

WHITE PAPER

Oracle APEX 26.1

A Major Leap Toward AI-Driven Enterprise Application Development

How a new specification language, declarative AI agents, and governed self-service analytics are reshaping low-code development.



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Technical Overview & Strategic Briefing

Oracle APEX 26.1 introduces a coordinated set of AI capabilities, including a new machine-readable application specification, declarative AI agents, natural-language reporting, and governed self-service analytics, that together move the platform toward intelligent, AI-assisted enterprise application development. This paper summarizes what is new, why it matters, and how each capability is designed with enterprise governance in mind.

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EXECUTIVE SUMMARY

A Coordinated Step Toward Intelligent Applications

Oracle APEX has long been one of the most capable low-code platforms for building enterprise applications directly on Oracle Database. Oracle APEX 26.1 is not a single feature release. It is a coordinated set of investments that bring artificial intelligence into the application development and user experience lifecycle, while preserving the governance, predictability, and database-centric architecture that Oracle APEX teams already rely on.

Four capabilities anchor this release: APEXlang, a new human- and machine-readable application specification format; declarative AI Agents that perform approved business actions; AI-powered Interactive Reports that respond to natural language; and Data Reporter, a governed self-service analytics layer built directly into APEX applications.

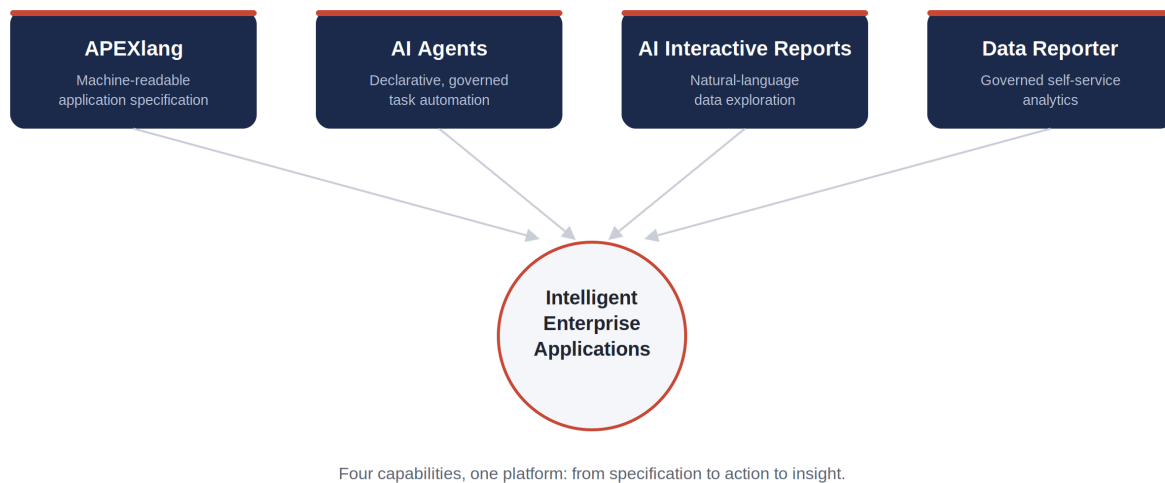


Figure 1. APEXlang, AI Agents, AI Interactive Reports, and Data Reporter share a common design principle: AI assistance inside developer-defined boundaries.

Key Benefits at a Glance

Capability	What It Does	Primary Benefit
APEXlang	Represents applications as structured, human- and machine-readable specifications.	Easier review, version control, and AI-assisted modernization.
AI Agents	Performs approved business actions via declarative, PL/SQL-connected automation.	Intelligent automation without new frameworks or loss of governance.
AI Interactive Reports	Translates natural-language requests into standard report operations.	Faster data exploration with no AI-generated SQL or data exposure.
Data Reporter	Lets business users build governed, self-service reports inside APEX.	Less reliance on IT and separate BI platforms.

SECTION 1

A New Era with APEXlang

Oracle APEX applications are traditionally stored as metadata inside the Oracle Database. That approach is flexible and scalable, but understanding the complete structure of an application often means navigating through many pages, components, and configuration screens inside App Builder.

APEXlang introduces a structured, human-readable application specification format that represents components, business logic, user-interface elements, and application behavior in a way that is easier for both people and AI systems to understand.

Why It Matters

- Makes application definitions easier to understand, review, and maintain.
- Improves collaboration between developers, architects, business analysts, and AI tools.
- Enables better version control, change tracking, and DevOps practices.
- Simplifies application documentation and knowledge transfer.
- Creates a foundation for AI-assisted application generation, enhancement, and maintenance.

"APEXlang is not just a new application definition format. It creates a machine-readable representation of business applications that AI models can consume, opening the door to AI-assisted analysis, documentation, refactoring, and legacy modernization."

For organizations investing in digital transformation, DevOps, and AI-driven development practices, APEXlang could become a foundational technology, one that bridges traditional application development with the next generation of intelligent software engineering.

SECTION 2

AI Agents: From Conversations to Actions

Generative AI has rapidly become a standard feature across modern software platforms, but many AI solutions require developers to learn entirely new frameworks and languages. Oracle APEX 26.1 takes a different approach: Declarative AI Agents that are built and managed using familiar Oracle APEX concepts and PL/SQL skills.

These agents understand user requests and perform approved business actions using predefined tools and processes, such as:

- Retrieving business data.
- Executing PL/SQL procedures and server-side processes.
- Triggering workflow activities.
- Updating business transactions.
- Performing application-specific actions based on user requests.

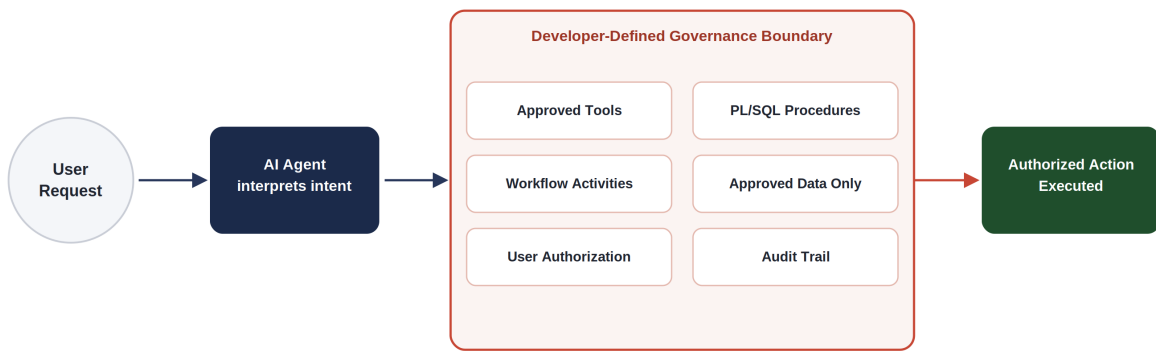
Declarative AI for Existing Oracle Teams

Oracle developers do not need to become AI framework specialists to build intelligent applications. Instead of writing agent-orchestration code in an external language, developers configure AI Agents declaratively within Oracle APEX and connect them to existing PL/SQL logic, business rules, APIs, and workflows. This significantly lowers the barrier to AI adoption for teams already invested in Oracle Database and Oracle APEX.

Governance and Control by Design

Unlike open-ended AI assistants that can take unpredictable actions, Oracle APEX AI Agents operate within boundaries the application developer explicitly defines. Developers determine:

- Which tools an agent can access.
- Which business processes can be executed.
- Which data can be retrieved.
- Which actions require user authorization.



The agent can only act within tools, data, and processes the developer has explicitly approved.

Figure 2. Every agent action passes through a developer-defined governance boundary before execution.

By combining declarative development, PL/SQL integration, and enterprise-grade governance, Oracle APEX enables organizations to introduce intelligent automation without abandoning existing Oracle investments or hiring specialized AI engineering talent.

SECTION 3

AI Interactive Reports: Natural Language Meets Trusted Analytics

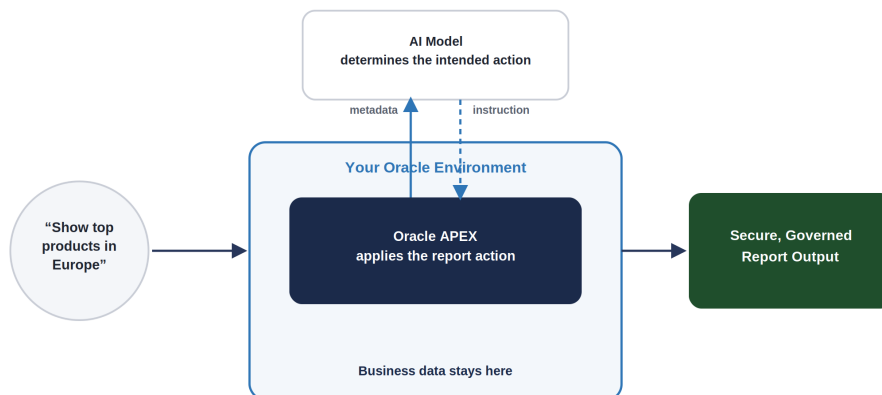
Interactive Reports have long been one of Oracle APEX's most popular features, letting users analyze and manipulate data without technical expertise. In Oracle APEX 26.1, Interactive Reports become more intuitive through AI-powered natural-language interaction. Users can describe what they want instead of manually applying filters, sorting, grouping, or aggregations. For example:

- "Show customers from Europe."
- "Highlight top-performing products."
- "Group sales by industry."
- "Display orders placed in the last 30 days."

Behind the scenes, Oracle APEX interprets the request and translates it into standard Interactive Report operations rather than generating and executing AI-created SQL. This preserves the familiar Interactive Report framework while making data exploration significantly easier for business users.

Security and Governance by Design

Instead of sending business data to the AI model, Oracle APEX primarily shares report metadata, column definitions, and Interactive Report configuration context. The AI helps determine the desired report action; APEX remains responsible for applying that action.



Familiar, predictable Interactive Report behavior, with no AI-generated SQL and no exposed business data.

Figure 3. Only column names and report configuration cross the boundary. Business data is never exposed to the AI model.

- Sensitive business data remains within the organization's environment.
- Reduced risk of exposing confidential information to external AI services.
- Improved compliance with corporate governance and regulatory requirements.
- Elimination of unpredictable AI-generated SQL queries.
- Full developer control over available reports, columns, and user interactions.

SECTION 4

Empowering Business Users with Data Reporter

Organizations have long sought to empower business users with self-service reporting while maintaining governance over enterprise data. Traditionally, that balance required separate reporting platforms, additional infrastructure, data movement, and licensing costs.

Oracle APEX 26.1 introduces Data Reporter, which allows business users to create and explore reports directly within Oracle APEX applications using trusted, governed datasets. This reduces architectural complexity and the challenges of moving data between transactional systems, data warehouses, and reporting environments.

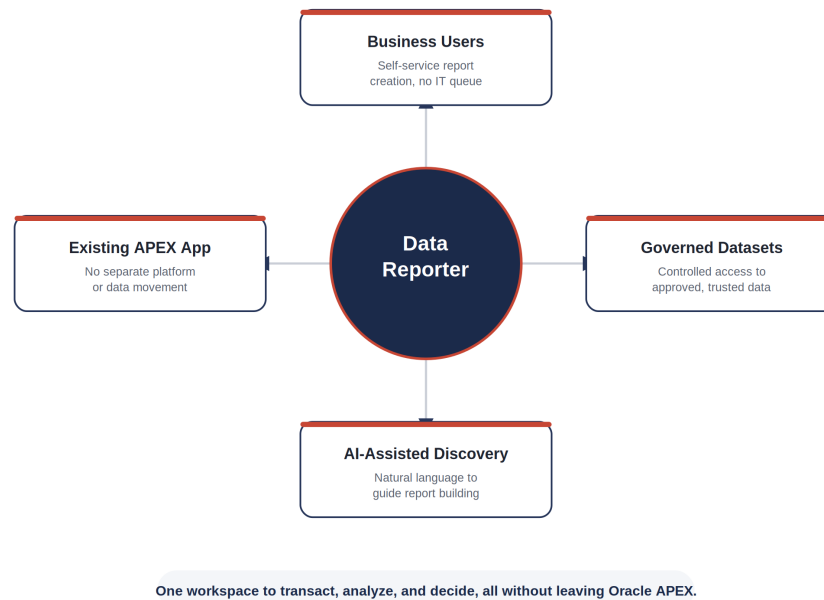


Figure 4. Data Reporter brings self-service analytics directly into the application, close to the operational data it reports on.

Key Benefits

- Faster report creation by business users.
- Reduced dependency on development and IT teams.
- Controlled access to approved and governed datasets.
- Easier report sharing and collaboration across departments.
- Lower reliance on separate reporting platforms for operational reporting.
- Reduced data movement and synchronization requirements.
- Near real-time access to business information with minimal latency.

AI-Assisted Reporting Experience

Data Reporter incorporates AI-assisted capabilities that help users discover, build, and refine reports using natural language and guided interactions, letting business users focus on asking questions and analyzing information rather than learning report-building techniques or database structures.

For many organizations, Data Reporter has the potential to transform Oracle APEX from an application development platform into a unified operational and analytical workspace, where users can transact, analyze, and make decisions without leaving the application.

CONCLUSION

Looking Ahead

Across all four capabilities in this release, a consistent design philosophy emerges: bring AI directly to where Oracle APEX developers and business users already work, without forcing them to adopt new frameworks, expose sensitive data, or give up control over how AI behaves.

APEXlang gives applications a specification that both people and AI systems can read. AI Agents and AI Interactive Reports bring conversational interaction to automation and analytics, inside boundaries developers define. Data Reporter extends governed, self-service analytics to business users without new infrastructure. Together, these capabilities position Oracle APEX 26.1 as a meaningful step toward the next generation of intelligent, low-code enterprise applications.

About this Briefing

This white paper provides an independent technical overview of capabilities described in Oracle's Oracle APEX 26.1 release materials. It is intended for technical and business decision-makers evaluating the platform.

About the Author

D. Balamurugan leads the Digital Practice at Doyensys, helping enterprises modernize, extend, and innovate their Oracle ecosystems through cloud, AI, low-code, and enterprise application technologies. With over 20 years of experience in Oracle technologies, enterprise architecture, and digital transformation, he has successfully delivered and led complex Oracle initiatives across industries, enabling organizations to accelerate innovation while maintaining governance, scalability, and business agility.

A recognized Oracle technology leader, Bala specializes in Oracle APEX, Oracle Database, Oracle Cloud, integrations, and modern application development. He is an active contributor to the Oracle community and has presented technical sessions on Oracle APEX at the All India Oracle Users Group (AIOUG), sharing practical insights and best practices with developers and enterprise technology leaders.

Connect with the Author

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