Research Note

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ORACLE AI WORLD

Major Advances in AI for Enterprise Data

AT AI WORLD IN LAS VEGAS in October, Oracle came forward with a distinctive and comprehensive set of AI capabilities that position it as an industry leader in providing *secure, mission-critical, enterprise-class products, cloud services and solutions for AI*. While competition is fierce in AI, **Oracle has a particular focus on robust, practical enterprise-class capabilities that set it apart**:

> At the core of what Oracle provides is the management of enterprise data with its now renamed product: **Oracle AI Database**. Oracle products now manage *every* variety of enterprise data — *vector, tabular, documents, graph, streaming, IoT and other types* — in virtually *every* location; *every* workload; *every* format; *every* major cloud; *in cloud@customer (hybrid) environments*; and *on-premises deployments*.

Everywhere that Oracle manages data, it also **delivers remarkably advanced AI capabilities**: *similarity search, vector data, vector indexes, NL-to-SQL, Agentic AI, MCP Servers* … the list goes on. All of this is commercially available in the newly announced version, **Oracle AI Database 26ai**.

BUT, the AI database is not the whole story either. At AI World, there were also **major announcements — including new AI capabilities** — for *Autonomous AI Lakehouse, AI Data Platform, Oracle Cloud Infrastructure, Multi-Cloud, Oracle Exadata, AI-assisted low code development via APEX*, and more.

THE BOTTOM LINE. It's not easy to sum up the significance of all these new capabilities in a single statement, except to say this: **I don't see any other company pushing forward with major AI innovations for enterprise data with as comprehensive a strategy as Oracle.** And all this is delivered in cloud services that are *more secure, more attractively priced and better optimized for these purposes than any other.*

Taken together, the Oracle AI announcements empower customers to use AI on a large scale, in production, creating solutions that involve *intelligent agents, enterprise operational data, analytics and documents, natural language and much more*. Oracle customers can deploy these solutions *in the cloud, on prem, in multiple clouds or multiple locations* — resulting in **great deployment flexibility**. And, Oracle is providing the means for customers to make these solutions *secure, robust, scalable and cost-effective.* •

Methodology

PURPOSE AND METHODOLOGY FOR THIS REPORT

This *WinterCorp Research Note* covers Oracle's recent announcement of *Oracle AI Database 26ai*, the related AI strategies, and their implications for database customers. In developing this report, WinterCorp drew on its own independent research and experience, interviewed employees, attended Oracle events and analyzed Oracle documentation and literature. Oracle was provided an opportunity to comment on the paper with respect to facts. WinterCorp has final editorial control over the content of this publication and is solely responsible for any opinions expressed.

Oracle AI World

This year, for the first time, the annual Oracle conference in Las Vegas was renamed *"AI World"* to emphasize Oracle's focus on artificial intelligence. There are many companies talking the AI talk, but Oracle stands out for the way it is walking the walk.

Attendees witnessed an avalanche of announcements concerning:

- Oracle AI Database 26ai;
- Oracle Autonomous AI Lakehouse;
- Oracle AI Data Platform;
- Oracle Cloud Infrastructure (OCI);
- Oracle Multi-Cloud partnerships (AWS, Azure, Google);
- Oracle Exadata; and,
- APEX, a low code application development environment.

And all included major AI capabilities for the enterprise. Most of these capabilities are available to customers now; any that are not will be available soon.

Oracle AI Database 26ai

Oracle AI Database 26ai offers a comprehensive array of capabilities to incorporate GenAI into database apps. The features include:

- Vector datatype;
- Vector indexing;
- Similarity search;
- Built-in functions for vector embedding;
- SQL extensions, so the GenAI functions are available via existing interfaces and can be combined with all other database operations, with full generality;
- Enhancements to Exadata intelligent storage to accelerate vector search and index creation at the storage level, as well as Iceberg queries;
- Replication of vectors across data stores via GoldenGate to facilitate remote and distributed vector search.

These capabilities enable users and partners to create GenAI solutions using the full range of enterprise data stored in Oracle databases and external tables. The value of this to customers is extended significantly via the combined search capability described in the next paragraph.

Combined Search & Structured Query

Oracle's converged database strategy — a major theme they have been pursuing for at least ten years — has resulted in a capability to manage databases that contain a wide variety of data not typically supported in relational databases. In addition to the structured tabular data one would expect, Oracle AI Database supports JSON data, XML data, document data, graph data, geospatial data and the vector data type and indexes needed for GenAI similarity search. Oracle not only supports these data types — it provides built-in operations to retrieve, update and manipulate them in SQL. The Oracle query optimizer is capable of generating efficient query plans to combine — for example — vector searches over documents and structured queries over enterprise data.

Open Table Formats

Autonomous AI Database supports Open Table Formats, including Apache Iceberg, Delta Lake and Parquet. Data in these formats can thus be accessed directly both by Autonomous AI Database and by other query engines and analytical tools. Now organizations can run Oracle apps, AI, tools, and analytics on Iceberg data and run Iceberg apps, AI, tools, and analytics on Oracle data. They can also run real-time and mixed workloads on Iceberg data and choose the best query engine on a query-by-query basis, as well as select data storage on a case-by-case basis and easily shift back and forth.

Oracle Autonomous AI Lakehouse

Oracle announced Autonomous AI Lakehouse, which combines Autonomous AI Database with native Apache Iceberg support and an Autonomous AI Database Catalog. The new Oracle catalog is a catalog of catalogs, integrating metadata from catalogs such as Databricks Unity, AWS Glue and Snowflake Horizon. Autonomous AI Lakehouse supports Oracle's AI capabilities on open data in such formats as Iceberg tables, including Select AI (NL-to-SQL), Oracle Agentic AI framework and Oracle AI Vector Search.

Oracle AI Data Platform

Oracle also announced a new AI Data Platform designed to unify enterprise data, generative AI models and agentic automation. AI Data Platform combines OCI, Oracle Autonomous AI Database, and OCI Generative AI service, bringing together all the elements needed to develop, manage and support Agentic AI solutions, including Agent Hub and Model Context Protocol (MCP).

OCI & NVIDIA Hardware

Oracle made several major announcements concerning its deepening partnership with NVIDIA, focused on accelerating AI infrastructure and services across OCI, including:

- The OCI Zettascale110 Supercluster Powered by NVIDIA GPUs – the largest AI supercomputer available in the cloud
- Native integration of NVIDIA AI Enterprise on OCI
- AI Factories and Sovereign AI Initiatives, including the flagship Stargate supercluster in Abilene TX with OpenAI, NVIDIA and OCI
- Enhanced networking with NVIDIA Spectrum-X.

Cloud Partnering – Multi-Cloud

In the last year we have seen Oracle deploy Oracle AI Database running on Exadata and OCI in AWS, Azure, and Google Cloud data centers. The result of this is that Oracle AI Database cloud services are now available to customers of all hyperscaler clouds as a fully integrated component of their environment. Not only can customers of AWS, Google and Microsoft seamlessly combine Oracle AI Database cloud services with their preferred applications and AI services, they can apply Multicloud Universal Credits to these services that they purchased from their cloud vendor.

Exadata

Oracle introduced updates to Exadata 11M and Exascale architecture, designed to support the next generation of AI and mission-critical workloads, including:

- AI Smart Scan, which accelerates vector search and analytics within the storage layer;
- Exadata Table Cache which caches frequently accessed Iceberg data in Exadata flash storage for faster query performance
- RDMA Memory Caching and PCIe Gen5 Flash Storage which boosts performance for OLTP, analytics, JSON, graph and spatial workloads; and,
- Enhancements to RoCE (RDMA over Converged Ethernet) which enhances low latency communication between compute and storage nodes
- Integration with Oracle Acceleron Networking to enhance security, per-formance and fault tolerance.

APEX

APEX is Oracle's widely popular low code application development platform. It is in use worldwide across a diverse range of industries by hundreds of thousands of users, including citizen developers as well as software development professionals to manage core business operations. APEX offers robust security features and other capabilities that make it suitable for the development of AI-powered enterprise-scale applications.

At the conference, Oracle announced the enhancement of APEX with AI capabilities, enabling developers to build smarter, easier to maintain solutions. Key features include AI Application Generator, with a natural language interface, visual workflow automation, and enhancements to make it easier for developers to extend and customize existing SaaS applications. APEX users like NRI and Marriott International shared their

About WinterCorp

WinterCorp is an independent consulting firm expert in the strategy, architecture and scalability of the modern analytic data ecosystem.

Since our founding in 1992, we have architected and engineered solutions to some of the toughest and most demanding analytic data challenges, worldwide.

We help customers define their AI and data-related business interests and vision; develop their AI for data strategies and architectures; select their data platforms; and engineer their solutions to optimize business value and obtain otherwise infeasible business outcomes.

Our customers get business results with analytics and AI in which their return is often ten or more times their investment.

When needed, we create and conduct simulations, benchmarks, proofs-of-concept, pilot programs and system engineering studies that help our clients manage profound technical risks, control costs and reach business goals.

With our in-depth knowledge and experience, we deliver unmatched insight into the issues that impede scalability and into the technologies and practices that enable business success.

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experiences using APEX to build complex, AI-driven applications to boost the productivity of their global teams. APEX comes free with Oracle AI Database.

A Comprehensive AI Strategy

Oracle's AI strategy is one of the most comprehensive in the industry. It encompasses all layers of the stack from infrastructure to data management and data usage; business applications; intelligent agents; and application development via code generation. Further, it employs innovation at the hardware, system software, database and application software levels. Critically, Oracle's strategy addresses the issues of scale and economic efficiency, which will have central importance to customers as they implement AI across their enterprises. Finally, Oracle has for years made security a top priority in its cloud and on-prem infrastructure. This is going to become even more important to customers as their implementations of AI bring ever larger numbers of humans and agents into contact with their enterprise data.

Recommendation

WINTERCORP RECOMMENDS customers take a close look at Oracle AI Database 26ai, Oracle Autonomous AI Lakehouse, AI Data Platform and the several other AI capabilities announced at Oracle AI World. The combination of AI capabilities is formidable and distinctive. It promises to enable customers to develop and implement *enterprise-class business solutions with AI, data and documents*. No other company has announced such comprehensive enterprise-class capabilities. No other company offers comparable cloud services delivering such *high levels of security, business continuity or mission-critical manageability*. Long a leader in enterprise data management, Oracle is now a leader in the application of AI to enterprise data.

AS WITH ANY MAJOR TECHNICAL CAPABILITY, WinterCorp recommends that customers *do a thorough evaluation and test any capabilities on which they expect to rely* for critical business outcomes.

We are entering an age of AI which promises to enable extraordinary new solutions to business problems. WinterCorp believes that Oracle's newly announced capabilities for AI and data are going to empower many enterprises to realize that promise. •