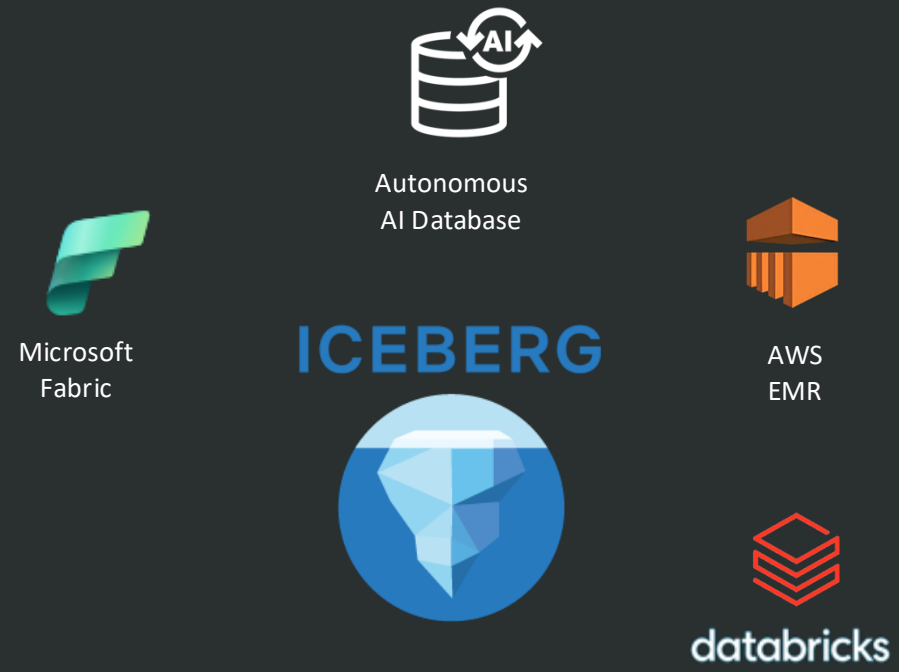
Introduction

The Data Platform world is changing…

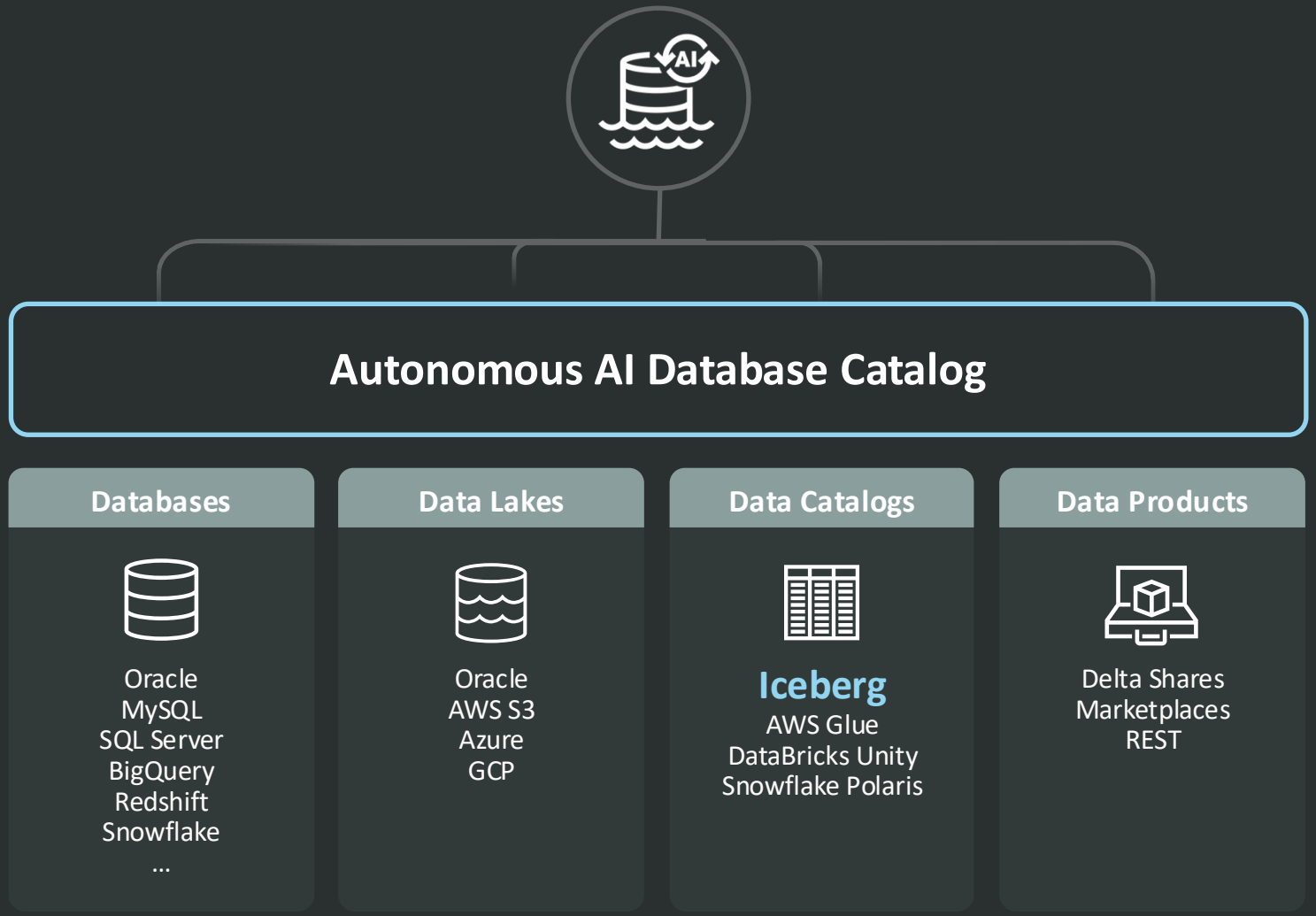
From analytic data silos…



To open and interoperable systems



Autonomous AI Lakehouse provides a new built-in data catalog



Unified view of
all enterprise data

"Catalog of catalogs"
architecture

Enables Oracle AI Lakehouse to discover and access data from other catalogs and sources

We provide Plug & Play Access to Iceberg

Immediately query any **Iceberg** Table

- Use any Iceberg catalog: Databricks Unity, Snowflake Horizon, AWS Glue
- Or one-command setup for **Iceberg** Tables in object storage

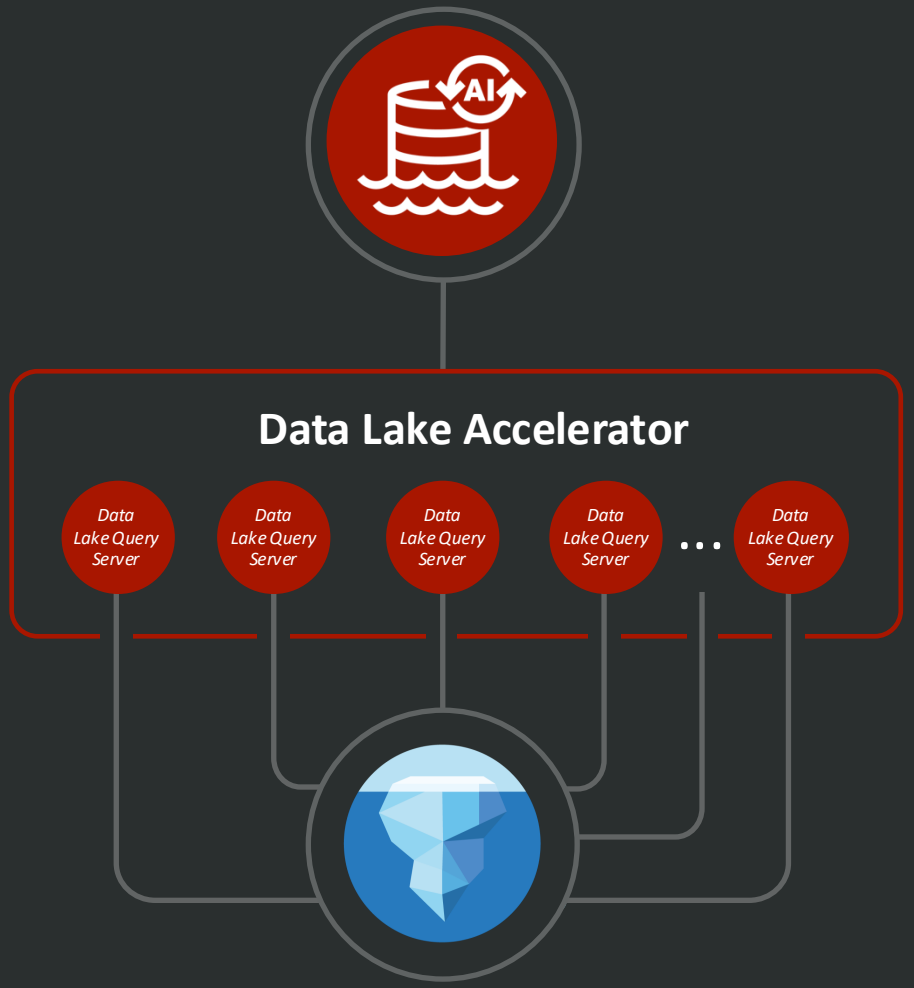
Simple SQL syntax: schema.table@catalog

```
SELECT
   Customer_Name,
   ...
FROM
   Marketing.Promotions@Databricks
WHERE
   Promotion_Date = '01-October-2025'
```

Accessing your Iceberg data with Oracle

Using all the performance of Exadata

Oracle Data Lake Accelerator provides fast and scalable queries of Iceberg tables and object storage data

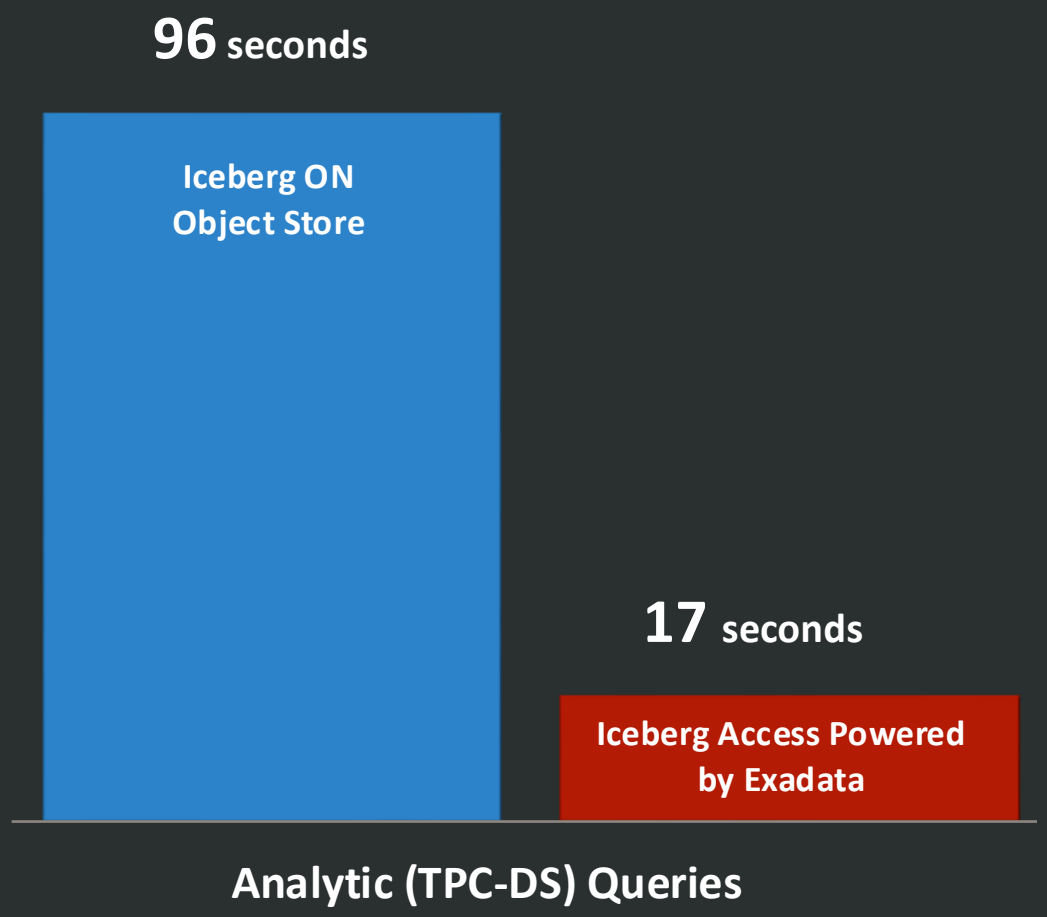


Scale out network bandwidth dynamically for scanning very large Iceberg tables

Automatic and transparent: Used as needed by large-scale queries

Pay-as-you-go: activated during query execution and deactivated afterwards

Iceberg Table caching for 5X faster performance



Performance of Native Exadata Tables for Iceberg Data

- Cache Iceberg tables automatically or based upon user-specified policies
  - Automatic caching coming soon
- All of the benefits of Exadata Storage

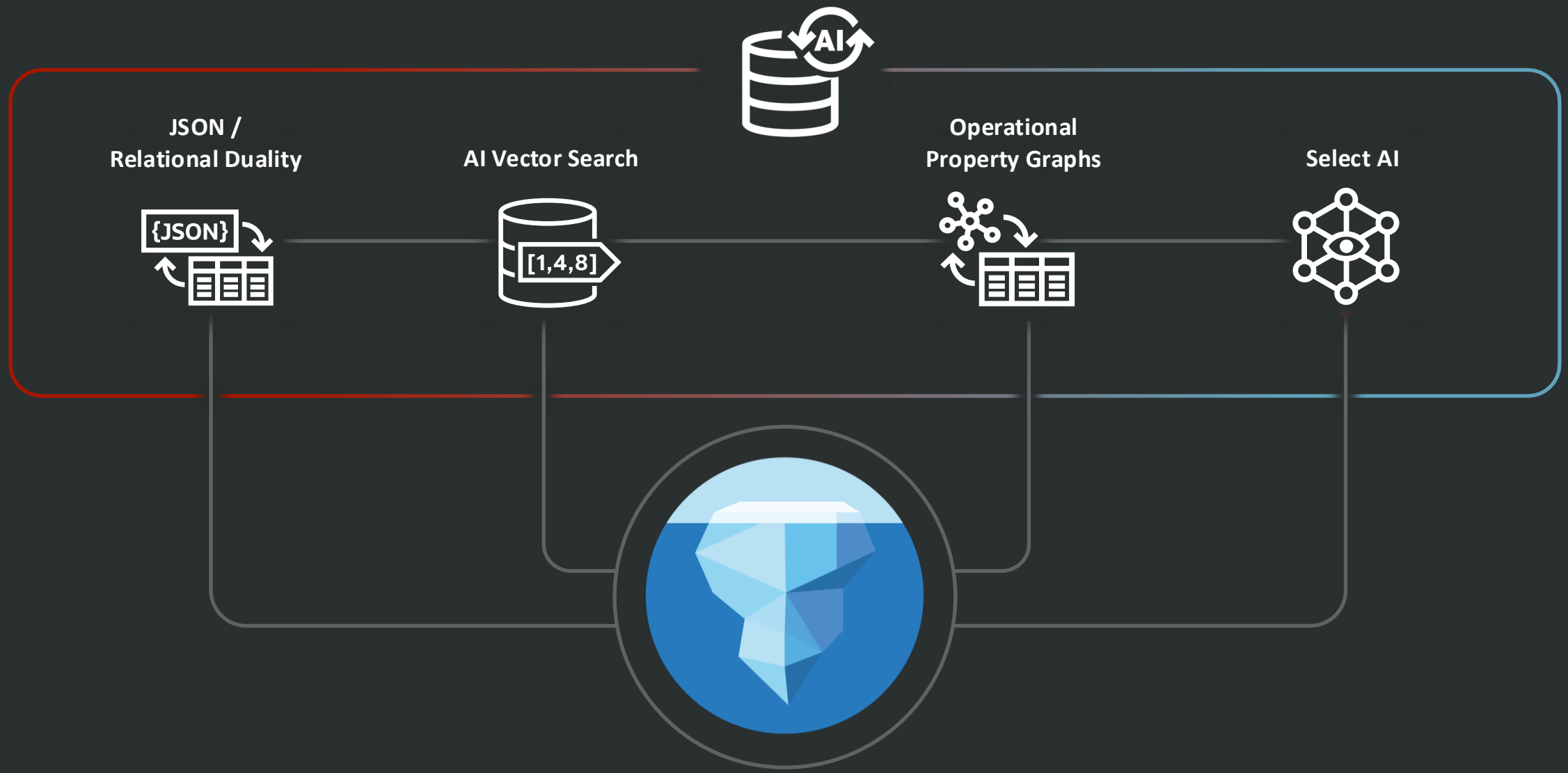
Transparent to Applications and Users

- No code changes required
- Full data consistency

Accessing your Iceberg data with Oracle

With all the analytics of Oracle's converged database

Power of Oracle AI Database on Iceberg Tables with zero data movement

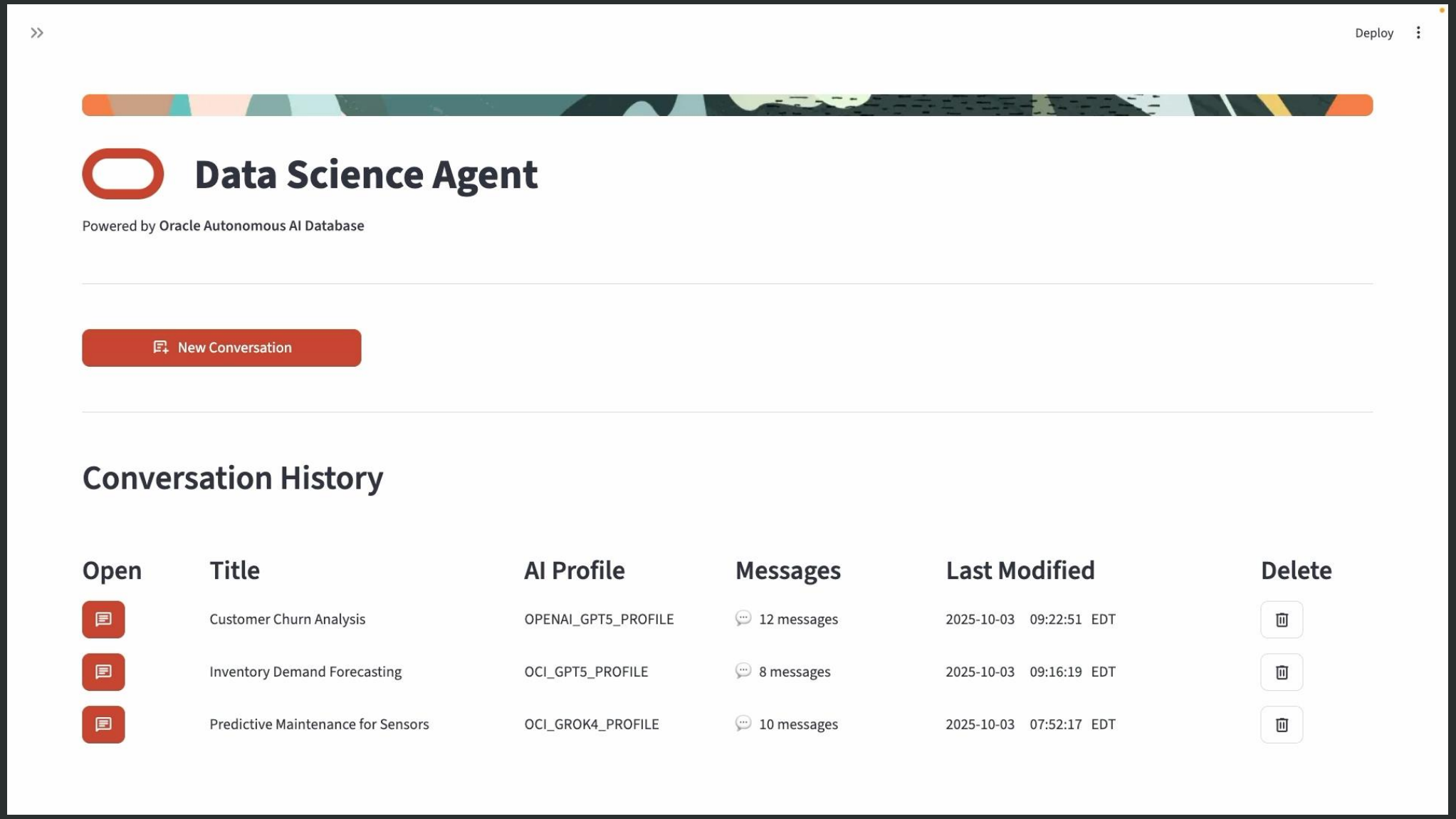


Accessing your Iceberg data with Oracle

Using all of the AI of Database 26ai and Autonomous AI Database

Oracle has built AI throughout its data platform

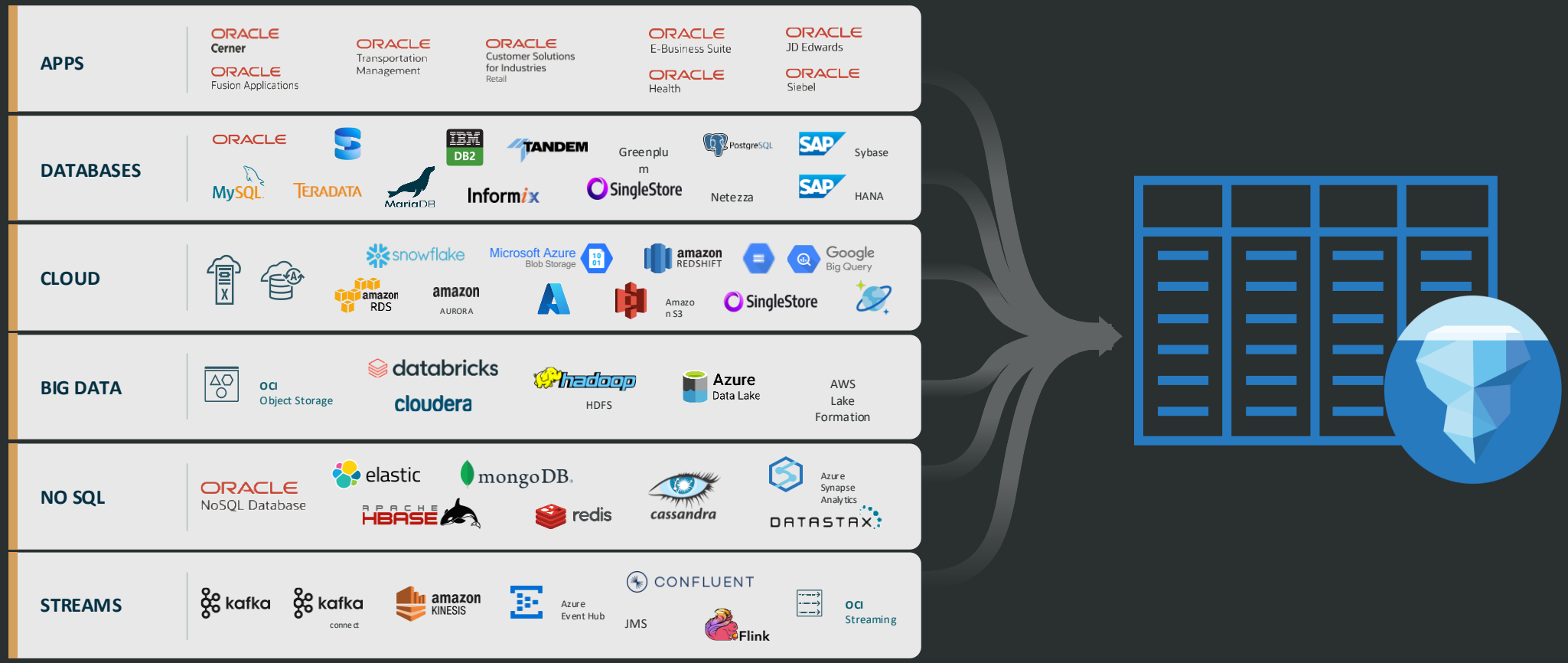
Higher productivity for data scientists and data analysts



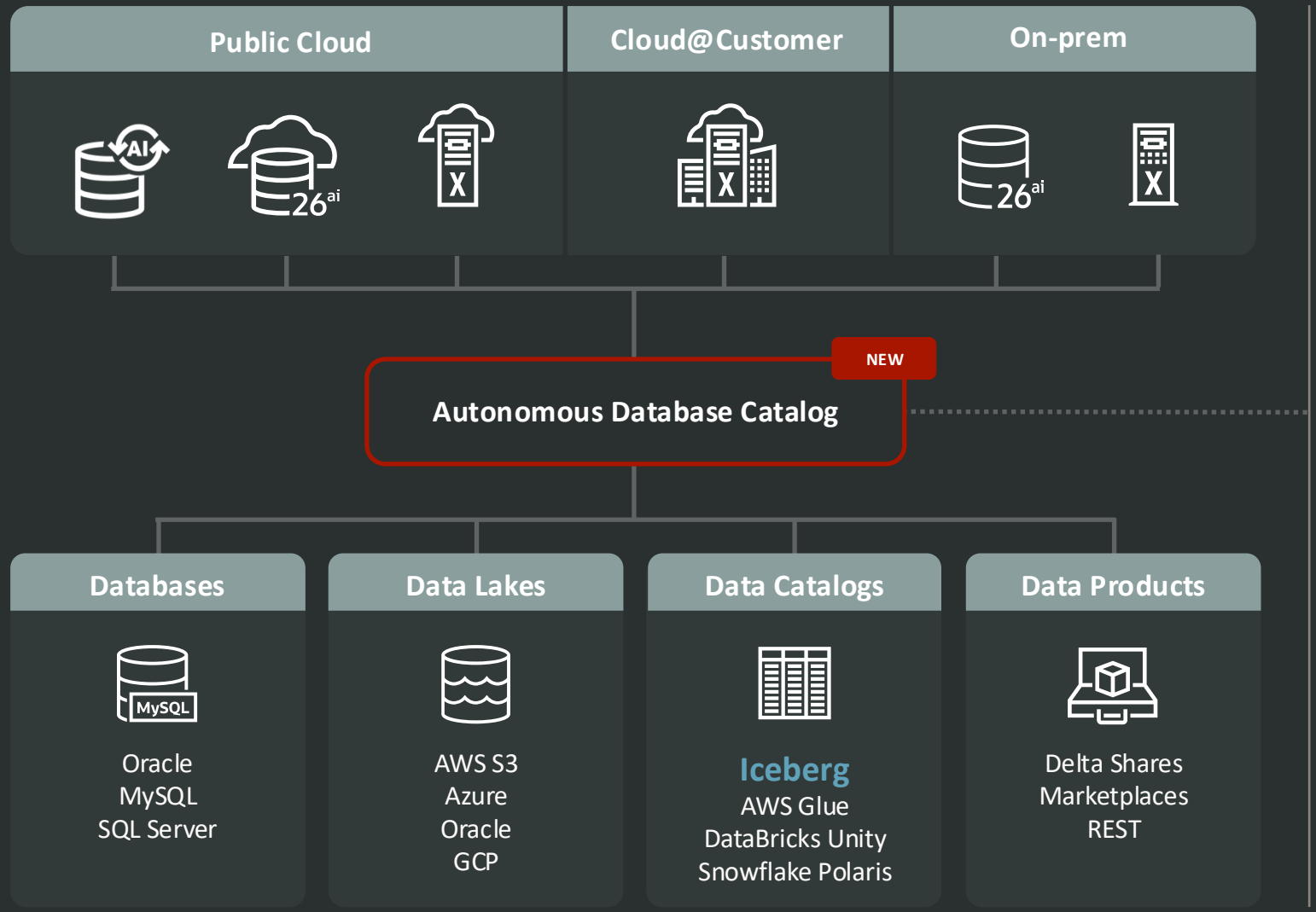
Integrate Iceberg

...with all your mission-critical data

GoldenGate and Oracle ETL provide real-time data pipelines from hundreds of data sources



Roadmap: Search, discover and access any data using any Oracle Database



Autonomous Database Catalog opens up Iceberg access to **every** Oracle Database

- Autonomous AI Database
- On-prem
- Cloud@Customer
- Public Cloud

Oracle Autonomous AI Lakehouse

Run AI and analytics securely on all your data without lock-in

Open and interoperable

- Open by design with Apache Iceberg
- Runs everywhere

Lakehouse without compromises

- The openness of Iceberg with the performance, reliability and trust of Oracle
- Extend existing warehouses to lakehouse architecture

AI-powered operations

- Operationalize AI insights directly in business operations
- Built-in AI, analytics, and security across **all** data

Oracle meets you where you are.
Complete and Comprehensive on OCI or multicloud

AI Data Platform

Gen AI | Autonomous AI Lakehouse | Open-Source | Analytics

- Unified Lakehouse on OCI combining open-source engines like Spark with **Autonomous AI Lakehouse**
- Modernize on-premise Oracle Data Warehouse(s) with **Autonomous AI Lakehouse** on OCI

Pick Your Journey

Autonomous AI Lakehouse

- Extend existing Data Systems (Databricks, Snowflake, MS Fabric, Salesforce, SharePoint, etc.) with **Autonomous AI Lakehouse** for AI & Analytics
- Modernize on-premise Oracle Data Warehouse(s) with **Autonomous AI Lakehouse** on any Cloud

Next steps…

Oracle Always Free

Deploy up to two instances of Autonomous AI Lakehouse on Oracle Cloud - for free.

Oracle LiveLabs

Learning for Everyone

Get hands-on with Oracle's Autonomous AI Lakehouse and built-in technologies.

Always Free. Always Available. Always For Everyone

Oracle Autonomous AI Database Leaning Lounge

Join our free bi-weekly Live Webinars where Oracle Product Managers share the many ways you can unlock your talents with complete tutorials on the most important topics.

Resources

- Read the technical announcement blog on Autonomous AI Lakehouse: https://blogs.oracle.com/datawarehousing/autonomous-ai-lakehouse-announcement
- To find out what's new in Data Catalog, read: https://blogs.oracle.com/datawarehousing/announcing-open-enterprise-data-access-with-the-oracle-autonomous-ai-database-catalog
- For more info, read a technical blog on Data Lake Accelerator: https://blogs.oracle.com/datawarehousing/introducing-data-lake-accelerator
- For more info, read a technical blog on External Table Cache: https://blogs.oracle.com/datawarehousing/introducing-external-table-cache
- Discover how to run graph analytics with Iceberg data using Oracle Graph: https://blogs.oracle.com/database/graph-analytics-for-all-of-your-data
- Read the technical blog on GoldenGate's Iceberg support: https://blogs.oracle.com/dataintegration/gg-for-daa-237
- For more information, watch Çetin Ozbutun's (Executive Vice President of Autonomous AI Database technologies) keynote presentation at Oracle AI World Las Vegas: https://youtu.be/cZ53kyimD_s
- For more information on Autonomous AI Lakehouse, visit product page: www.oracle.com/ai-lakehouse/
- For more information on AI Data Platform, visit product page: https://www.oracle.com/ai-data-platform/
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- Autonomous AI Database Learning Lounge: https://asktom.oracle.com/ords/r/tech/catalog/series-landing-page?p5_series_id=33263795695297238649848162030087480512 1
- Discover how Autonomous AI Database customers achieved benefits worth an annual average of $4.9 million per organization and a three-year ROI of 436%--Read IDC’s “The Business Value of Oracle Autonomous AI Database” white paper: https://www.oracle.com/a/ocom/docs/autonomous-tco-report.pdf
- Coming to a city near you! Discover the Future of AI at Oracle AI World Tour 2026: https://www.oracle.com/ai-world-tour/