

# Apex Shared Components

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20. Strokovno srečanje

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**SIOUG** Slovensko  
društvo Oracle  
uporabnikov



# Quick introduction

- IT Solutions Architect at Abakus plus, d.o.o
- SIOUG - Member of Executive Committee
- Oracle Database Certified Professional 9i, 11g
- Oracle Application Express Developer Certified Expert
- SIOUG and Apex Meetups





# Public appearances

- **HTMLDB – just a toy?, SIOUG, Portorož 2004**
- It's good to know your own backyard (Trace Analyzer, dbms\_profiler), SIOUG, Portorož 2005
- Oracle Database Standard Edition, SIOUG, Portorož 2008
- Create table, SIOUG, Portorož 2009
- With Oracle Forms to future, SIOUG, Portorož 2010
- Oracle Listener, SIOUG, Portorož 2011
- Apex Plugins, SIOUG, Ljubljana 2012
- Apex Workshop: All you need to start working with Apex, Ljubljana 2012
- Apex Listener, SIOUG, Mengeš 2013
- Apex and jQuery, SIOUG, Mengeš 2013
- Apex Dynamic Actions, SIOUG, Mengeš 2013
- JavaScript in Apex, SIOUG, Ljubljana 2014
- JavaScript in Apex, SROUG, Zlatibor, Serbia, 2015
- Apex Meetups, Ljubljana, Kranj, 2015
- Apex Shared Components, SIOUG, Portorož, 2015
- JavaScript in Apex, HROUG, Rovinj, Croatia, 2015





# Abakus plus, d.o.o.

## History

from 1992, ~20 employees

## Applications:

special (DB – Newspaper Distribution, FIS – Flight Information System)

**ARBITER – the ultimate tool in audit trailing**

**APPM – Abakus Plus Performance and Monitoring Tool**

## Services:

DBA, OS administration, programming (MediaWiki, Oracle)

networks (services, VPN, QoS, security)

open source, monitoring (Nagios, OCS, Wiki)

## Hardware:

servers, **backup server**, **SAN storage**, firewalls

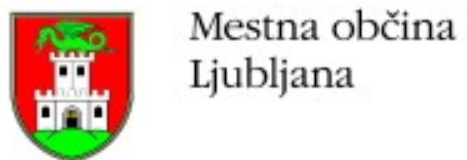
## Infrastructure:

from 1995 GNU/Linux **(20 years of experience!)**

Oracle on GNU/Linux: since RDBMS 7.1.5 & Forms 3.0 **(before Oracle!)**

**>20 years of experience with High-Availability!**
















# Shared Components

Shared components can display or be applied on any page within an application. This section describes the advantages of using shared components and specifically how to manage static application files, static workspace files, images, application-level items, lists of values, lists, shortcuts, and report output.

[https://docs.oracle.com/cd/E59726\\_01/doc.50/e39147/shared\\_comp.htm#HTMDB29851](https://docs.oracle.com/cd/E59726_01/doc.50/e39147/shared_comp.htm#HTMDB29851)



Application Logic	Security	Other Components
 <ul style="list-style-type: none"> <li>Application Definition Attributes</li> <li>Application Items</li> <li>Application Processes</li> <li>Application Computations</li> </ul>	 <ul style="list-style-type: none"> <li>Security Attributes</li> <li>Authentication Schemes</li> <li>Authorization Schemes</li> <li>Session State Protection</li> <li>Build Options</li> </ul>	 <ul style="list-style-type: none"> <li>List of Values</li> <li>Plug-ins</li> <li>Component Settings</li> <li>Shortcuts</li> </ul>
Navigation	User Interface	Files
 <ul style="list-style-type: none"> <li>Lists</li> <li>Navigation Menu</li> <li>Breadcrumbs</li> <li>Navigation Bar List</li> </ul>	 <ul style="list-style-type: none"> <li>User Interface Attributes</li> <li>Themes</li> <li>Templates</li> </ul>	 <ul style="list-style-type: none"> <li>Static Application Files</li> <li>Static Workspace Files</li> </ul>
Data References	Reports	Globalization
 <ul style="list-style-type: none"> <li>Data Load Definitions</li> <li>Web Service References</li> </ul>	 <ul style="list-style-type: none"> <li>Report Queries</li> <li>Report Layouts</li> </ul>	 <ul style="list-style-type: none"> <li>Globalization Attributes</li> <li>Text Messages</li> <li>Translate Application</li> </ul>



# Agenda

- Shared Components - new features
- Theme Subscriptions
- Theme Styles – “Sharing”
- Rejoin session
- Build options
- Shortcuts
- Text Messages







# New features

- OTN New Features in Release 5

<http://www.oracle.com/technetwork/developer-tools/apex/learnmore/apex-50-new-features-2517998.html>

Universal Theme, Template Options, Responsive Design

- Changes in Oracle Application Express 5.0

[https://docs.oracle.com/cd/E59726\\_01/doc.50/e39147/release\\_changes.htm#HTMDB29121](https://docs.oracle.com/cd/E59726_01/doc.50/e39147/release_changes.htm#HTMDB29121)

Universal Theme, Theme Styles, Theme Roller, Template Options, Theme Subscriptions, Better Navigation, Static File Upload





# Theme Subscriptions

- Themes and templates can be subscribed on a theme level now
- Developers subscribe to a theme when
  - Running the Create Application Wizard ( validate theme )
  - Creating a new theme from the Theme repository
- When an application subscribes to a master theme, all theme attributes, subscribed template options, and subscribed templates are set to read-only





# Theme Subscriptions

- Verify if a Theme Refresh is Needed
- Refreshing a Subscribed Theme
  - Refresh Theme ( pull - one )
  - Publish Theme ( push – to all )
- Subscribed to Standard Theme : Universal Theme
  - After patching / upgrading – REFRESH!





# Theme Subscriptions

## Confirm Unsubscribe Theme



Please confirm that you wish to unsubscribe the current theme from its master theme. Unsubscribing a theme will prevent future updates to the theme being applied. It is non-trivial to re-subscribe a theme once unsubscribed, as it involves copying and switching themes.

Please note that subscribed themes can be extended by adding templates, styles and files that are local to the theme, for example by creating a new template or copying a subscribed template. Templates, styles and files added to a subscribed theme will be editable, however subscribed components are read-only.

Unsubscribing a theme also unsubscribes all templates, Javascript and CSS, global template options, icons, and styles allowing you to customize any of the currently subscribed components.

Cancel

Unsubscribe Theme





# Theme Styles – “Sharing”

- Theme styles are CSS files that are referenced in the page template using the #THEME\_STYLE\_CSS#
- A theme can have multiple theme styles with one style set active
- “Sharing”
  - Theme Roller JSON Configuration
  - apex.utr.config() (Theme Roller must be running)





# Rejoin session

The Rejoin Sessions attribute controls if Oracle Application Express supports application URLs that do not contain session IDs. When rejoin sessions is enabled, Oracle Application Express attempts to use the session cookie to join an existing session, when a URL does not contain a session ID.

**Enabling rejoin sessions exposes your application to possible security breaches, as it can enable attackers to take over existing end user sessions.**





# Rejoin session

When rejoin sessions is enabled, Application Express attempts to use the session cookie to join an existing session, when a URL does not contain a session ID.

- Disabled
- Enabled for Public Sessions
- Enabled for All Sessions
  
- Can be also set on pages
- A more restrictive instance level setting overrides this page level value





# Rejoin session

- Enabled for Public Sessions

If the URL goes to a public page and does not contain a session ID, Application Express attempts to utilize the existing session cookie established for that application. For applications with both public and authenticated pages, a session ID is defined after the end user authenticates. Application Express only joins using the cookie when the session is not yet authenticated.

- Enabled for All Sessions

If the URL does not contain a session ID, Application Express attempts to utilize the existing session cookie established for that application, providing the following conditions are met:

- Session State Protection is enabled for the application and the URL includes a valid checksum. For public bookmarks, the most restrictive item level protection must be either Unrestricted or Checksum Required - Application Level.
- OR, the URL does not contain payload (a request parameter, clear cache or data value pairs). This setting also requires that Embed In Frames is set to Allow from same origin or to Deny for the application.







# Rejoin session - security

***Enabling rejoin sessions exposes your application to possible security breaches, as it can enable attackers to take over existing end user sessions.***

- Triggering malicious session state changes or other modifications
- Triggering unintended changes between applications

*For security reasons, Oracles recommends that administrators disable Rejoin Sessions unless they implement workspace isolation by configuring the Allow Hostname attribute at the workspace or instance-level.*

[http://docs.oracle.com/cd/E59726\\_01/doc.50/e39147/sec\\_admin\\_ssl.htm#CIHHIFBG](http://docs.oracle.com/cd/E59726_01/doc.50/e39147/sec_admin_ssl.htm#CIHHIFBG)





# Build options

- Build options enable you to conditionally display specific functionality within an application
- Don't use "Conditional display - never", use Build Options
- Two possible values
  - INCLUDE
  - EXCLUDE
- Value can be different on export
- `APEX_UTIL.SET_BUILD_OPTION_STATUS`
- `APEX_UTIL.GET_BUILD_OPTION_STATUS`





# Shortcuts

- Use Shortcuts to write frequently used code once and then reference it in many places within your application
- Shortcuts also allow for dynamic generation of code in places that typically only support static text
- Shortcuts are substitution strings that are expanded using the syntax: "SHORTCUT\_NAME"
- Subscriptions





# Shortcuts – used in locations

- Region Source for regions of type HTML\_WITH\_SHORTCUTS
- Region Templates, Region Headers & Footers
- Item Labels
- Item Default Value
- Item Post Element Text
- Item Help Text
- HTML Header of a page





# Shortcuts - types

- PL/SQL Function Body
- HTML Text
- HTML Text with Escaped Special Characters
- Image
- Text with JavaScript Escaped Single Quotes
- Message
- Message with JavaScript Escaped Special Quotes





# Shortcuts – Item Substitutions

Creating shortcuts on page item labels and page item post element text attributes can include the following substitution strings:

- #CURRENT\_FORM\_ELEMENT#
- #CURRENT\_ITEM\_ID#
- #CURRENT\_ITEM\_NAME#
- #CURRENT\_ITEM\_HELP\_TEXT#





# Text Messages

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

*Oracle Application Express is translated into German, Spanish, French, Italian, Japanese, Korean, Brazilian Portuguese, Simplified Chinese, and Traditional Chinese. If your application uses a language that is not among the ten languages into which Oracle Application Express is translated, you must translate messages displayed by the Application Express reporting engine.*

[https://docs.oracle.com/database/121/HTMDB/global\\_messages.htm#HTMDB25939](https://docs.oracle.com/database/121/HTMDB/global_messages.htm#HTMDB25939)





# Manage Text Messages

Text Messages

DEMO

Manage Messages

Prepared Messages

Restore Messages

Languages

Load Language CSV



## Manage Text Messages

Translatable Message	Language Code	Text
PAGINATION.NEXT	sl	Naprej
TOTAL	sl	Skupaj
WWV_FLOW_UTILITIES.CAL	sl	Koledar
WWV_FLOW_UTILITIES.CLOSE	sl	Zapri
APEXIR_3D	sl	3D
APEXIR_ADD	sl	Dodaj
APEXIR_AGG_AVG	sl	Povprečje
APEXIR_AGG_SUM	sl	Seštevek
APEXIR_AND	sl	in
APEXIR_BGCOLOR	sl	Barva ozadja
APEXIR_CALENDAR	sl	Koledar
APEXIR_CATEGORY	sl	Kategorija
APEXIR_CELL	sl	Polje
APEXIR_CLEAR	sl	počisti
APEXIR_COLUMN	sl	Stolpec
APEXIR_COLUMNS	sl	Stolpci
APEXIR_COMPARISON_IN	sl	v





# What component did we miss?

- What can we also share?





# Knowledge!



# Apex Shared Components

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