Oracle Application Express 4.2
New Features

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Agenda

• Oracle Application Express Overview
• New Features in 4.2
  • Mobile
  • HTML5
  • Cloud
• Beyond Oracle APEX 4.2
• Q&A
Oracle Application Express
Overview
Oracle Application Express (Oracle APEX)

Browser Based Application Development
Oracle Application Express (Oracle APEX)

Rapid Browser Based Development
Point your browser and start developing

Leverage SQL Skills
Build reports, forms and charts using SQL

Self Service Provisioning
Out-of-the-box elastic private cloud service

Runs within Database
Simple to manage, highly scalable
Oracle Application Express (Oracle APEX)

Architecture

- Simple 2-Tier Architecture
- Pages dynamically rendered using meta data in the Database
- No code generation
- No file based compilation
- Runs everywhere Oracle Database runs
Oracle Application Express (Oracle APEX)

Fully supported no-cost feature of Oracle DB

• Distributed with
  – Oracle Enterprise Edition
  – Oracle Standard Edition
  – Oracle Standard Edition One
  – Oracle XE 10.2, 11.2

• Supported Database Releases
  – 10gR2, 11gR1, 11gR2, 12
  – Exadata, ODA, RAC
Oracle Application Express (Oracle APEX)

Versions in Use (as of 02-Nov-2012)
Oracle Application Express (Oracle APEX)

Community

• Estimated 400,000 developers worldwide
• Over 120 consulting companies worldwide
• Over 75 bloggers
• 3rd most popular forum on OTN
• Web sites dedicated to plug-ins, themes, tools
Industry Events

- ODTUG Kscope ‘12:
  - 64 APEX sessions and more than 300 APEX Developers
- Oracle Open World 2012
  - Over APEX 25 sessions
  - Numerous hands on labs
  - 3 Demo Ground booths
- UKOUG, DOAG, NYOUG, RMOUG, APEXposed, …
Oracle Application Express (Oracle APEX) Books
Browser Based Development

Rapidly and declaratively develop, deploy, and run applications using just a web browser

Take Oracle Application Express for a spin! Request a Free Workspace

START
Getting Started
Learn why Oracle Application Express is so popular by going through tutorials and watching videos aimed at beginners.

Download
Download the latest version of Oracle Application Express from the Oracle Technology Network

New Features
Get an overview of the latest features introduced in Application Express 4.2

Discussion Forum
Get help from the Application Express community on the Oracle OTN Discussion Forum

Collateral
Access numerous powerpoint presentations, advanced tutorials, and videos

Oracle Cloud
Explore the Oracle Database Cloud Service

apex.oracle.com
Oracle Application Express 4.2 – New Features

Mobile

HTML5

Cloud
Oracle Application Express 4.2 – Mobile Support

• Declarative support for building mobile web applications

• APEX Applications support multiple user interfaces: e.g. Desktop, Smartphone, Tablet, others

• Mobile pages use jQuery Mobile through jQuery Mobile based themes and templates

• HTML5 charts and new HTML5 item types
User Interfaces

• Applications can be associated with multiple user interfaces
• Applications can include desktop and mobile specific pages
• Each Page supports only one user interface
• Each user interface is associated with one theme
• User Interface defines device specific login URLs, home page URLs and device auto detection
• Page 0 replaced by Global Page(s)
Mobile Themes and Templates

• Provide Themes & HTML Templates to support the development of Mobile applications
• Declarative support to specify JavaScript & CSS files
• Default Mobile Page and Popup Transition Type
Mobile Themes and Templates

• Support Content Delivery Networks for jQuery files

• New #PAGE_STATIC_ID# substitution string added to page templates

• Easy to create custom Mobile themes using Theme Roller
List View Region Type

• Un-ordered list with data-role="listview"
• Used for data display, navigation, list view and form pages
• Full width by default with inset option
• Automatic dividers
• Declarative search filter
• Client- and server-side search options
Mobile Calendars

• Mobile-friendly calendar templates
• New list-view for date entries
• Monthly view shows date entries below calendar on mobile devices
Dynamic Action Enhancements

- Expose jQuery Mobile events through Dynamic Actions e.g. swipe, touch, tap/hold, orientation
- Provide ‘Custom’ event support
- Declarative support for buttons to be the ‘Affected Element’
- AJAX based Dynamic Actions to work asynchronously
- Chart ‘Refresh’ Dynamic Actions support
Demo Mobile Development
Building Mobile Web Applications with Oracle Application Express (APEX)

Marc Sewtz

Wednesday, 21. November
10:00am – 10:45am

12-Istanbul
Oracle Application Express 4.2 – New Features

Mobile  HTML5  Cloud
Enhanced Application Builder User Interface
Grid Layout

- Declarative way to lay out regions and items on a page
- Possible to do complex layouts without manual CSS overrides
- Compatible with popular grid frameworks such as twitter bootstrap, 960 gs, etc.
Grid Layout

• Three types of grid layout available:
  • HTML Table - Uses HTML tables to position regions, items and buttons.
  • Fixed Number of Columns - Used for grids which divide the screen into a fixed number of grid columns.
  • Variable Number of Columns - Used for grids which can display up to "n" number of grid columns depending on how the regions, page items and buttons are positioned.
Responsive Design

Approach to web design in which a designer intends to provide an **optimal viewing experience** – easy reading and navigation with a minimum of resizing, panning, and scrolling – across a wide range of devices (from desktop computer monitors to mobile phones). (Wikipedia)
Responsive Design

• Fully Responsive Theme included (Theme 25)
• Uses custom flexible grid up to 2560px wide
• Mobile, Tablet, Desktop support
• Icon Buttons
• Retina Display Compatible
Responsive Design

- Modernizr
  - Detects HTML5 and CSS3 features in the user’s browser

- SCSS Based
  - Extension of CSS3, adding nested rules, variables, mixins, selector inheritance and more. Gets translated to well-formatted, standard CSS

- Respond.js for Responsive Web Design support in older IE

- Sprite based graphics, icons
Responsive Design

• CSS3 Media Queries
  • Allows defining styles based on conditions such as screen size or resolution
  • `@media screen and (min-width: 320px) and (max-width: 479px) {...}`
  • define multiple CSS media queries to target “cut off points” and appropriately adjust UI for given screen size
HTML5 Charts

• HTML5 charts - AnyChart version 6
• 2 Chart Rendering options
  • Flash Preferred
  • HTML5
• Conditional Display of Chart Series
• HTML Chart region plug-in
HTML5 Item Types

- Incorporate HTML 5 attributes:
  - HTML5 placeholder attribute
  - HTML5 types EMAIL, TEL and URL for Textfield
  - HTML5 “required” attribute
  - Display Orientation attribute

- New Items Types:
  - Slider
  - Date Picker (HTML 5)
  - Yes/No (Flip Toggle Switch)
Demo HTML5 Features
Oracle Application Express 4.2 – New Features
# Database Cloud Service

<table>
<thead>
<tr>
<th>Database</th>
<th>Data Access</th>
<th>Development</th>
<th>Productivity Apps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>World’s leading database</strong>&lt;br&gt;Oracle Database 11g Release 2 Enterprise Edition</td>
<td><strong>SQL and PL/SQL</strong>&lt;br&gt;Industry standards for data access and logic</td>
<td><strong>Database Development</strong>&lt;br&gt;Oracle SQL Developer and the Oracle Application Express SQL Workshop</td>
<td><strong>Included Applications</strong>&lt;br&gt;More than 30 productivity and sample applications from decision management to project tracking</td>
</tr>
<tr>
<td><strong>Performance and Availability</strong>&lt;br&gt;Professionally managed using Exadata, Exalogic and Real Application Clusters (RAC)</td>
<td><strong>Access Methods</strong>&lt;br&gt;Oracle Application Express, RESTful Web Services, Java in Oracle Java Cloud Service through internal JDBC</td>
<td><strong>Application Development</strong>&lt;br&gt;Oracle Application Express - rapid application development tool</td>
<td><strong>Productive</strong>&lt;br&gt;Get started in minutes by deploying HTML5 and mobile-enabled applications with one click</td>
</tr>
<tr>
<td><strong>Secure</strong>&lt;br&gt;Schema isolation, encrypted storage, and resource management</td>
<td><strong>Data Movement</strong>&lt;br&gt;Load data with Oracle SQL Developer &quot;carts&quot; using drag and drop</td>
<td><strong>Web Services</strong>&lt;br&gt;RESTful Web Services access to data and logic, and a wizard to speed development</td>
<td><strong>Websheets</strong>&lt;br&gt;Rapidly create and share database enabled wikis</td>
</tr>
</tbody>
</table>
# Database Cloud Service - Pricing

<table>
<thead>
<tr>
<th></th>
<th>Database S5</th>
<th>Database S20</th>
<th>Database S50</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price</strong></td>
<td>$175 / Month</td>
<td>$900 / Month</td>
<td>$2,000 / Month</td>
</tr>
<tr>
<td><strong>1 Schema</strong></td>
<td>Oracle Database 11g</td>
<td>Oracle Database 11g</td>
<td>Oracle Database 11g</td>
</tr>
<tr>
<td></td>
<td>Release 2</td>
<td>Release 2</td>
<td>Release 2</td>
</tr>
<tr>
<td><strong>5 GB</strong></td>
<td>Oracle Database Storage</td>
<td>20 GB Oracle Database Storage</td>
<td>50 GB Oracle Database Storage</td>
</tr>
<tr>
<td><strong>30 GB</strong></td>
<td>Data Transfer</td>
<td>Data Transfer</td>
<td>Data Transfer</td>
</tr>
<tr>
<td><strong>120 GB</strong></td>
<td>Data Transfer</td>
<td>Data Transfer</td>
<td>Data Transfer</td>
</tr>
</tbody>
</table>
Database Cloud Service - Architecture

Oracle HTTP Server (OHS)

WebLogic Server (WLS)

APEX Listener

- Map domains to databases (static deterministic rules)
- One connection pool per database instance

Exadata

Exadata Node 1
- DB-1
- DB-2
- DB-3
- DB-4

Exadata Node 2
- DB-5
- DB-6
- DB-7
- DB-8

Exadata Node 3
- DB-9
- DB-10
- DB-11
- DB-12

Cloud UI Database
cloud.oracle.com
APEX Listener 2.0 – New Features

- Support for multiple database connections
- Administration of Listener using Oracle SQL Developer
- Command line facility for configuring APEX Listener
- Design and creation of RESTful Services using APEX
- Moved storage of RESTful Services (Resource Templates) to the APEX Schema
- RESTful Services protected via the OAuth2 Protocol
RESTful Web Services

- Interaction with data sources through use of Uniform Resource Identifiers (URIs)
- Standard method of accessing data in the Oracle Cloud
- Ability to create services which implement any SQL statement or PL/SQL procedure
- Data returned in JSON or CSV format, or additionally through PL/SQL
Packaged Applications

• Suite of Business Productivity applications installable with only a few clicks

• Production-ready applications include Project Management, Shared Calendars, Checklists, etc.

• Support for Third-party applications, sharing same infrastructure and user pool

• Sample applications (Download APEX 4.1 versions from OTN)
Packaged Applications

• **Productivity Apps**
  - Project Tracker
  - Checklist Manager
  - Customer Tracker
  - Group Calendar
  - Product Features
  - Bug Tracker
  - Asset Manager
  - Document Library
  - Survey Builder

• **Sample Code**
  - Calendars
  - Charts
  - Data Loading
  - Dynamic Actions
  - Interactive Reports
  - Master-Detail Forms
  - Tabular Forms
  - Trees
  - Sample Database Application
  - Sample Websheets
Demo Cloud
Oracle Application Express 4.2

Other functional and performance improvements
Data Upload Enhancements

• Allow up to 3 columns in Look-up Definition
• Expand transformation rules to include PL/SQL
• Provide aliases for column names
Plug-In Enhancements

• Increased Number of Custom Attributes to 25
• New APIs in `apex_plugin_util` to better support custom plug-in attributes of type "Region Column Name"
• New Standard Region Type Plug-in Settings:
  • ‘Fetched Rows’
  • ‘No Data Found Message’
• Add support for media queries and IE conditions to `apex_css` and `apex_javascript` APIs
Security: Require outbound HTTPS

• Require all outbound requests to be over HTTPS.
• Region of type URL, Web Services
Security: Instance-wide proxy

- Require all outbound HTTP(s) traffic use instance-wide proxy

![Security Configuration](image_url)
Security: Restricted Characters

- Input validation: Declarative control over which characters can be entered into session state.
Security: Log Switch (Data Retention)

- Retention of all logs is variable
- Greater log switch interval can result in less performance

<table>
<thead>
<tr>
<th>Log Name</th>
<th>Log Switched Date</th>
<th>Log Switch After Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access Log</td>
<td>06/09/2012 12:00:00 AM</td>
<td>90</td>
</tr>
<tr>
<td>Activity Log</td>
<td>06/09/2012 12:00:00 AM</td>
<td>30</td>
</tr>
<tr>
<td>Debug Messages</td>
<td>06/09/2012 12:00:00 AM</td>
<td>10</td>
</tr>
<tr>
<td>External Click Count Log</td>
<td>06/06/2012 12:00:00 AM</td>
<td>10</td>
</tr>
</tbody>
</table>
Resource Manager Consumer Group

• All requests from a workspace can be confined to a resource consumer group
Partitioning of APEX runtime tables

- Supported method to partition APEX runtime tables (session data, activity logs and indexes)
Other New Features in APEX 4.2

- Named Branches
- Read-only attribute for Pages and Regions
- Interactive Report and Websheet enhancements
- Instance Administration improvements
- SQL Workshop Date Format
- Publish Translations from command-line
- Item limit per page raised to 200
Other New Features in APEX 4.2

• New CKEditor, jQuery and AnyGantt charts versions
• Modernized JavaScript Library
  • Streamlined, lighter-weight APEX JavaScript library
  • Older APEX JavaScript functions moved to legacy file
  • Legacy JS included for older applications for backwards compatibility
Beyond Oracle APEX 4.2…
Beyond Oracle APEX 4.2…

Features under consideration

• Multiple Interactive Reports per page
• Multiple Tabular Forms per page
• Master / Detail / Detail
• Tablet User Interface
• Declarative Theme customizations
• Modal Dialogs
• Drag and Drop Layout Editor
• Improved PDF printing
• Add Pivot reporting capabilities to Interactive Reports
Oracle Application Express
Feature Requests

http://tiny.cc/apexvote

my Blog:
http://marcsewtz.blogspot.com

Twitter
@msewtz #orclapex
Hardware and Software

Engineered to Work Together