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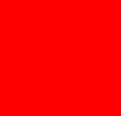
**ENGINEERED  
FOR INNOVATION**



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## **Oracle Application Express 4.1 New Features**

Mike Hichwa, Vice President, Database Tools



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# Program Agenda

- Oracle Application Express Overview
- New Features in 4.1
- Beyond Oracle APEX 4.1...
- Q&A



# Oracle Application Express (Oracle APEX)

## Browser Based Application Development

The image displays two overlapping screenshots of the Oracle Application Express (APEX) interface. The background screenshot shows the login page for the 'Global IT' workspace, with fields for Username (MIKE) and Password, and a 'Login' button. The foreground screenshot shows the main dashboard for the 'DPEAKE' workspace, featuring a navigation menu with 'Home', 'Application Builder', 'SQL Workshop', 'Team Development', and 'Administration'. The dashboard includes icons for these tools, a 'News' section, a 'Language' selector, and an 'About' section describing APEX as a rapid web application development tool.

**ORACLE** Application Express

Enter Application Express workspace and credentials.

Workspace

Username

Password

Oracle Application Express is a rapid Web application development tool that lets you s  
Using only a Web browser and limited programming experience, you can develop and  
and secure.

**ORACLE** Application Express Workspace: DPEAKE ( [Logout](#) )

Home Application Builder SQL Workshop Team Development Administration Search Workspace  Help

**Application Builder** **SQL Workshop** **Team Development** **Administration**

**News** |

**Language** | Deutsch English Español Français Italiano Português (Brasil) 中文 (繁體) 中文 (简体) 日本語 한국어

**About**

Application Express is a rapid Web application development tool that lets you share data and create applications. Using only a Web browser and limited programming experience, you can develop and deploy applications that are fast and secure.

[Learn More](#)

**Site-Specific Tasks**

- Application Express Discussion Forum
- Application Express on OTN

# Oracle Application Express (Oracle APEX)

## Benefits

Rapid Browser Based Development



Point your browser and start developing

Self Service Provisioning



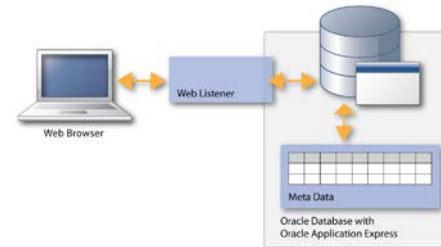
Out-of-the-box elastic private cloud service

Leverage SQL Skills



Build reports and charts using SQL

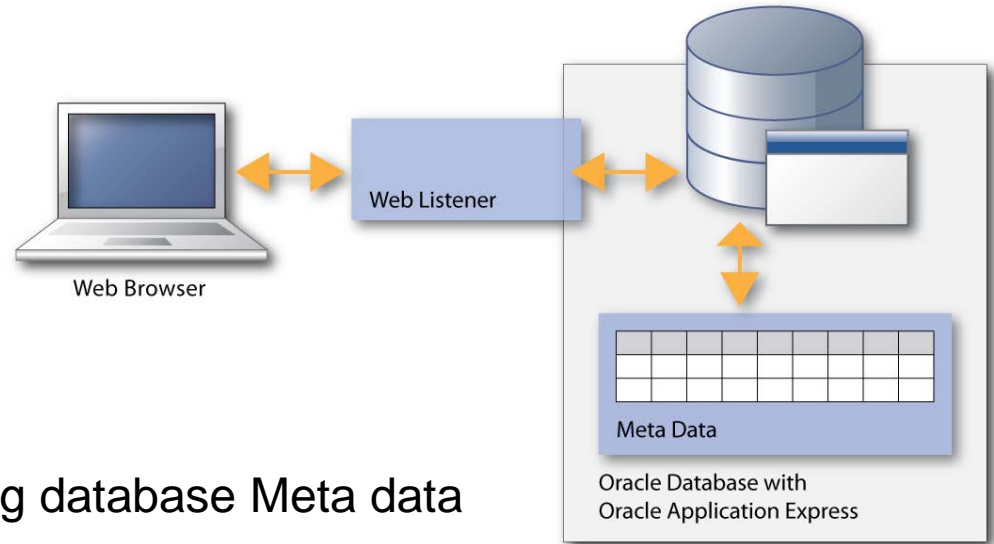
Runs within Database



Simple to manage, highly scalable

# Oracle Application Express (Oracle APEX)

## Architectural Overview



- Simple 2-Tier Architecture
- Pages dynamically rendered using database Meta data
- No code generation or file based compilation
- Runs everywhere Oracle Database runs

# Oracle Application Express (Oracle APEX)

Fully supported no-cost feature of Oracle DB

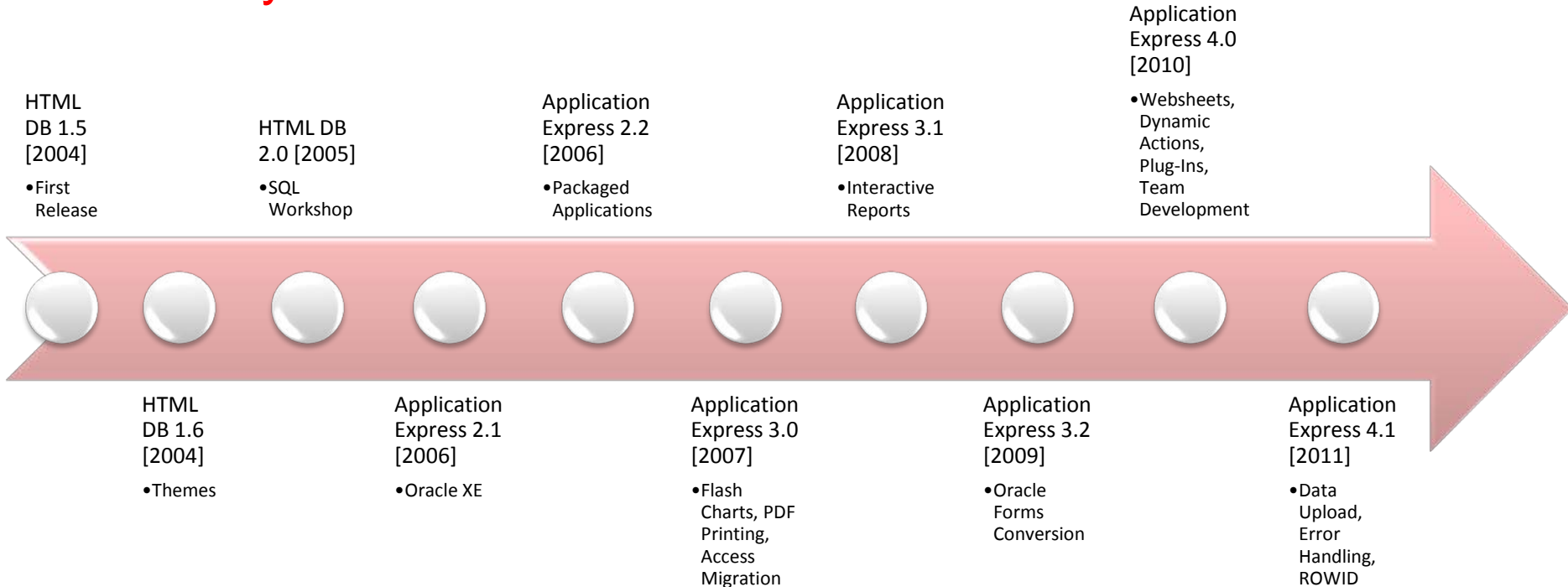


- Distributed with
  - Oracle Enterprise Edition
  - Oracle Standard Edition
  - Oracle Standard Edition One
  - Oracle XE
- Supported Database Releases
  - 10gR2
  - 11gR1
  - 11gR2



# Oracle Application Express (Oracle APEX)

## History



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# Error Handling



- Error Handling Function
- Provide developers full control when an error occurs
- Capabilities include:
  - Log all errors
  - Map errors raised by the Oracle Database (like “Unique constraint XYZ violated”) to friendlier error messages
  - Display all errors “Inline in Notification”
  - Increase security by masking internal APEX errors

# Use of ROWID

- Allow usage of ROWID for Automatic DML Processing
- Tables with > 2 Primary Key(PK) columns supported
- Support for PK columns that are also a Foreign Key
- Alternative to identification of Primary Key columns
- Ability to create Form, Form & Report or Tabular Form on Table or View with no Primary Key



# Data Upload

- Provide the ability for end-users to update spreadsheet data into tables
  - Developer uses wizard to specify parameters
  - Following pages created:
    - Data Load Source
    - Data / Table Mapping
    - Data Validation
    - Data Load Results



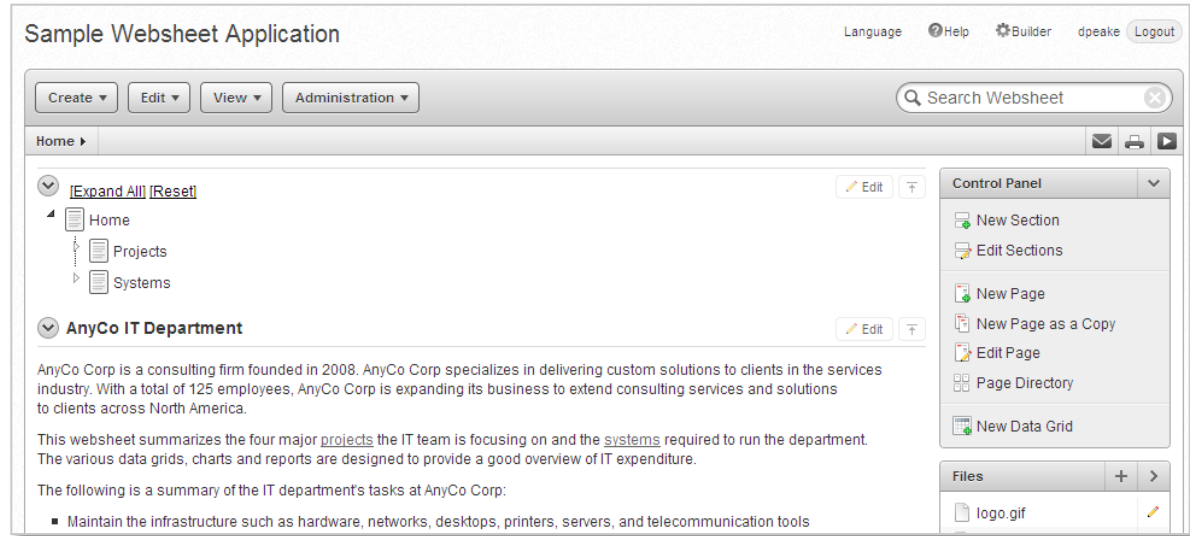
# Calendar



- Added “Drag and Drop” functionality
  - Change Date and Time of records
- Added ability to create “Edit” page as part of calendar wizard
  - “Edit” Page types of:
    - Existing page
    - Pop-up page
    - New page

# Websheet Enhancements

- Improved User Interface – offers greater control
- New Page Section Type – PL/SQL
- Query using Datagrid
- Presentation mode



# Tabular Form Validations and Processes



- Support all the same validation types as a Page Item (e.g. PL/SQL Expression, Exists, etc)
- Allow referencing of column values in Validations and Processes using Bind Variable syntax:
  - :COLUMN\_NAME
  - Built-in Bind variables -  
*APEX\$ROW\_SELECTOR*, *APEX\$ROW\_NUM* and *APEX\$ROW\_STATUS*
- Validations & Processes can be fired for each submitted row or once for the entire submission
- Advisor has been enhanced to check for valid Tabular Form columns



# Plug-In Enhancements

- Increased Number of Custom Attributes to 15
- New Attribute Type - 'Checkboxes'
- Add plug-in Support for
  - Authentication Schemes
  - Authorization Schemes
- Attribute Usability Enhancements in Application Builder



# Dynamic Action Enhancements



- Declarative support for buttons to trigger dynamic actions
  - Actions performed based on button clicks
  - Works for HTML, Image and Template based buttons
- Extend the Submit Page dynamic action to gray out the page and show a processing icon
- Improve the ability to define multiple item values within 'Set Value'

# Accessibility

- Improved Menu accessibility
- Added ability to define row headers for tabular form fields
- Added “High Contrast” mode
- Improved usability for screen reader users when dealing with validation errors
- Integrated updated version of Rich Text Editor, offering improved accessibility

# Application Translations

- Modernized the Translation user interface
- Streamlined the translation process
- Minimize the translation requirements for repeated values

# Dynamic List

- Base list on SQL or PL/SQL functions
  - Dynamically create styled list items
- Especially important for mobile based applications

# Mobile Applications



- Provide themes & HTML templates suitable for smart phones and mobile devices
  - jQuery Mobile\*
  - Dynamic List Support
  - Improved HTML out of the box
- \* We plan to bundle jQuery Mobile into a future release of Application Express

# Other New Features in 4.1

- Many Functional & Performance Improvements
- New AnyChart Flash Charts
- New CKEditor version
- New jQuery and jQuery UI versions

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# Beyond Oracle APEX 4.1...

## ➤ Proposed Future Release Features

- Enhanced themes and HTML templates to enable developers to declaratively create mobile applications and/or mobile pages.
- Incorporate HTML 5 charting capabilities.
- Declarative specification of RESTful Web services mapped to SQL and PL/SQL.
- Modal Dialogues
- Multiple Tabular Forms on one page
  - Master-Detail-Detail support
- Multiple Interactive Reports on one page



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# Hardware and Software

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# Engineered to Work Together

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