

02.10.2026, SOUG Day Autumn, Zürich

Migration nach APEX 26.1

Oliver Lemm

code of change





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APEXconnect

DOAG
Konferenz + Ausstellung

ODTUG
Kscope

AOUUG
AUSTRIAN ORACLE USER GROUP

ā'pěks world
(forclapex)

SOUG

swiss oracle
user group

Our key facts



Germany

- Braunschweig
- Ratingen
- Hamburg
- Dortmund
- Frankfurt
- München
- Berlin

Poland

- Breslau

Lithuania

- Vilnius
- Kaunas

Romania

- Cluj-Napoca

India

- Pune

25+

Customers
with > 1 billion
€ revenue

110+

million €
turnover
(2024)

750+

Employees

40

APEX devs

6

Oracle ACEs

Agenda

1. New Features
2. Infrastructure & Tools
3. Migration & Upgrade Assistant
4. Translations
5. Deprecated & Desupported
6. Migration Result

New Features

APEX 26.1 New Features

- APEXlang
- AI Agents
- AI Interactive Reports
- Data Reporter

Additional Platform Enhancements

Developer Experience

Translations

Workflow

Universal Theme

Security and Compliance

Map Region

Component Updates

Developer Experience

Enjoy a more refined and productive App Builder experience with workspace search, a refreshed Builder UI, and richer diff views that make it easier to navigate applications, review changes, and work efficiently throughout the development lifecycle.

- **Refined Builder Experience**

Work with a cleaner, more modern Builder UI featuring updates to the Page Designer, shared components, navigation, dialogs, and Builder pages.

- **Workspace Search**

Quickly find workspaces from the sign-in and workspace selection screens and sort by recent login to surface the workspaces you use most.

- **Context-Rich Diff Views**

Review changes with more context in Working Copy diff views, including component names and types, plus APEXlang syntax highlighting to make edits easier to understand at a glance.

Oracle APEX Support Timelines



<https://apex.hyplus-group.com/ords/f?p=368:20>

Oracle APEX Support Timelines

Release	General Availability Date	Support Ends
26.1	May 2026	November 2027
24.2	January 2025	July 2027
24.1	June 2024	December 2026
23.2	November 2023	May 2026

<https://www.oracle.com/apex/>

Infrastructure & Tools

Datenbank => 19c (19.18+) / 23ai (23.26+)

1.1 Oracle Database Requirements

Oracle APEX release 26.1 requires an Oracle Database release 19c with Database Release Update **19.18 (January 2023)** or newer. On Oracle AI Database 26ai, APEX requires at least **Database Version 23.26.0** (October 2025). APEX runs on all database editions, including Enterprise Edition (EE), Standard Edition 2 (SE2), and Oracle AI Database 26ai Free. APEX can be installed in single-instance database and in Oracle Real Application Clusters (Oracle RAC) database.

[APEX 26.1 Release Notes - 1.1 Oracle Database Requirements](#)

ORDS => 26.1.1

1.3 Web Server Requirements

Oracle APEX requires Oracle REST Data Services (ORDS) 26.1.1 or later.

Oracle REST Data Services (ORDS) is Java-based web server. Oracle REST Data Services features the ability to emit RESTful web services, offers improved file upload capability, and is certified with Oracle WebLogic Server and Apache Tomcat.

As of Oracle APEX 26.1, Oracle now recommends in new installations, ORDS should be installed before APEX.

[APEX 26.1 Releasenotes - 1.3 Web Server Requirements](#)

Für die Nutzung von APEX sind auch ältere Versionen ausreichend

SQLcl – 26.1+

7.1 Prerequisites

Before using APEXlang commands, ensure:

- SQLcl release 26.1 or later is installed.
- Oracle APEX release 26.1 or later is available.
- A valid database connection is established.
- You have the required privileges to access the APEX workspace and schema.

[SQL Developer Command Line - 7.1 Prerequisites](#)

(nur für APEXlang Support, ansonsten auch niedriger)

Installation (Stand 2.10.26)

1. Datenbankupgrade (19.18+)
2. Java Upgrade (mindestens Java 17, 21 oder 25)
3. ORDS Upgrade (aktuelle Version 26.2.3, standalone)
4. SQLcl Upgrade (aktuelle Version 26.3)
5. APEX Upgrade
 1. Version 26.1 installieren
 2. Deutsches Sprachpaket installieren
 3. Aktuellen Hotfix installieren (26.1.5)

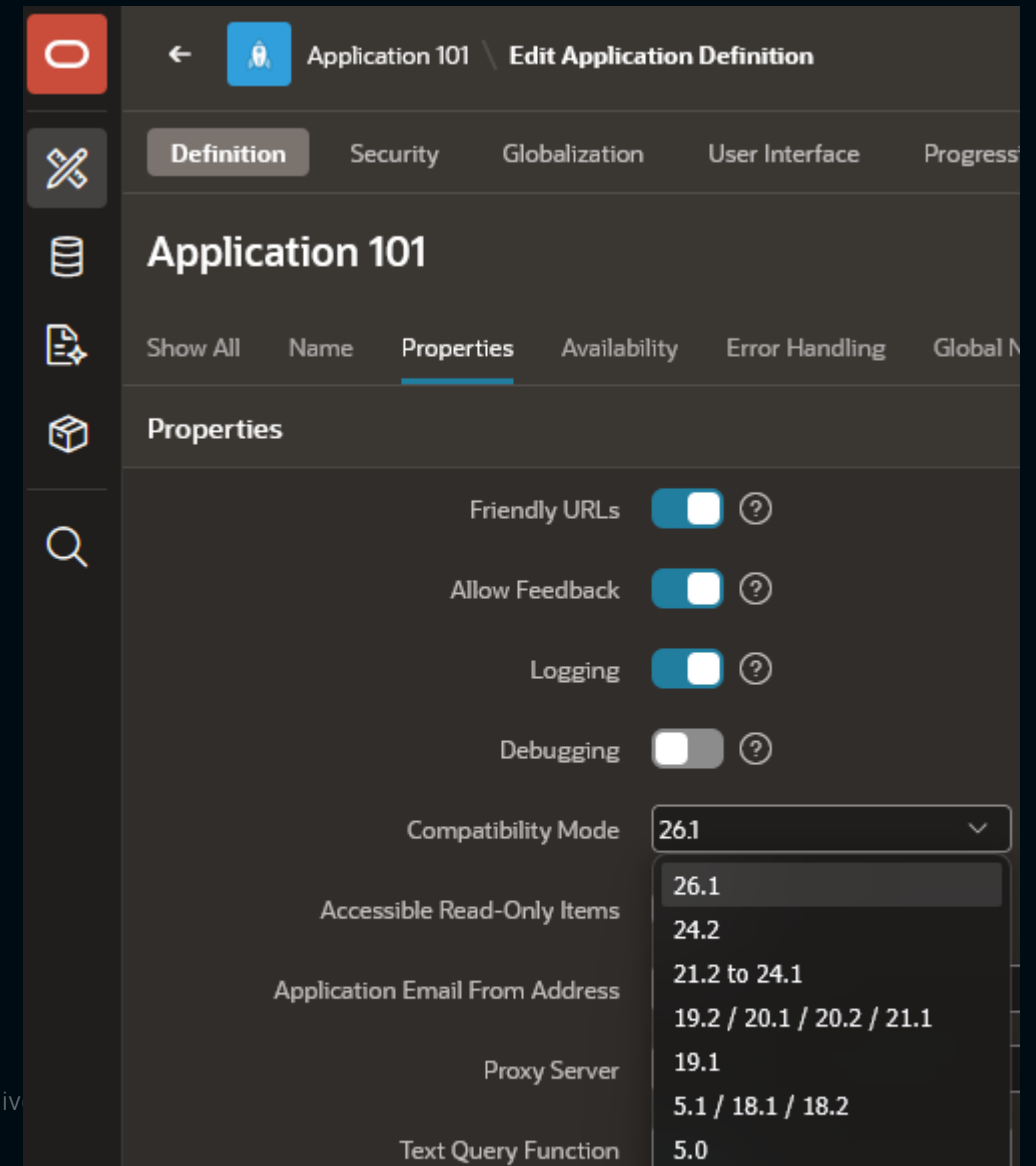
Migration & Upgrade Assistant

Migrationsschritte

1. Sichern der Anwendung (vor APEX 26.1 Upgrade)
2. Sichern der Anwendung (nach APEX 26.1 Upgrade)
3. Kompatibilitätsmodus aktualisieren
4. Universal Theme refreshen
5. Theme Style setzen*
6. Upgrade Application Assistant ausführen
7. APEX Visualizer einsetzen
8. Übersetzungsmechanik anpassen
9. Export von YAML auf APEXlang umstellen

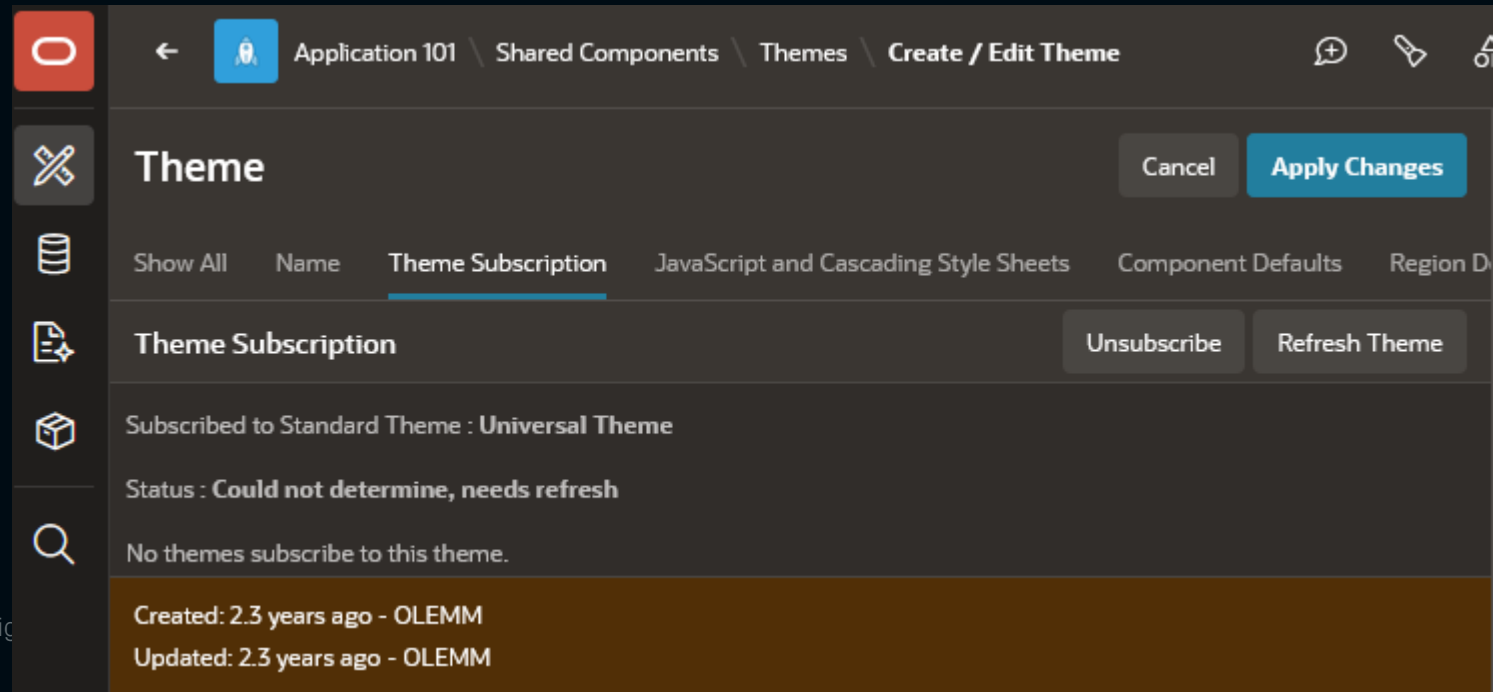
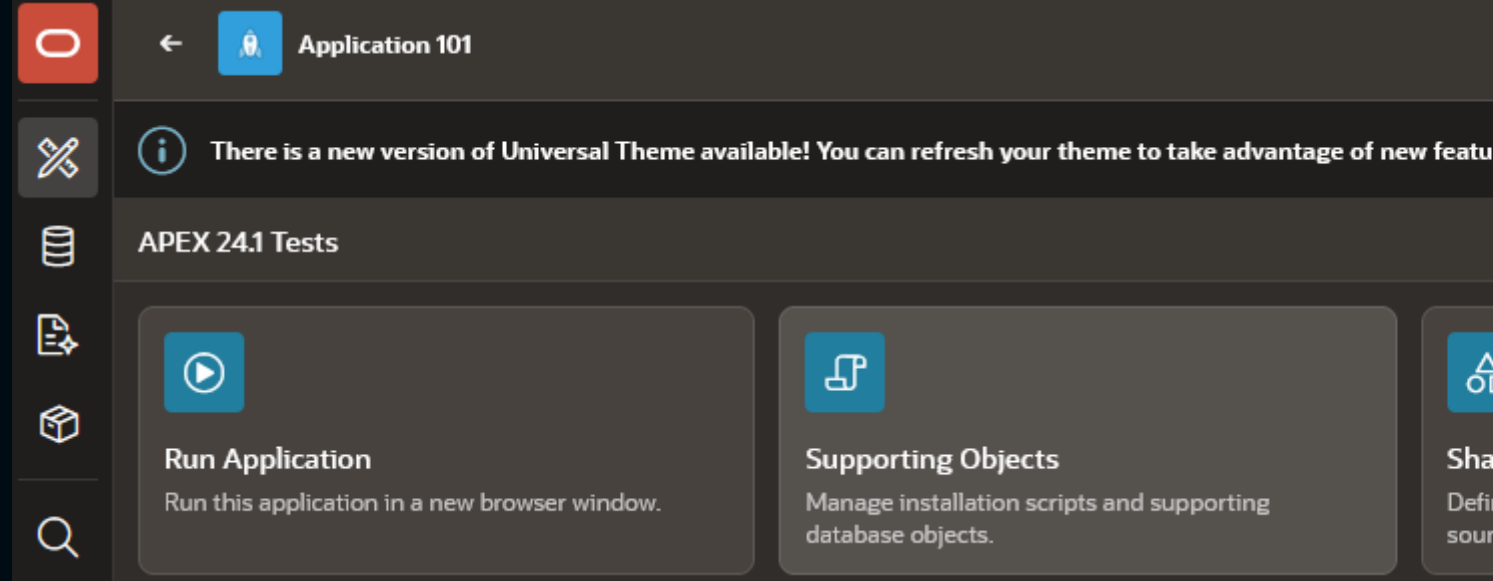
Kompatibilitätsmodus / Compatibility Mode

- Shared Components
- Application Definition
- Abhängigkeit* von Universal Theme <-> Compatibility Mode



Universal Theme

- Info zum Refresh im Page Designer
- Shared Components
- Themes
- “Refresh Theme”
- Falls vorhanden Theme Style setzen



Upgrade Assistant

- Page Designer
- Utilities
- Upgrade Application
- Behebung per “Klick”
- Achtung prüfen welche Features Sinn machen und eigene Vorgaben beachten

Upgrade Summary		
Enable Group By for Interactive Reports	4 object(s)	Details
Enable Pivot for Interactive Reports	2 object(s)	Details
Enable Rows Per Page Selector for Interactive Reports	35 object(s)	Details
Enable Save Public Report for Interactive Reports	4 object(s)	Details
Enable Subscription for Interactive Reports	4 object(s)	Details
Numeric, Required, and Date Picker Item updates based upon conditional validations	34 object(s)	Details
Remove %null% in LOV Null Return Value of Page Items	13 object(s)	Details
Update Text Field Item to Number Field Item, where appropriate	1 object(s)	Details
Update Value Required item attribute to Yes, where appropriate	5 object(s)	Details
Update all end-aligned Number Fields to start-aligned	25 object(s)	Details
Upgrade Button Dynamic Actions to Trigger Actions	93 object(s)	Details
Upgrade Buttons to use Declarative Confirmation Dialogs instead of JavaScript in URLs	5 object(s)	Details
Upgrade Legacy Form page to page containing Form Region, where appropriate	2 object(s)	Details
Upgrade Number Fields to use a decimal virtual keyboard	10 object(s)	Details
Upgrade Tabular Form to Interactive Grid	5 object(s)	Details

APEX Visualizer

- <https://github.com/OliverLemm/apex-visualizer>
- 100% kostenlose APEX App
- Analyse Deprecated & Desupported für alle Versionen
- Best Practices findings
- Visualisierung von Code

APEX Visualizer					
Applications	Pages	Visibility	Last Updated	Templates	JavaScript
CSS	PL/SQL	Plugins	Links	QA	Migration Details
Migration Effort					
Migration					

Priority	Type	APEX Version	Chapter No	Chapter Name	
2 - should	generally	26.1	0.2.1	Migration Effort for simple Page(s)	Av
	generally	26.1	0.2.2	Migration Effort for normal Page(s)	Av
	generally	26.1	0.2.3	Migration Effort for complex Page(s)	Av
	generally	26.1	0.2.4	Migration Effort for very complex Page(s)	Av
	generally	26.1	0.3.1	Universal Theme usage	Un
	generally	26.1	0.6.1	Plugins	Re
	generally	26.1	3.18	Compatibility Mode	Fo
	desupported	20.2	7.1.8	Tabular Forms Desupported	Cr co fu
Priority Total:					
3 - recomm	generally	26.1	0.3.4	Deactivate jQuery Migrate	Sw
	generally	26.1	0.4.1	Migrate JavaScript to declarative functionality	M
	desupported	22.1	8.1.6	Post Calculation for Page Items Desupported	TH ite ite
	desupported	22.1	8.1.4	Legacy Substitution Strings Desupported	As TH O
	desupported	22.1	8.1.2	Desupported Region Positions	TH D
	desupported	22.1	8.1.1	Desupported Page Positions	TH 3,
Priority Total:					
4 - best practices	generally	26.1	0.3.5	Session State Protection	Er
Priority Total:					

Übersetzungsmechanik

- Bis APEX 24.2 über Translation Repository
- Ab APEX 26.1 über Text Messages
- Falls in APEX 26.1 noch Translation Repository aktiv ist, geht kein APEXlang Export

[APEX 26.1 App Builder User's Guide - 22.4 Understanding the Translation Process](#)

22.4 Understanding the Translation Process

To translate an APEX application, enable the Application Translation switch on the Edit Globalization page. The Translation Method (Application-Based or Text-Message Based).

This section describes the different approaches of translating an APEX application.

- [Before You Begin: Configure Globalization Attributes](#)

The first step in translating an application is to configure Globalization attributes and enable the Application Translation switch.

- [Creating an Application-Based Translation](#)

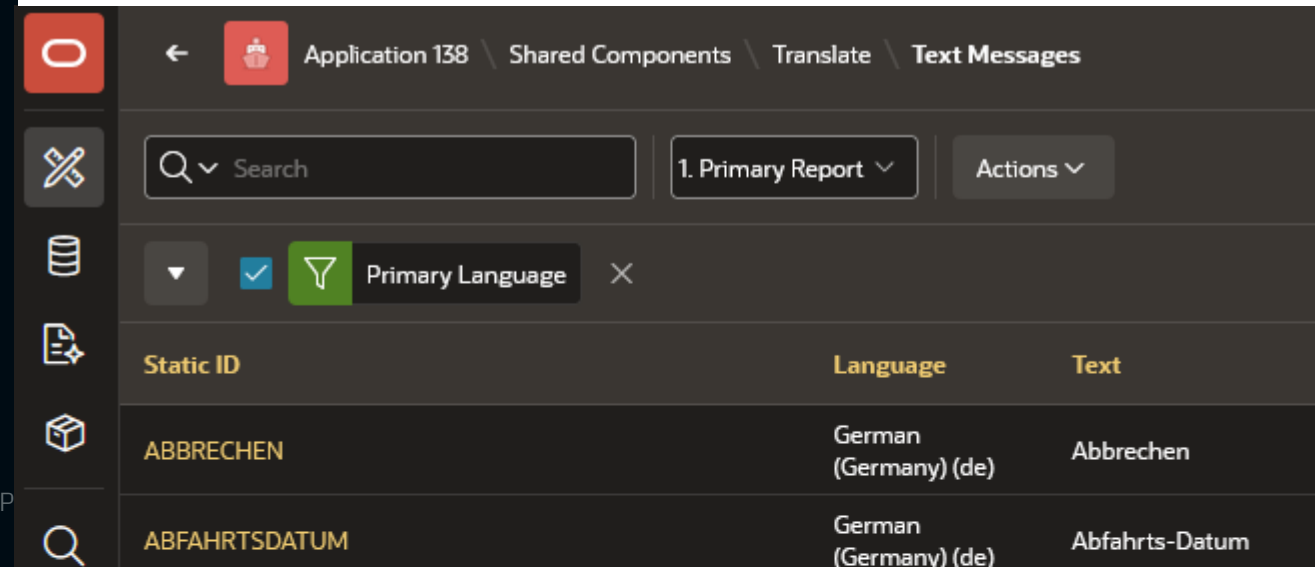
Learn how to create a Message-Based application translation.

- [Creating a Text Message-Based Translation](#)

Learn how to create a Text Message-Based application translation.

- [Manually Editing a Translation](#)

Once you have mapped the target language and seeded the translatable text, you can manually edit the translation.



The screenshot shows the APEX application translation interface. The breadcrumb navigation at the top reads: Application 138 > Shared Components > Translate > Text Messages. Below the navigation is a search bar and a dropdown menu set to '1. Primary Report'. A filter bar shows 'Primary Language' with a checkmark. The main table displays the following data:

Static ID	Language	Text
ABBRECHEN	German (Germany) (de)	Abbrechen
ABFAHRTSDATUM	German (Germany) (de)	Abfahrts-Datum

Deprecation & Desupported

Deprecated Features

5.1 Cohere AI Models Deprecated

5.2 Legacy Calendar Templates Deprecated

5.3 Deprecated Property

5.4 Deprecated PL/SQL APIs

5.5 Deprecated JavaScript APIs

5.6 Export Repository Deprecated

5.7 RESTful Services Feature in SQL Workshop

5.8 Deprecated Substitution Strings

5.9 Deprecated Public Views and Public View Columns

[APEX 26.1 Releasenotes - 5 Deprecated Features](#)

JavaScript Deprecations

5.3 Deprecated Property

The **JavaScript Static ID** property, introduced for JET Chart Series components to maintain backward compatibility, is deprecated and displays in Page Designer only if it already has a value. Going forward, use the unique **Static ID** property in new applications.

5.5 Deprecated JavaScript APIs

`apex.util` functions `cancelInvokeAfterPaint` and `invokeAfterPaint` are now deprecated. Use the native browser functions `requestAnimationFrame` and `cancelAnimationFrame` instead.

`widget.grid` method `getSelectedRange` is deprecated. Use `getSelectedRanges` instead.

PL/SQL Deprecations

5.4 Deprecated PL/SQL APIs

APEX_AI

The following procedures are deprecated:

- GENERATE Function Signature 3
- CHAT Function Signature 3

Instead, use the two new signatures that contain a `p_agent_static_id` parameter instead of the deprecated `p_config_static_id` parameter.

APEX_PLUGIN

The following fields in `APEX_PLUGIN.T_REGION` are deprecated:

- `static_id`
- `filter_region_static_id`

Use `dom_id` and `filter_region_dom_id` for new development.

The `name` member of the `APEX_PLUGIN.t_plugin` record is deprecated. Use the new `static_id` member instead.

APEX_UTIL

In `APEX_UTIL`, the following APIs are deprecated:

- `CACHE_GET_DATE_OF_PAGE_CACHE`
 - Instead, use `APEX_PAGE.GET_CACHE_DATE`
- `CACHE_GET_DATE_OF_REGION_CACHE`
 - Instead, use `APEX_REGION.GET_CACHE_DATE`
- `PUBLIC_CHECK_AUTHORIZATION`
 - Instead, use `APEX_AUTHORIZATION.HAS_ACCESS`
- `PURGE_REGIONS_BY_NAME`
- `PURGE_REGIONS_BY_PAGE`

HTML / Template Deprecations

5.8 Deprecated Substitution Strings

As of this release, the following substitution strings are deprecated:

- `#REGION_STATIC_ID#`
- `#BUTTON_ID#`
- `APP_REGION_STATIC_ID`

While these substitutions still function, Oracle recommends developers update their environments to use the replacements below:

- For `#REGION_STATIC_ID#` and `#BUTTON_ID#`, use `#DOM_ID#`
- For `APP_REGION_STATIC_ID`, use `APP_REGION_DOM_ID`

- Achtung: Falls man eigens definierte Templates erstellt hat müssen diese von Hand angepasst werden.

Desupported Features

7.1 Desupported Public View Columns

- COMPONENT_SIGNATURE Column
- The COMPONENT_SIGNATURE column is nullified in all public views, and the column comment is marked obsolete. The Application Comparison and Component Summary Count utilities are now removed.

7.2 iOS Status Bar Style Desupported

- The iOS status bar style (apple_status_bar_style) is no longer rendered.

[APEX 26.1 Release Notes - 7. Desupported Features](#)

Changed Behavior (nur einige Einträge)

- Application Alias is used for APEXlang export as Directory
- The existing **Static ID** property for Regions, Buttons, Interactive Grid, and Interactive Report Columns is renamed to **HTML DOM ID** to better reflect its purpose in the DOM and to avoid overlapping with the newly-introduced **Static ID** used in APEXlang application exports.

APEX 26.1 Libraries

▪ Cropper.js	1.6.2	▪ maplibre-gl-js	5.6.1
▪ font-apex	2.5.1	▪ Markedjs	17.0.4
▪ fullcalendar	6.1.20	▪ Monaco editor	0.55.1
▪ Hammer.js	2.0.8	▪ Oracle Jet	20.0.5
▪ Jointplus	4.1.1	▪ Ortl	2701.0.0
▪ jQuery	3.7.1	▪ prismjs	1.30.0
▪ jQuery Migrate	3.5.2	▪ Purify	3.4.13
▪ jQuery UI	1.14.1	▪ Terser	5.46.0
▪ Less.js	4.6.3	▪ Turndown	7.2.2
▪ mapbox	0.3.0		

Migration Result

Universal Theme (1) - Textumbruch

- Keine Probleme beim refresh
- Umbruch von Text

```
/* APEX 26.1 - Umbruch nur Wordweise nicht im Wort */  
.apex-item-display-only  
{  
    word-break: break-word; /* default seit 26.1 ist break-all */  
}
```

Universal Theme (2) – Button Template

■ 24.2

```
<button ...  
    onclick="#JAVASCRIPT#" ...  
    id="#BUTTON_ID#" ...  
</button>
```

■ 26.1

```
<button ...  
    {if MENU_ID/}data-menu="#MENU_ID#{endif/} ...  
    #ONCLICK# ...  
    id="#DOM_ID#" ...  
</button>
```

Universal Theme (3) – Item Label

- 24.2

```
<label for="P2600_FOBA_AUFLAGEDATUM"  
id="P2600_FOBA_AUFLAGEDATUM_LABEL"  
class="t-Form-label" title="">Fondsauflagedatum</label>
```

- 26.1

```
<span id="P2600_FOBA_AUFLAGEDATUM_LABEL"  
class="t-Form-label">Fondsauflagedatum</span>
```

Universal Theme (4) - required

- Die Eigenschaft required sorgt jetzt auch dafür das ein rotes Sternchen dargestellt wird. Auch wenn das Label “nicht required” ist.

JavaScript Dialoge (1)

- vor APEX 24.2

```
javascript:apex.theme42.dialog('f?p=1000:480:1107073517694...',h:'900',w:'90\u0025',mxw:'960',modal:true,dialog:null,dlgCls:'t-Dialog-page--standard '+'fpp-dialog_assetquote',closeOnEscape:false},'',this)
```

- ab APEX 24.2

```
#action$a-dialog-open?url=f%3Fp%...&appId=1000&pageId=480&tmpl=modal-dialog&title=Assetquote%20bearbeiten&h=900&w=90%25&mxw=960&isModal=true&dlgCls=fpp-dialog_assetquote&pageCls=&trgEl=this
```

JavaScript Dialoge (2)

- Vor 24.2 möglich

```
window.open(pUrl, "_self");
```

- Ab 24.2

```
apex.navigation.redirect(pUrl);
```

Translations

- Umstellung auf Text Messages
 1. Seed Translation
 2. Method “Text-Based”
 3. Convert Application Text

← Application 104 Edit Globalization Attributes

Definition Security **Globalization** User Interface Progressive Web App AI

Application 104

Globalization

Application Primary Language German (Germany) (de) ?

Translate Application ☒ ?

Translation Method ☒ Application-Based ?
☐ Text Message-Based

Convert to Text Messages

This process converts and updates text throughout your application into Text Messages, enabling streamlined updates across the app and simplifying translations through XLIFF or CSV export/import. You can continue developing in your primary language and use this process to regularly sync text messages.

Any exceptions found are stored at the session level. After logging out and back in **Convert to Text Messages** must be run again in order to see the exceptions.

Note: This process will not convert template directives, numeric text, component text marked as not translated, or subscribed text objects.

Cancel

Convert Text Messages

About

Text Messages can be used to build translatable text strings with substitution variables that can be called from PL/SQL packages, procedures, and functions.

[Learn More ...](#)

Tasks

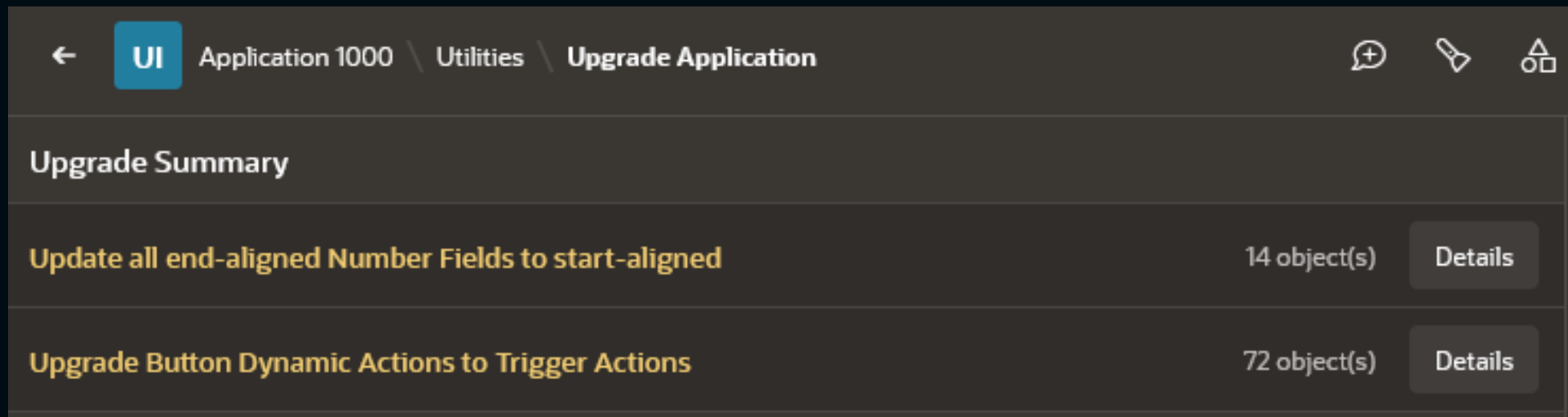
Grid Edit >

Copy from another app >

Convert Application Text >

Dynamic Actions vs Trigger Actions

- Upgrade Assistant Vorschlag Dynamic Actions -> Trigger Actions



The screenshot shows the Oracle APEX Upgrade Assistant interface. At the top, there is a breadcrumb trail: 'UI' (highlighted in blue) > 'Application 1000' > 'Utilities' > 'Upgrade Application'. To the right of the breadcrumbs are three icons: a speech bubble with a plus sign, a magnifying glass, and a triangle with a plus sign. Below the breadcrumbs is a section titled 'Upgrade Summary'. This section contains two rows of upgrade suggestions. Each row has a description of the upgrade, the number of objects affected, and a 'Details' button.

Upgrade Summary		
Update all end-aligned Number Fields to start-aligned	14 object(s)	Details
Upgrade Button Dynamic Actions to Trigger Actions	72 object(s)	Details

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