



Oracle APEX 4.0: New Features => Application Builder Enhancements

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- 7 years as IT manager in an international environment
- 12 years of Oracle experience – since 2004 on a daily basis
- Independent sinc 2007 focusing on APEX and Oracle Databases
- Own Blog – <http://deneskubicek.blogspot.com>


➤ Oracle Apex Developer of the year 2008

Denes Kubicek ApEx BLOG



Oracle APEX 4.0 Training: New Features
Die wichtigsten Neuerungen - von den Experten für die Praxis!
04.10 - 05.10.2010 Denes Kubicek
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 **Denes Kubicek**
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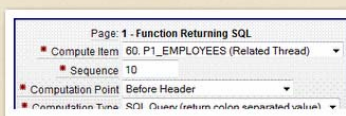
Tuesday, 28 September 2010

SQL Query (return colon separated value)

Did you know there is a new computation type in APEX - SQL Query (return colon separated value)? Probably not, because there are many other "sexier" features. However this "small" feature is really cool. Before, you needed to do several steps if you wanted to compute your multiselect list, shuttle item, checkbox or a radio button:

1. DECLARE an array,
2. SELECT * BULK COLLECT INTO array
3. use APEX_UTIL package to convert that array into a string
4. RETURN that string

With APEX 4 you don't need to do that any more. You just do a normal select and whatever it returns will be concatenated into a colon delimited string. That's it.



Page: 1 - Function Returning SQL
■ Compute Item: 60. P1_EMPLOYEES (Related Thread)
■ Sequence: 10
■ Computation Point: Before Header
■ Computation Type: SQL Query (return colon separated value)

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➤ Known for the APEX Demo Application

- ❖ over **2000** registered users
- ❖ over **1.000.000** page clicks a year in the frontend
- ❖ because of the workspace access estimated **3.000.000** page clicks
- ❖ **the most visited non-commercial application on apex.oracle.com**

➤ Apex Projects

- ❖ the most internal applications
- ❖ Synventive Apex → eBusiness Suite 11g
- ❖ Interseroh AG → Quote management
- ❖ Siemens AG → internal apps
- ❖ T-Systems → SAP and Apex – several projects
- ❖ T-Shop → internal apps
- ❖ BASF → internal apps
- ❖ Postbank → several projects...
- ❖ Bosch → quality assurance
- ❖ Internal trainings (Oracle und Apex) for several companies



➤ You can reach me under the following addresses

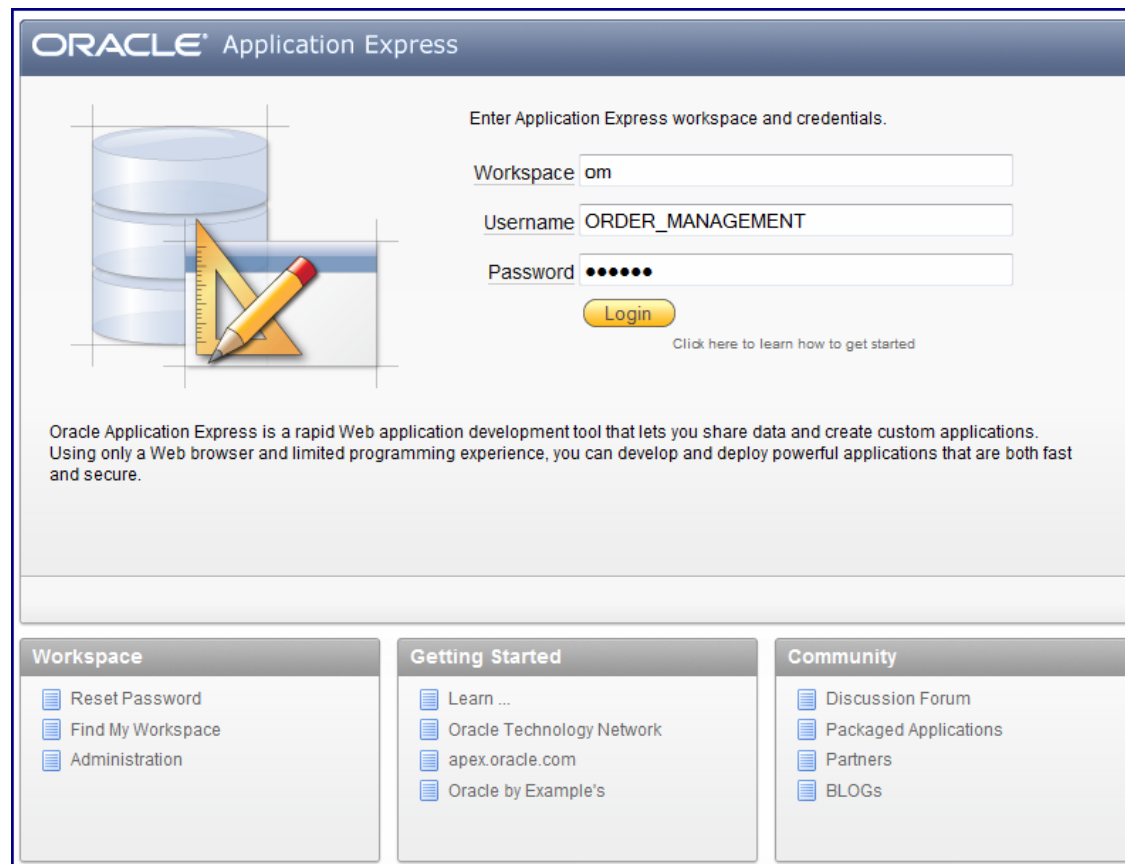
❖ deneskubicek@yahoo.de

❖ training@opal-consulting.de

- APEX Builder – User Interface
- APEX Builder – Home Page – New Features
- APEX Builder – Application Builder – New Features
- APEX Builder – User Administration – New Features
- APEX Builder – Team Development – New Features
- APEX Builder – using New Features
 - ❖ Application Check using Apex Advisor
 - ❖ Creating new workspace users
 - ❖ Using Feedback-Function and Feedback Handling
 - ❖ Export und Import of Feedback between Workspaces

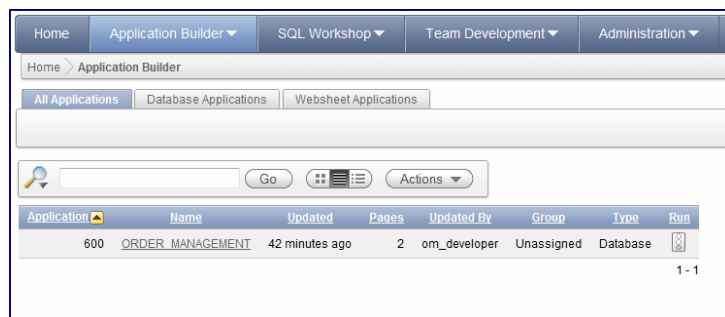
APEX Builder – better Interface

- Much nicer Login-Page – more usefull links & user friendly



APEX Builder – better Interface

- All Reports Interactive
- Many overviews and statistics of Builder usage and usage of the applications belonging to the workspace



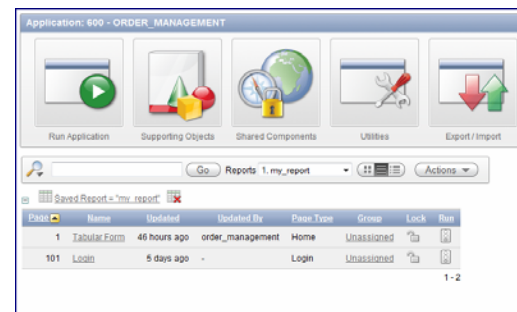
Home Application Builder SQL Workshop Team Development Administration

Home > Application Builder

All Applications Database Applications Worksheet Applications

Go Actions

Application	Name	Updated	Pages	Updated By	Group	Type	Run
600	ORDER_MANAGEMENT	42 minutes ago	2	om_developer	Unassigned	Database	1-1



Application: 600 - ORDER_MANAGEMENT

Run Application Supporting Objects Shared Components Utilities Export/Import

Go Reports: 1.my_report Actions

Page	Name	Updated	Updated By	Page Type	Group	Lock	Run
1	Tabular Form	46 hours ago	order_management	Home	Unassigned		
101	Login	5 days ago	-	Login	Unassigned		1-2



Top Applications

ORDER_MANAGEMENT 9

Page events: 1 hours

Top Users

om_developer 148
order_management 119
nobody 2

Page events: 1 hours

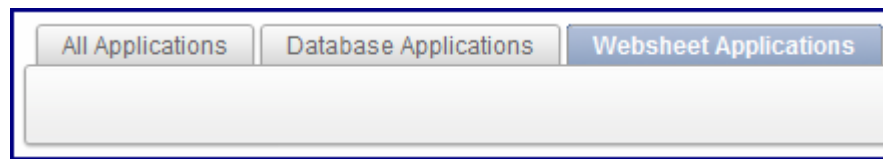
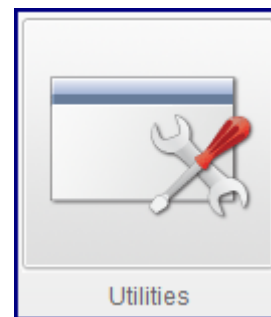
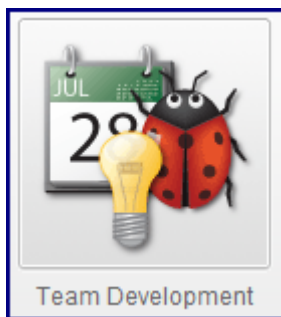
Team Development

Show: All
Release: All Releases

Features 0
Todo's 0
Milestones 0
Bugs 0
Feedback 0

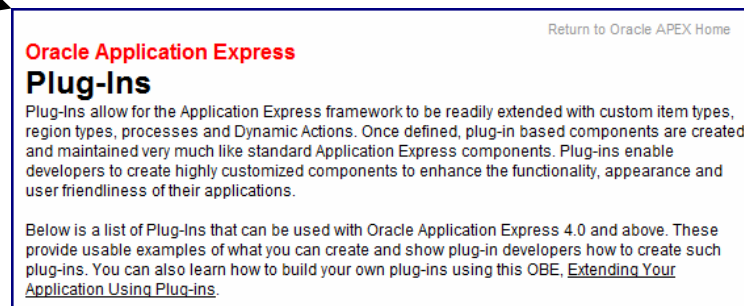
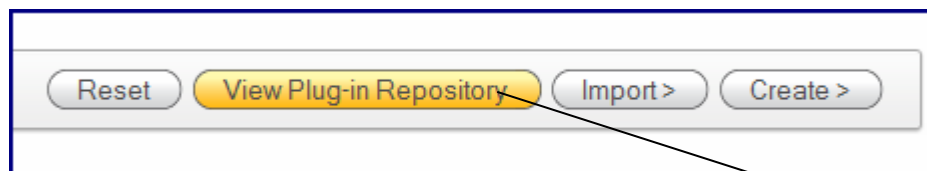
APEX Builder – better Interface

- All Menu-Options DHTML with grouping of the topics
- New Menue-Options available
 - ❖ Team Development
 - ❖ Utilities Option on the application side
 - ❖ a new Tab for Websheets



APEX Builder – better Interface

- New Options – often with Web-Links (Plug-In's)
- Tags for Tag-Cloud – especially for Team Development – with direct links to the topic



➤ Announcements

- ❖ Administration > Manage Service > Edit Announcement
- ❖ Placed on the Home-Page / Administration-Page

➤ News

- ❖ Home-Page / Team-Development-Page
- ❖ Every developer of the workspace can publish his own news

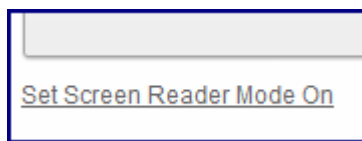
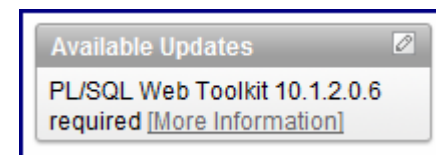
Die Entwicklungsumgebung wird wegen Upgrade zwischen dem 24.09. 6.00 und 12.00 nicht verfügbar.

News | Upgrade auf APEX 4.0 erfolgreich durchgeführt. - Order_Management 49 minutes ago

- Language Settings
 - ❖ Only if more than one language installed
 - ❖ Easy access to other languages than English

- Update-Information
 - ❖ Update-Status of the environment
 - ❖ Links to the corresponding documentation

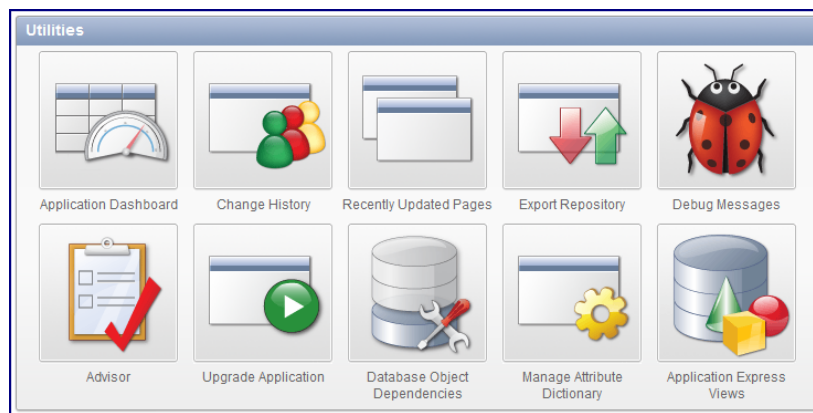
- Set Screenreader Mode On
 - ❖ Easier reading of the page content



2.7 PL/SQL Web Toolkit

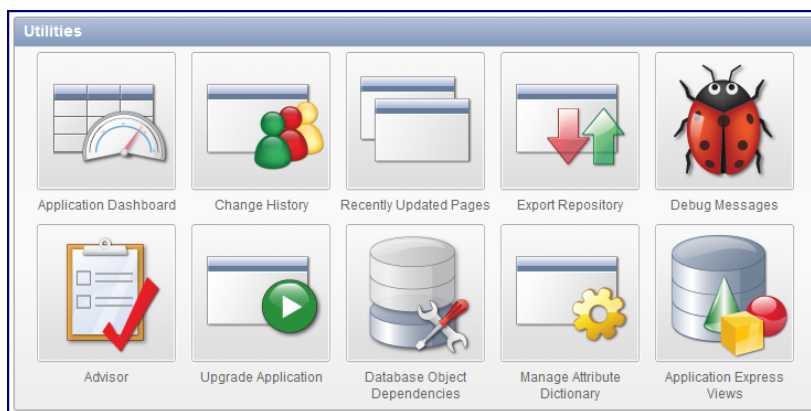
Oracle Application Express requires the PL/SQL Web Toolkit version 10.1.2.0.6 or later. 10.1.2.0.6, please review the `README.txt` file contained in the directory `apex/owa`.

- The most of the new features placed in the Application Builder
 - ❖ New Tree View in the Page Builder (vs Component View)
 - ❖ Page Rendering and Page Processing in the processing order instead of the order of the components
 - ❖ Editing of the components through a context menu
 - ❖ Creating of the corresponding processes through the same menu
 - ❖ Utilities in the properties of each application



➤ The most important New Features – Utilities

- ❖ Application Dashboard
- ❖ Change History
- ❖ Debug Messages
- ❖ Advisor
- ❖ Upgrade Application
- ❖ Attribute Dictionary



- Application Dashboard
 - ❖ Application overview
 - ❖ Application security components
 - ❖ Overview of template usage
 - ❖ Page- and Page-Component overview
 - ❖ Overview of application components

Application Overview		Security		Templates	
ID	600	Authentication	CUSTOM2	Region	25
Name	ORDER_MANAGEMENT	Public Pages	0	Page	15
Alias	F600	Non Public	4	List	14
Parsing Schema	ORDER_MANAGEMENT	Authorization Schemes	0	Report	9
Group	-			Label	5
Pages	4			Button	4
Theme	Topaz			LOV	1
Pages by Type		Application Components		Page Components	
DML Form	1	Lists of Values	3	Items	11
Interactive Report	1	Tabs	2	Processes	9
Home	1	Application Items	1	Buttons	8
Login	1	Shortcuts	1	Validations	8
		Plug-ins	0	Classic Report Columns	8
		Application Computations	0	Interactive Report Columns	8
		Validations	0	Regions	5
		Lists	0	Branches	4
		Application Processes	0	Computations	0

➤ Change History

❖ Overview of all changes within the application

Audit Date	Page	Audit Action	Developer	Component Type	Component
20 minutes ago	3	Change	ORDER_MANAGEMENT	Page Validations	P3_PROD_RANK
20 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_RANK 120
22 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_RANK 120
24 minutes ago	3	Create	ORDER_MANAGEMENT	Page Validations	-
27 minutes ago	3	Create	ORDER_MANAGEMENT	Page Validations	-
29 minutes ago	3	Change	ORDER_MANAGEMENT	Page Branches	f?p=APP_ID:2:SESSION:DEBUG...
29 minutes ago	3	Change	ORDER_MANAGEMENT	Page Branches	f?p=APP_ID:2:SESSION:DEBUG...
29 minutes ago	3	Change	ORDER_MANAGEMENT	Page Branches	f?p=APP_ID:2:SESSION:DEBUG...
30 minutes ago	3	Change	ORDER_MANAGEMENT	Page Branches	f?p=APP_ID:2:SESSION:DEBUG...
31 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_PCAT_ID 20
33 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_PCAT_ID 20
36 minutes ago	-	Change	ORDER_MANAGEMENT	Application	ORDER_MANAGEMENT
36 minutes ago	-	Change	ORDER_MANAGEMENT	Application	ORDER_MANAGEMENT
37 minutes ago	3	Create	ORDER_MANAGEMENT	Page Branches	-
38 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_PCAT_ID 20
39 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_VALID 110
40 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_FT_CODE 80
40 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_VALID 110
41 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_VALID 110
41 minutes ago	3	Change	ORDER_MANAGEMENT	Page Items	P3_PROD_VALID 110

❖ Last page updates

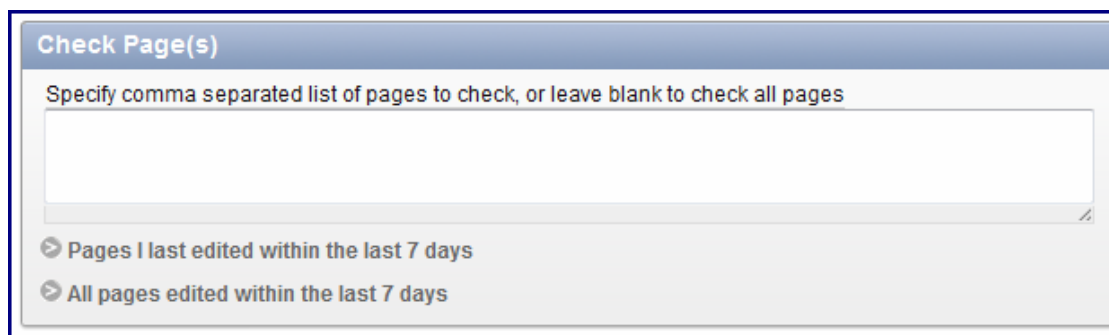
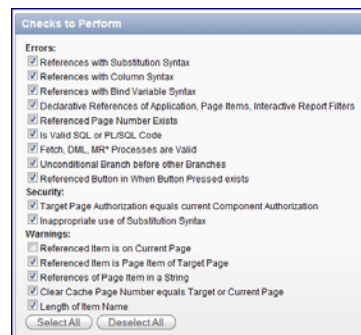
Home > Application Builder > Application 600 > Page 1 > Recently Updated Pages

Page	Page Name	Updated	Updated By	Regions	Items	Pane Group
2	Report on OM_PRODUCTS	8 minutes ago	ORDER_MANAGEMENT	1	0	-
3	Form on OM_PRODUCTS	3 hours ago	ORDER_MANAGEMENT	1	8	-
1	Tabular Form	2 days ago	ORDER_MANAGEMENT	2	0	-
101	Login	5 days ago	ORDER_MANAGEMENT	1	3	-

1 - 4

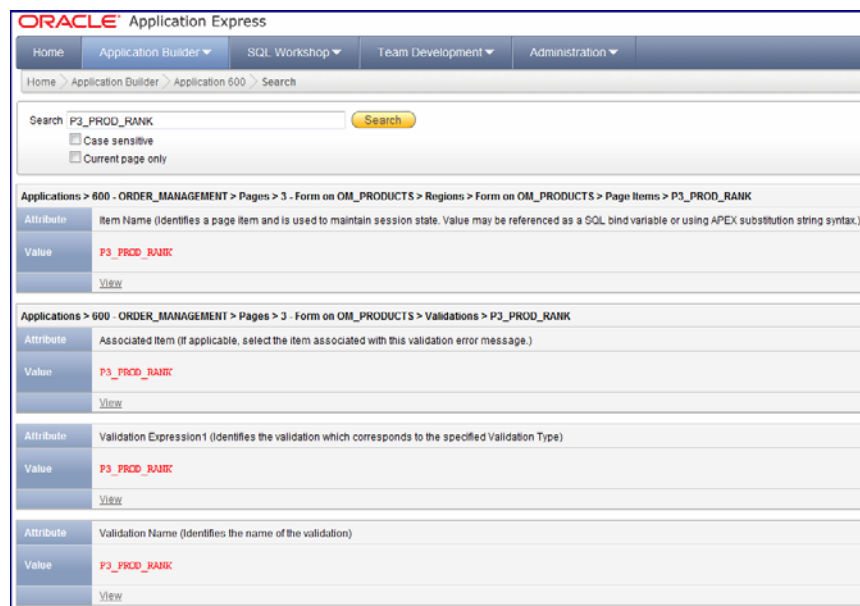
➤ Advisor

- ❖ Probably the most important component for quality assurance of the application
- ❖ In the Version 4.0 integrated as a part of Utilities section of the application
- ❖ Great number of quality checks
- ❖ Can be applied on the whole application or on a single page
- ❖ Feedback in a form of a report with direct links to the affected components



➤ Power Search

- ❖ Searches all the components within the application
- ❖ Search can be either “Case Sensitive” or “Case Insensitive”
- ❖ Search can be applied on the current page only
- ❖ Feedback in a form of a report with direct links to the affected components



The screenshot shows the Oracle APEX Application Express interface. At the top, there are navigation tabs: Home, Application Builder, SQL Workshop, Team Development, and Administration. Below the tabs, the breadcrumb path is: Home > Application Builder > Application 600 > Search. The search input field contains 'P3_PROD_RANK' and has a 'Search' button. Below the search input, there are two checkboxes: 'Case sensitive' (unchecked) and 'Current page only' (checked). The search results are displayed as a table with four rows, each representing a different component type affected by the search. Each row has an 'Attribute' and a 'Value' column, with a 'View' link below the value.

Applications > 600 - ORDER_MANAGEMENT > Pages > 3 - Form on OM_PRODUCTS > Regions > Form on OM_PRODUCTS > Page Items > P3_PROD_RANK	
Attribute	Item Name (identifies a page item and is used to maintain session state. Value may be referenced as a SQL bind variable or using APEX substitution string syntax.)
Value	P3_PROD_RANK
	View
Applications > 600 - ORDER_MANAGEMENT > Pages > 3 - Form on OM_PRODUCTS > Validations > P3_PROD_RANK	
Attribute	Associated Item (if applicable, select the item associated with this validation error message.)
Value	P3_PROD_RANK
	View
Attribute	Validation Expression 1 (Identifies the validation which corresponds to the specified Validation Type)
Value	P3_PROD_RANK
	View
Attribute	Validation Name (Identifies the name of the validation)
Value	P3_PROD_RANK
	View

➤ Upgrade Application Summary

- ❖ Nice tool for checking the applications after upgrade
- ❖ After an upgrade, APEX will not automatically replace the options with possible alternatives
- ❖ Often, the new options are better, faster or more secure
- ❖ Running the Upgrade Application Summary will create a proposal list of components applicable for upgrade
- ❖ The components in the list can be selectively picked for upgrade and APEX will apply the new feature to those elements taking care of all required steps
- ❖ This tool can be used not only after an upgrade but also during the development of an applicataion

➤ Upgrade Application Summary

Home > Application Builder > Application 600 > Utilities > Upgrade Application Summary

Upgrade Type	Candidate Objects
Update Text Field Item to Number Field Item, where appropriate	1
Enable Save Public Report for Interactive Reports	1
Enable Subscription for Interactive Reports	1
Enable Rows Per Page Selector for Interactive Reports	1

1 - 4

Home > Application Builder > Application 600 > Utilities > Upgrade Application Summary > Upgrade

Upgrade Type:

Page	Page Name	Region	Object Name	Additional Information	Page Locked By
2	Report on OM_PRODUCTS	Report on OM_PRODUCTS	Report on OM_PRODUCTS	-	-

1 - 1 of 1

➤ Debug Messages

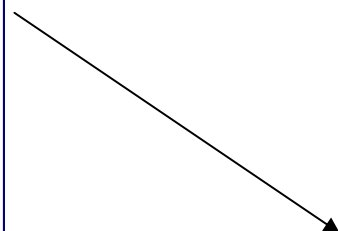
- ❖ Debugging has changed in APEX 4.0
- ❖ By default it is turned off and it needs to be activated in Shared Components / Application Definition by setting the option to “Yes”
- ❖ Debug information is not longer rendered on the page itself. The reasons for that approach are related to the new templating philosophy of APEX – the templates are not longer created using tables but using CSS and div-tags
- ❖ There are plenty of new functions in the debug modus including information about page elements, application elements, Tables, PL/SQL code, error messages and image information

APEX Builder – Application Builder – New Features

➤ Debug messages per user

View-ID	Session	Benutzer	Anwendung	Seite	Einträge	Zeitstempel	Sekunden
132570	1586701324973833	DKUBICEK@SYNVENTIVE.COM	31517	1	102	vor 6 Minuten	0,6913
125254	90512920594982	HARIKA.CHADALAVADA	31517	1	47	vor 3 Wochen	0,2831
125253	90512920594982	HARIKA.CHADALAVADA	31517	1	65	vor 3 Wochen	0,0847
125252	90512920594982	HARIKA.CHADALAVADA	31517	1	47	vor 3 Wochen	3,1912
125251	90512920594982	HARIKA.CHADALAVADA	31517	1	65	vor 3 Wochen	0,1341
125250	90512920594982	HARIKA.CHADALAVADA	31517	1	102	vor 3 Wochen	0,2012

1 - 6



➤ Debug details with statistics

Seitenansichts-ID: 132570
 Anwendung: 31517
 Seite: 1
 Abgelaufene Zeit: 0,65451
 Maximale Ausführungszeit: 0,19795








Abstraktion	Ausführung	Nachricht	Ebene	Dauer
0.03098	0.01109	SHOW: application="31517" page="1" workspace="" request="" session="1586701324973833"	3	
0.04206	0.00061	after session set nls_language="GERMAN"	3	
0.04263	0.00030	after session set nls_territory="GERMAN"	3	
0.04293	0.00054	NLS: CSV charact=WE8MSWIN1252	3	
0.04347	0.00017	...NLS: Set Decimal separator="."	3	
0.04364	0.00066	...NLS: Set NLS Group separator="."	3	
0.04434	0.00170	...NLS: Set g_nls_date_format="DD MM RR"	3	
0.04601	0.00069	...NLS: Set g_nls_timestamp_format="DD MM RR HH24 MI SSXFF"	3	
0.04673	0.00158	...NLS: Set g_nls_timestamp_tz_format="DD MM RR HH24 MI SSXFF TZR"	3	
0.04830	0.00027	...Setting session time_zone to -05:00	3	
0.04855	0.00031	Setting NLS_DATE_FORMAT to application date format: &DATE_FORMAT_MASK.	3	
0.04886	0.00040	...fetch session state from database	3	
0.04925	0.00058	fetch items	3	

- Debug Messages - Advantages
 - ❖ More information for debugging
 - ❖ Possibility to debug other sessions

View-ID	Session	Benutzer	Anwendung	Seite	Einträge	Zeitstempel	Sekunden
132570	1586701324973833	DKUBICEK@SYNVENTIVE.COM	31517	1	102	vor 6 Minuten	0,6913
125254	90512920594982	HARIKA.CHADALAVADA	31517	1	47	vor 3 Wochen	0,2831
125253	90512920594982	HARIKA.CHADALAVADA	31517	1	65	vor 3 Wochen	0,0847
125252	90512920594982	HARIKA.CHADALAVADA	31517	1	47	vor 3 Wochen	3,1912
125251	90512920594982	HARIKA.CHADALAVADA	31517	1	65	vor 3 Wochen	0,1341
125250	90512920594982	HARIKA.CHADALAVADA	31517	1	102	vor 3 Wochen	0,2012

1 - 6

Los
Aktionen ▾

Abgelesen	Ausführung	Nachricht	Ebene	Diagramm
0,00873	0,01154	SHOW: application="31517" page="1" workspace="" request="" session="90512920594982"	3	
0,02025	0,00073	alter session set nls_language="AMERICAN"	3	
0,02096	0,00033	alter session set nls_territory="AMERICA"	3	
0,02126	0,01560	NLS: CSV charset=WE8MSWIN1252	3	
0,03694	0,00054	...NLS: Set Decimal separator=","	3	
0,03740	0,00116	...NLS: Set NLS Group separator=","	3	
0,03858	0,00133	...NLS: Set g_nls_date_format="DD-MON-RR"	3	

- User administration has some major changes compared to the earlier versions
 - ❖ APEX Builder Access optional
 - ❖ SQL Workshop Access optional
 - ❖ Team Development Access optional

- Workspace Access Control – NEW – Administration > Manage Service
 - ❖ APEX Builder access in general – enabled or disabled
 - ❖ SQL Workshop access in general – enabled or disabled
 - ❖ Team Development access in general – enabled or disabled

- Extended overview of workspace usage in Workspace Utilization

APEX Builder – User Administration – New Features

Account Privileges

Default Schema: **ORDER_MANAGEMENT** ▼

Accessible Schemas (null for all):

User is a workspace administrator: Yes No

User is a developer: Yes No

Application Builder Access: **Yes** ▼

SQL Workshop Access: **No** ▼

Team Development Access: **Yes** ▼

Account Availability: **Unlocked** ▼

Account Login Control

Account Expiration and Locking: Enable Disable

Maximum Login Failures Allowed:

End User Account Lifetime (days):

Application Builder

Enable Application Builder: **Yes** ▼

SQL Workshop

Enable SQL Workshop: **Yes** ▼

PL/SQL Editing: Allow PL/SQL program unit editing Do not allow PL/SQL program unit editing

Team Development

Enable Team Development: **Yes** ▼

Workspace Summary Report

workspace

Workspace Name: OM
 Workspace ID: 1266307928014080
 Report Generated: 09/21/2010 08:51:37 AM
 Reporting Period: Last Day
 Provisioned: 09/15/2010 02:20:55 PM - 5 days ago
 Administrators: • ORDER_MANAGEMENT - deneskubicek@yahoo.de
 Developers: 3
 users: 3 Users, Most recent user created 13 hours ago

Allow application building: Yes
 Allow SQL Workshop Use: Yes
 Allow Worksheet Development: **Yes**
 Allow Use of Team Development: Yes

Builder Notification Message: Die Entwicklungsumgebung wird wegen Upgrade zwischen dem 24.09. 6.00 und 12.00 nicht verfügbar.
 Source Identifier: OM
 Allow workspace to be purged: Yes
 Last login: 09/21/2010 08:26:08 AM - 25 minutes ago
 Files: 1 Files, consuming 227K
 Pending Requests: No pending requests

Workspace Schemas

Schemas: ORDER_MANAGEMENT
 Tablespaces: APEX_1266409470014087
 Privileges: create any context, create cluster, create dimension, create indextype, create job, create materialized view, create operator, synonym, create table, create trigger, create type, create view
 Database Role Privileges:

- New Team Development Features enable better collaboration of developers building a new application
- It offers a possibility to create and maintain
 - ❖ Features
 - ❖ Milestones
 - ❖ To-Do's
 - ❖ Bugs
 - ❖ and Feedback
- It offers a lot of possibilities to report and track the entered data
- Utilities and Settings for Team Development
 - ❖ Shifting of features and bugs
 - ❖ Assigning tasks to the developers
 - ❖ Deleting all entries
 - ❖ Setting parameters

- Feedback is a new procedure in the APEX_UTIL package
- Feedback and Team Development entries available over APEX_VIEWS

```

APEX_TEAM_BUGS
APEX_TEAM_FEATURES
APEX_TEAM_FEEDBACK
APEX_TEAM_FEEDBACK_FOLLOWUP
APEX_TEAM_MILESTONES
APEX_TEAM_TODOS

```

- Possibility to extend the standard functionality
- Team Development is in a first release. It will be extended in the future versions of APEX depending on the input from the developer community.

➤ Page Specific Utilities

- ❖ Grid Edit
- ❖ Deleting multiple pages
- ❖ Changing page attributes

Page Specific Utilities
Cross Page Utilities
Region Utilities
Button Utilities
Item Utilities
Computation Utilities
Validation Utilities
Process Utilities
Dynamic Action Utilities
Branch Utilities

➤ SQL Editor with Highlight-Function

➤ Time Zone Support in the Shared Components > Globalisation

➤ Better Tab-Management

➤ Mass-Import of Workspace Users

- Import and test of an application – “test_application.sql”
- Using “Advisor” to test and correct errors
- Using “Upgrade Application Summary” and upgrade of the components

Hands-On Session – Creating of new workspace users

- Creating new developers for the workspace – Developers are not Workspace Administrators
- Assigning the rights to the new developers for
 - ❖ Team Development
 - ❖ Application Builder
 - ❖ SQL Workshop
- Using Workspace Preferences in “Administration” > “Manage Service” > “Set Workspace Pref’s” for
 - ❖ Team Development
 - ❖ Application Builder
 - ❖ SQL Workshop

Hands-On Session – Feedback Handling

- Creating a feedback page withing the application
- Feedback handling
- Feedback export and import

Q & A

Thank You!