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APEX 26.2 Interactive Report Revolution: New Features and AI Integration

code of change

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Who am I?



- Senior APEX developer at HyPlus since 2022
- Previously worked as an intern APEX developer
- Oracle APEX since 2017
- Blog author
- Born in 1989

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Oracle ACE Associate



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Internationally connected delivery power.

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Germany

- Brunswick
- Ratingen
- Hamburg
- Frankfurt

Poland

- Wrocław

Lithuania

- Vilnius
- Kaunas

Romania

- Cluj-Napoca

India

- Pune

25+
Customers with > 1 billion € revenue

90+
Million Euros revenue

9
Locations in 5 countries

750+
Employees

24
Nationalities

Agenda

Agenda

01 **Modernization Drivers**
Why Interactive Report needed modernization

02 **Release Highlights**
What's new in APEX 26.2

03 **Intelligent Analytics**
AI-powered interactive reports

04 **Practical Walkthrough**
Live demonstration

05 **Architecture Guidelines**
Best practice and recommendation

06 **Interactive Session**
Q&A

Why interactive report needed modernization

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Why IR needed modernization

1

Replacing Developer Workarounds

Eliminates fragile custom JS, DOM hacking, and manual row handling with native declarative features.

2

Modern API & Extensibility Demand

Applications require clean, supported APIs for programmatic interaction and dynamic extensions.

3

AI & Evolving Data Interaction

AI integration changes how users filter, analyse, and interact with report datasets seamlessly.

4

Overuse of Interactive Grid

Developers were forced to use complex Interactive Grids solely for multi-row selection in read-only reports.

5

Shift in User Expectations

Modern web applications demand fast, responsive bulk operations, intuitive search chips, and effortless data selection out of the box.

Interactive Grid VS Interactive Report

Feature	Interactive Report (IR)	Interactive Grid (IG)
Primary Purpose	Data analysis, filtering, and reporting	Data analysis **plus** data editing
Data Editing	Read-only	Supports inline create, update, and delete
User Customization	Filters, highlights, control breaks, charts, aggregations	All IR capabilities plus editable data management
Spreadsheet-Like Experience	No	Yes
Saved Report	Yes	Yes
JS API	No	Yes
Row Selection	Not Supported	Supported
Performance	Faster for reporting-only use cases	Slightly more overhead due to editing features

What's new in APEX 26

Declarative Row Selection
Native checkbox selection configurable in Page Designer without code.

Column-Level CSS Classes
Target specific report columns with custom layout and utility styling.

Row Display Limit
Set explicit display row thresholds directly for performance tuning.

Trigger Action for IR Dialogs
Invoke interactive report dialogs programmatically via Dynamic Actions.

Interface Improvements
Enhanced filter chips, refined search options, and streamlined UX.

CLOB Output
No 32K limit applies to output anymore.

Introducing New JS API
Official supported JavaScript API replacing legacy DOM hacking and jQuery scripts for report interaction.

Integrated AI Assistant
Embedded conversational assistant for faster query and report building.

Key Phrases Support
supported NL command that performs an action on an IR without needing to invoke AI processing

New JavaScript API for Interactive report

Introducing InteractiveReportRegion Interface.

Methods: getSelectedValues(), selectAll(), setSelectedValues(), and more.

Challenges Before

- **DOM Hacking:** Manipulating underlying report HTML manually
- **jQuery Selectors:** Brittle selectors tied to specific render classes
- **Fragile Custom Code:** Prone to break with custom workarounds
- **Upgrade Risks:** APEX updates frequently broke un-supported JS

Benefits Now

- **Supported API:** Officially documented and maintained framework
- **Programmatic Interaction:** Direct controls for report data & state
- **Easier Selection Handling:** Seamless multi-row checkbox management
- **Cleaner Code & Maintainability:** Standardized development standards

Demo

Row Selection

Built-in Row Selection

Native row selection capabilities directly integrated into Interactive Reports.

Easier Multi-Row Operations

Streamlines bulk operations such as batch updates, mass approvals, and custom exports.

Easy Setup (No Custom Code)

Configure declarative properties in Page Designer without writing custom JavaScript or CSS.

Built-in Options & Controls

Includes declarative options for Multi-Select, Select All header checkbox, and Hide Control behaviours.

Selected IDs dynamically retrieved into a page item

Selected record keys are automatically synchronized with designated page items for downstream logic.

Demo

Column Level CSS Class

Applied at <td> Level
Target Cells directly in a column, no workaround required

Support for Substitution Syntax
Inject Page Items, Column Values (#RATING_CSS#), etc.

Declarative Setup
No need for custom JS, complex jQuery selectors, or manual DOM manipulation to format table cells.

Enhanced Visual Hierarchy
Instantly highlight critical thresholds like ratings, status indicators, inventory alerts, or key metrics.

Dynamic Cell Styling
Apply custom CSS classes conditionally based on report data directly within Page Designer properties.

Column-Level CSS

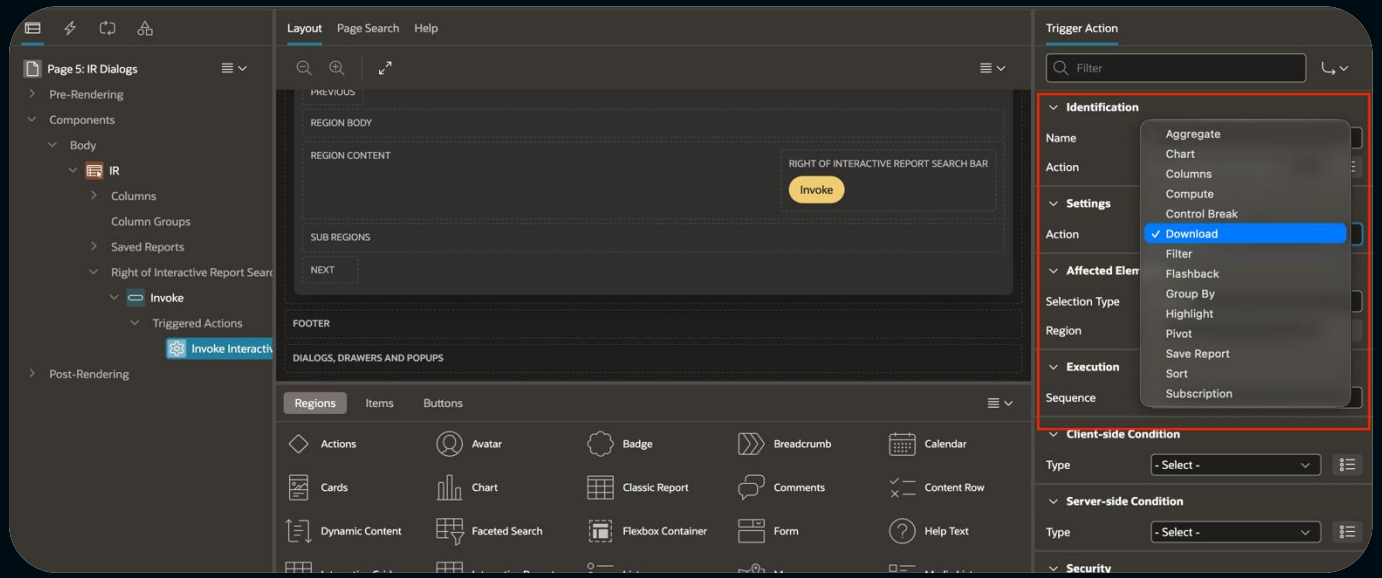
Column-Level Rendering

Unit Price	Rating	Out Of Stock
9.8	2	1
23.32	2	1
7.18	0	1
49.12	4.5	1
29.51	4.5	1
22.98	4.5	1
48.75	3	1
39.91	3	1

Demo

Trigger Actions for IR Dialogs

IR Dialogs



Direct Dialog Triggering

Bypass standard Actions menu dropdowns — open IR dialogs directly from custom page buttons, icons, or controls.

100% Declarative

No custom JavaScript or fragile DOM selectors required. Fully configured within Page Designer.

Practical Applications

- Custom toolbar button for "Select Columns"
- Standalone 1-click Download icon
- Guided workflow shortcuts into Filters dialog

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Key Phrases Support in IR & Interface Improvements

FAST PATH Execute instant report commands using simple patterns with **NO need to invoke AI** or consume LLM tokens.

Filtering & Search
filter %column by %value
search %column for %value

Sorting Controls
sort %column direction
Supports: asc, desc, ascending...

Column Visibility
show %column
hide %column

Layout & Reset
break on %column
pivot %row by %col
reset

Numeric Range & Date filter
New filtering experience
exact dates, and start-and-end ranges.

Multi-Select header filters
Column-header filters now support multiple selected values.

Interactive Report - Key Phrase

search product name for "Socks"

All | Product Name | Unit Price | Order Datetime | Rating | Out Of Stock

Women's Socks (Grey)	$20.00
Women's Socks (Grey)	$20.00
Women's Socks (Grey)	$20.00
Women's Socks (Grey)	$20.00
Women's Socks (Grey)	$20.00
Women's Socks (Grey)	$20.00
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Introducing AI Interactive Report - Talk to Your Data

Plain Language Querying

No Menus, No Dialogs

Ask questions in natural language and let APEX automatically configure filters, sorting, pivots, aggregates, and column selections.

Visible & Reviewable Chips

Complete Transparency & Control

Every configuration applied by AI surfaces as a visible chip, allowing users to review at a glance and adjust settings immediately.

Instant Results

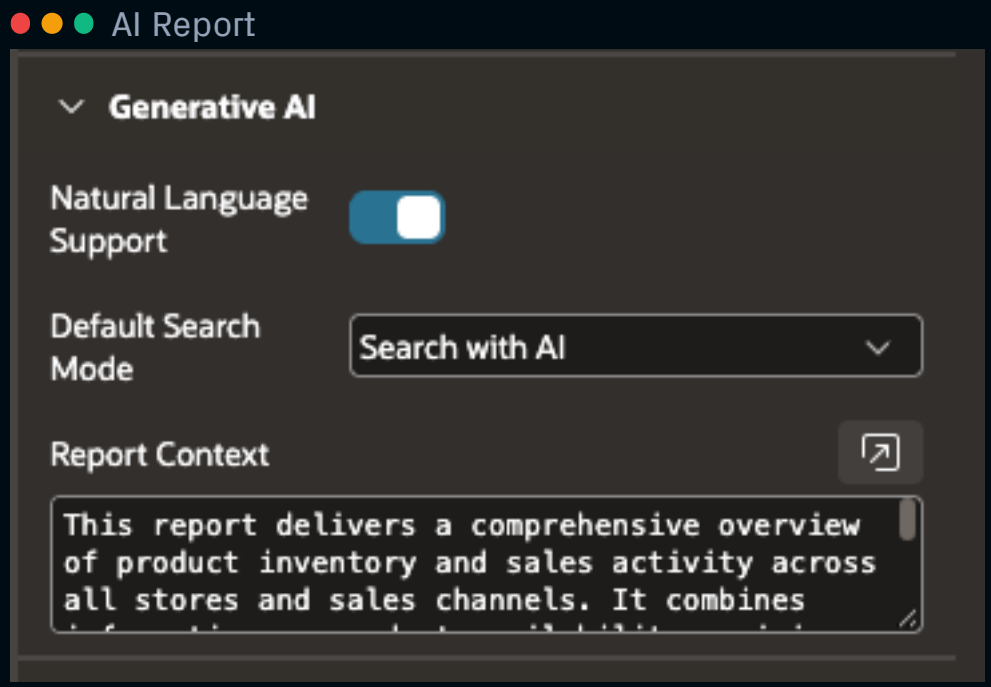
Frictionless Data Exploration

Removes the need to navigate multi-level menus or complex dialogs—delivering instant report views in response to questions.

Automatic Intent Mapping

Declarative Alignment

Translates end-user business intent directly into native Interactive Report settings without touching or generating raw SQL code.



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AI Interactive Report - Key Benefits by Persona

Business Users

Self-Service Analytics

Empowers non-technical users to build, filter, and export personalized report views without developer intervention.

Power Users

Faster Data Exploration

Unlocks rapid ad-hoc calculations, visual aggregations, and deep drill-down analysis in seconds.

Developers

Fewer Custom Report Screens

Drastically cuts maintenance backlog by replacing dozens of specialized custom report requests with one declarative IR layout.

Organizations

Increased Accessibility of Data

Drives enterprise-wide data democratization, fostering informed decision-making across all operational tiers.

Guardrails & Governance - Scope of Supported Actions

Governance Model

Inherited Developer Controls

Report Level: If *Filter* is disabled, AI prompts cannot apply filters.

Column Level: If *Highlighting* is disabled for a column, AI cannot highlight it.

Declarative Tool Actions

Scope of Supported Actions

APEX translates prompts into 12 declarative server-side tools. Everyday end-user interactions map directly to standard IR capabilities without writing SQL.

12 Supported Declarative Actions

- Chart (Bar, Pie, Donut, Line)
- Rows per Page
- Group By
- Sort
- Filter
- Reset & Save Report
- Displayed Columns
- Control Break
- Highlight
- Aggregate
- Pivot

Setup Architecture - Workspace & Shared Components

1. Workspace AI Service

Provider Endpoint Config

Define OCI Generative AI, OpenAI, or Custom LLM endpoints in Workspace Admin.

2. Shared Components

Application Binding

Assign the active AI Service under Shared Components > AI Attributes.

3. Opt-in Guardrails

Disabled by Default

Feature is disabled by default across all existing and newly created Interactive Reports.

4. Capability Inheritance

Declarative Enforcement

If an action (e.g., pivot or filter) is disabled in IR attributes, AI cannot trigger it.

Context Engineering - Report vs. Column Hints

Report Context

Global Business Domain

A short, human-readable description of what a report contains or its purpose (e.g., "This report delivers a comprehensive overview of product inventory and sales activity across all stores and sales channels"). This helps the AI better understand the meaning, context, and usage of user prompts.

Column Context

Synonyms & Field Rules

A short, human-readable description of a column's meaning, purpose, or special values. This helps the AI better understand the column's meaning, context, and usage when interpreting natural language prompts. (e.g., Order status; values include Completed, Cancelled)

Reference Data Types

LOV & Value Lists

Feeds valid values (LOVs/Queries) to the prompt so the LLM never hallucinates filter criteria.

APEX 26.2 Computed Columns

Natural Language Expressions

Translates requests like ‘Total’ into derived calculation (Quantity * Unit Price).

Security Considerations - Data Privacy & Prompt Hygiene

Contextual Metadata Sent

Report & Column Structure

APEX sends only the contextual information required to interpret the prompt—including report metadata, report context, column context, and reference LOVs.

Business Data Never Leaves

Report Data Stays In-Environment

Interactive Report SQL & data itself is never included in the prompt. The model interprets intent to generate a report configuration rather than analysing report rows.

User Prompt Hygiene

Processing Boundary

Any text typed into the prompt is processed by the AI service. Users should refrain from entering sensitive values directly unless permitted by organizational security policies.

Reference Data Audit

Developer Hygiene

Developers must audit configured reference data (LOVs/Static Values), as list values are included in metadata sent to the LLM to prevent hallucinated filters.

NL2IR Workflow - Prompt to IR Configuration

STEP 1: USER PROMPT

User Writes Prompt

End user submits a natural language request via **Search with AI** or **Chat Assistant**.

"show products have ranking 5"

STEP 2: APEX COMPILE

Metadata & Context Assembly

APEX packages the prompt with **Report & Column Context**, metadata schemas, reference LOVs, and current state.

- Prompt + System Prompt (~41k chars)
- 12 Tool Schemas (~32k chars)
- IR & Column Context, Reference Values

STEP 3: LLM REASONING

LLM Action Synthesis

LLM maps user intent against metadata context & reference values to select declarative tool configurations.

reset_ir_tool = True
filter_tool: Ranking = 5

STEP 4: IR EXECUTION

Declarative IR Chips Applied

APEX applies tool output to the report as visible **IR Chips** (filters, sorts, aggregations).

✓ Ranking = 5 applied
✓ UI updated instantly
✓ No DB rows left DB

Demo

AI Interactive Reports: Key Takeaways & Practices

1. Concise Context

Keep report and column descriptions concise. Well-defined business context helps the AI understand your data and generate more accurate responses.

2. Normalize Values

If using Reference Data, clean and normalize it by trimming whitespace and removing null, blank, and duplicate values.

3. Review Data Egress

SQL queries and report data remain local. Only report context, column descriptions, and reference data are sent to the LLM for analysis, so avoid including sensitive or confidential information in these configurations

4. Key Phrases

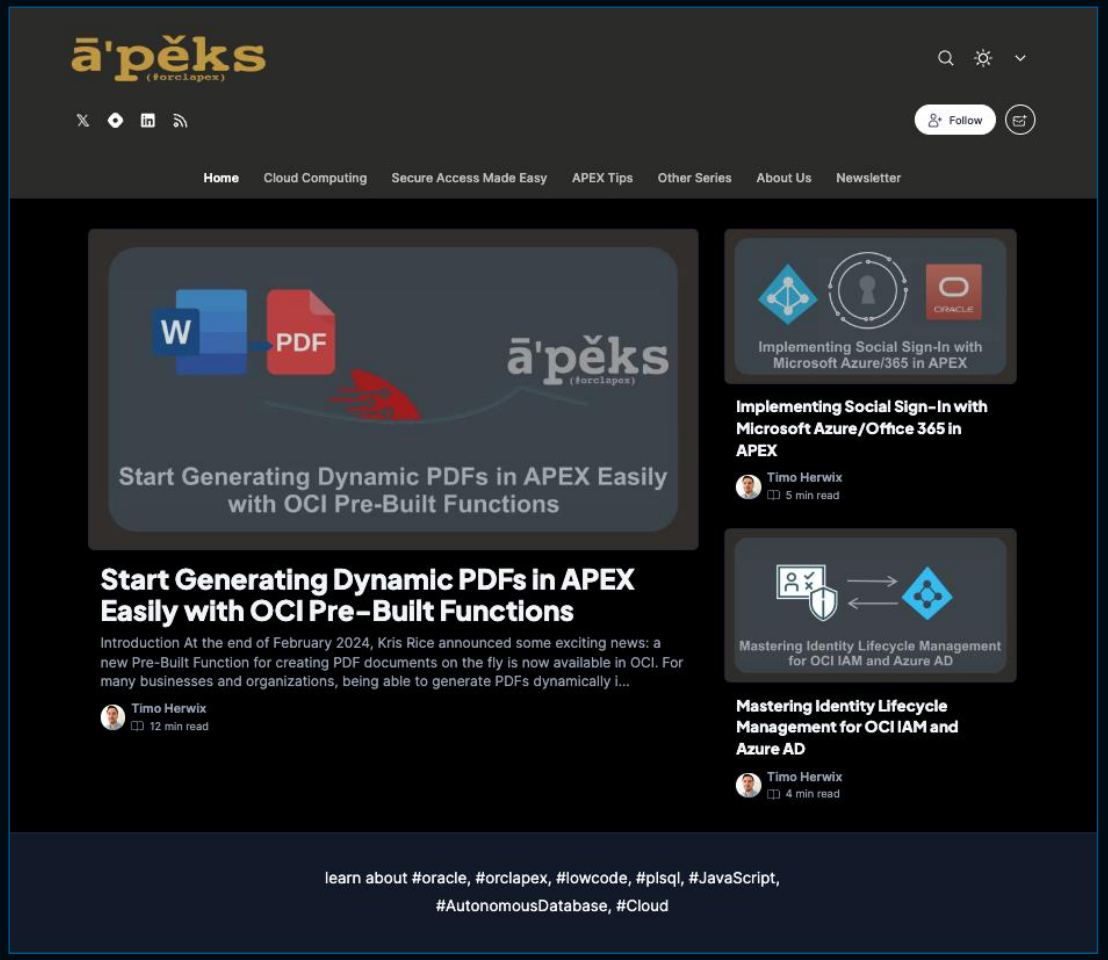
Train users to use Key Phrases commands for instant report actions without LLM processing, eliminating token costs and response delays.

Thank You For Your Attention!

Blog

Scan me!

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Are you interested?



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