



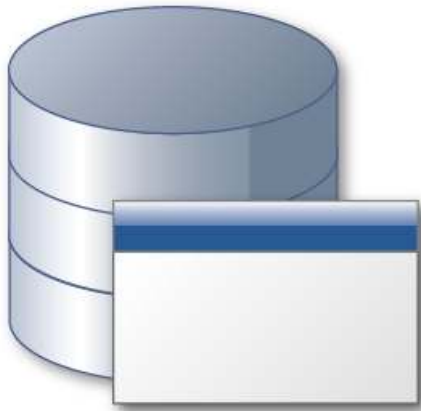
**ORACLE®**

## **Oracle Application Express (Version 3.1)**

Robert Korošec  
Oracle

# Oracle Application Express (APEX)

## Database-centric Web application development tool



- Unique Rapid Application Development (RAD) tool for the Oracle Database
- Browser based for Development, Deployment & Use
- Declaratively build professional Web 2.0 applications that are fast and secure
- Leverages full Oracle database capabilities and existing SQL & PL/SQL skills
- Standard component of the database
- Fully supported, “no-cost” option with all editions of the Oracle Database

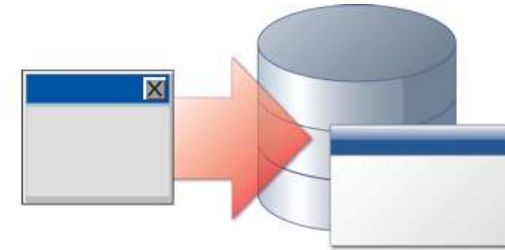
**Easy to develop • Easy to deploy • Easy to manage**

# Use Cases



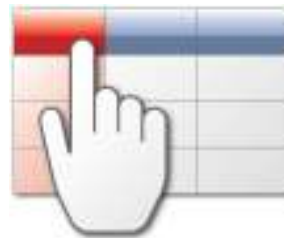
## Data-driven Applications

Develop opportunistic and departmental productivity applications



## Oracle Forms Modernization

Leverage SQL & PL/SQL declarative programming skills to move Forms applications to HTML / Web 2.0



## Online Reporting

Build SQL-based reporting applications on existing database schemas



## Spreadsheet Web-ification

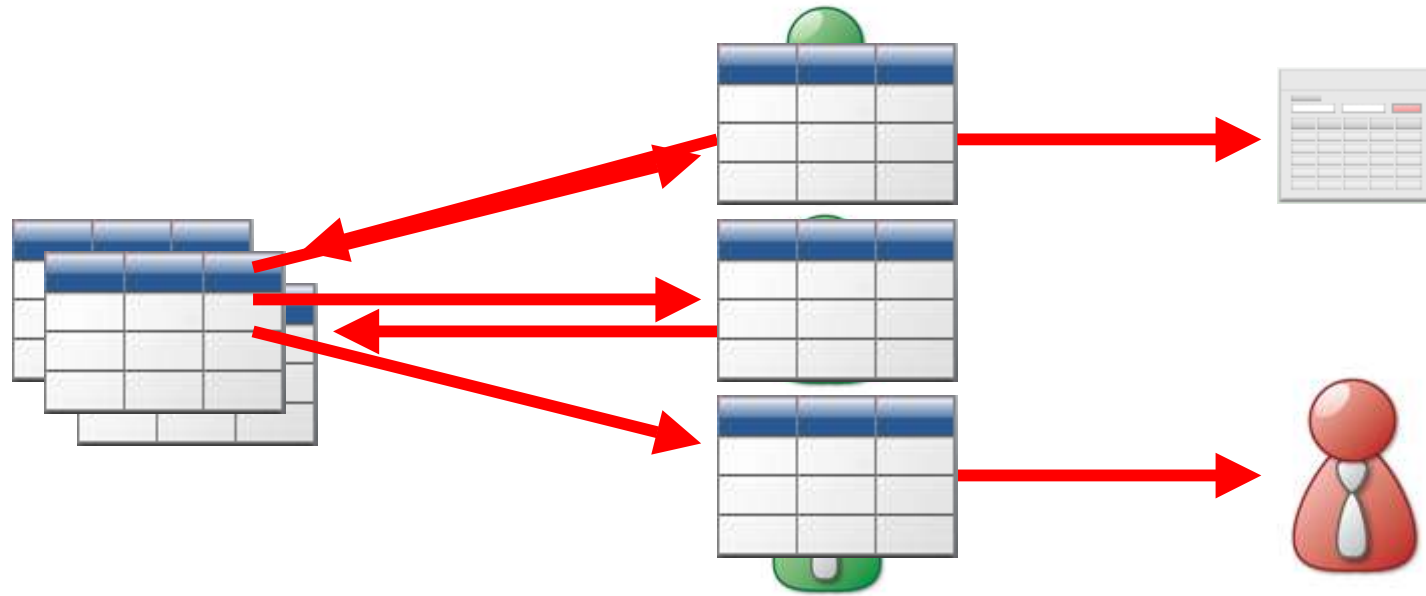
Convert spreadsheets to Web applications where they can be concurrently viewed and edited



## Access Replacement

Consolidate outgrown Access applications to the Oracle database with an APEX Web front end

# Problem: Spreadsheets



- Multiple sources of truth
- Manual collation from different sources
- Reports generated from partial truth
- No controls over who sees the information

# Oracle Application Express

## EASY to Develop

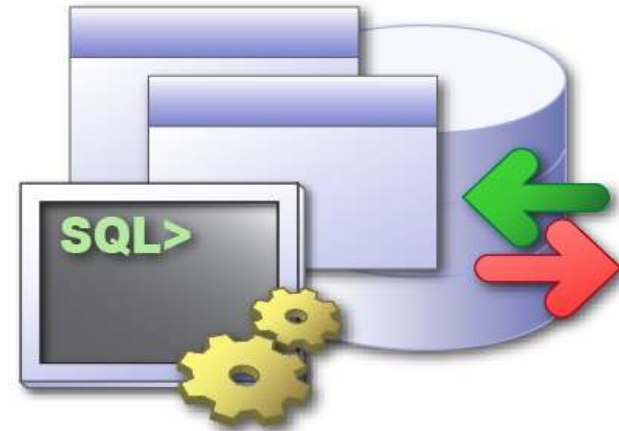
- Rapid Web application development
- Fully productive very quickly
- Declarative / Wizards

## EASY to Deploy

- No client software
- Browser based
- Feature of the Oracle Database

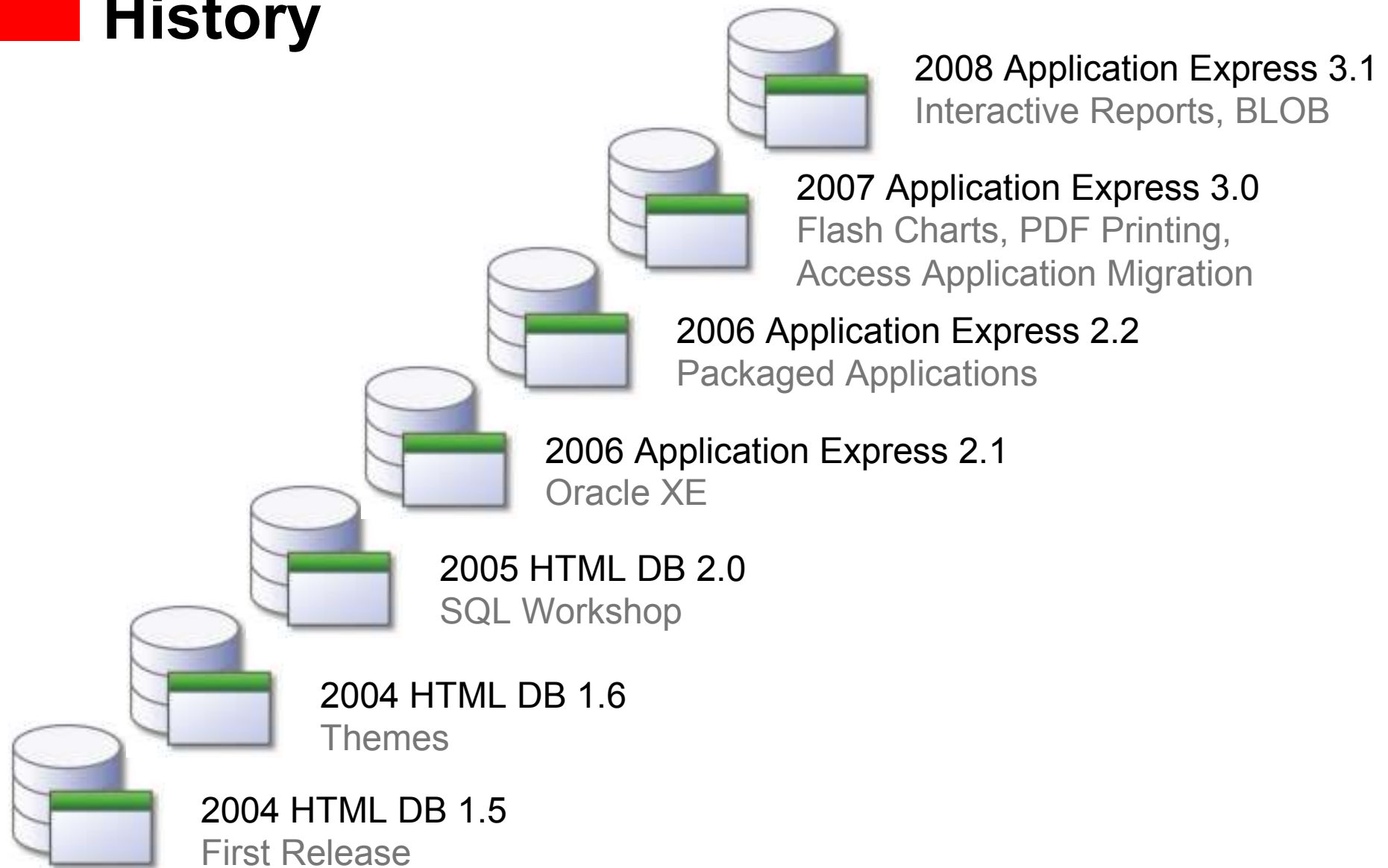
## EASY to Maintain

- Centrally managed metadata repository
- Multi-tenant hosting
- Robust framework



**No Cost Option**

# History



# Community Focus

- Strong & Supportive Community
- Popular OTN Discussion Forum
- Consulting Companies APEX Practices
- Commercial Applications
- Blogs, SIGs

ORACLE

Community Discussion Forums » Database » Application Express

Forum: Application Express

Post New Thread Watch Forum Mark All Threads as Read Back to Category

Messages: 135,479 - Threads: 26,911 - Pages: 579 - [ 1 2 3 4 5 | Next ]

Thread	Author	Views	Replies	Last Post
<a href="#">Participate in our Oracle University Certification Survey</a>	stknad			Dec 21, 2007 2:16 PM
<a href="#">Oracle Application Express 3.1 Evaluation Now Available</a>	stknad			Nov 23, 2007 7:36 PM
<a href="#">Oracle Application Express 3.0.1, now available</a>	stknad			Jun 29, 2007 6:13 AM
<a href="#">Welcome to the Oracle Application Express Discussion Forum!</a>	Sascha			Jan 31, 2006 7:51 PM
column link items	user584352	11	1	Jan 8, 2008 4:53 PM by: sspadato

Search Forum

Top Users in Forum

- sspadato (10999)
- Vikas (5959)
- Jes (3668)
- Carl Backstrom (3)
- Denes Kubicek (2341)
- Seeb (1927)

Oracle Application Express

Americas Consulting

European Consulting

Hosting Companies

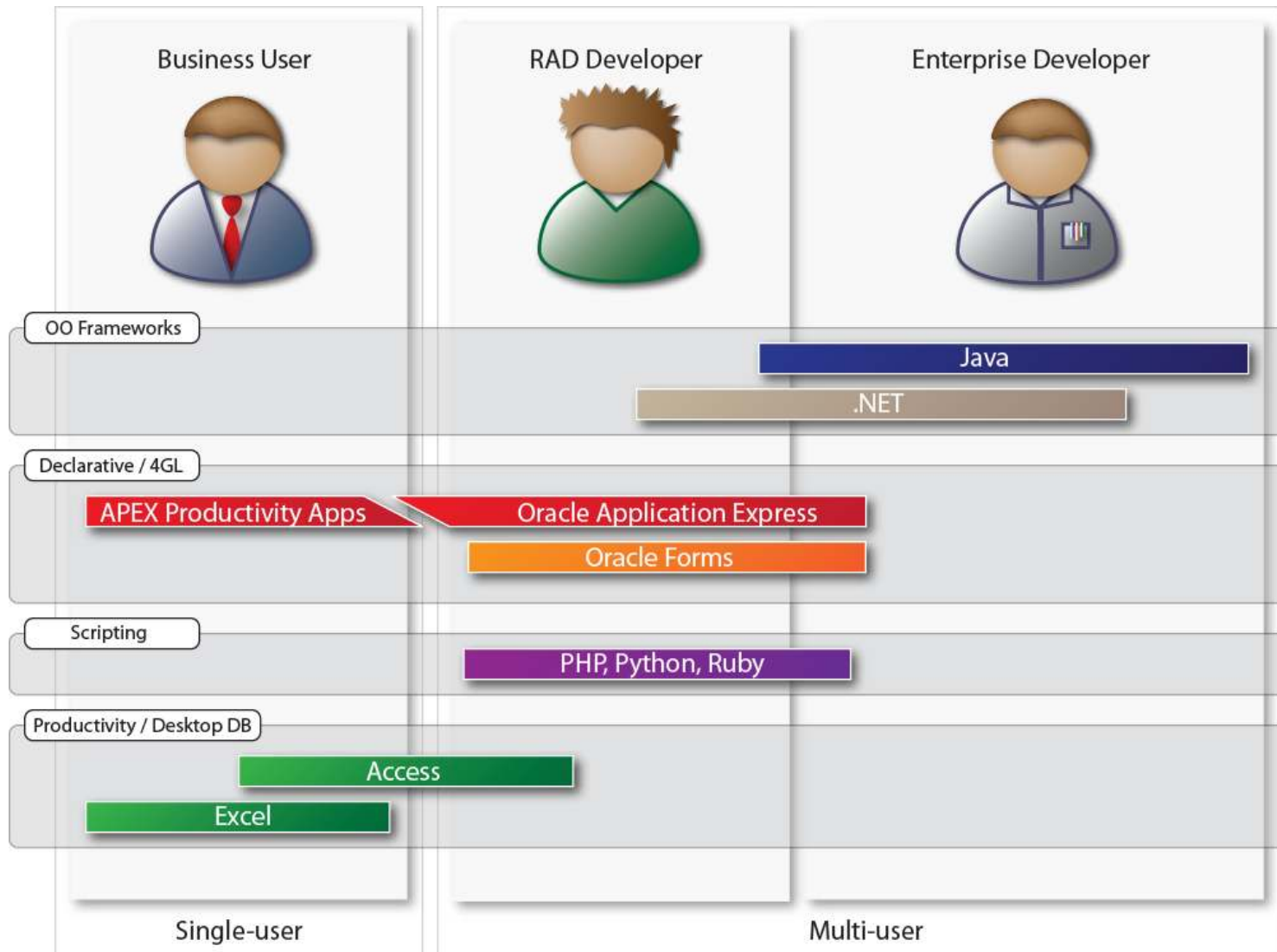
Internet Apps

Commercial Apps

BLOGs

- ◆ APEX Community
- ◆ Special Interest Groups
- ◆ Community How-Tos and Articles

# APEX – Target Development Community







# APEX Adoption

*(As of 5/22/2008)*

apex.oracle.com

2M page views/week, 14,000 workspaces, 300 new workspaces/week

## Community

17 APEX presentations at Collaborate 08

18 APEX presentations at ODTUG Kaleidoscope 2008

46 consulting companies, 7 hosting companies

21 commercial applications, 37 blogs

3rd most popular discussion forum on OTN

## Downloads

500K OTN

{ #2 DB development tool OTN download }

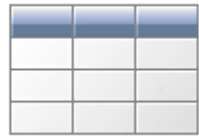
1.3M Oracle XE

60K APEX Packaged Applications

# Functionality

The screenshot displays the Oracle Application Express interface for 'Application 463 - Sample Application'. The interface includes a top navigation bar with 'Home', 'Application Builder', 'SQL Workshop', and 'Utilities'. Below this, a breadcrumb trail shows 'Home > Application Builder > Application 463'. The main content area features a row of four large icons: 'Run Application' (traffic light), 'Supporting Objects' (3D bar chart), 'Shared Components' (compass and pencil), and 'Export / Import' (two arrows). Below these is a search bar with 'Page' and 'View Icons' options, and a 'Create Page >' button. The main workspace contains ten smaller icons representing different pages: '1 - Sample Application', '2 - Customers', '3 - Add/Modify Customers', '4 - Orders', '5 - Cluster Bar', '6 - Add/Modify Products', '7 - Products', '8 - Manage Users', '9 - Enter New Order', and '10 - Calendar'. Yellow callout boxes point to various features: 'Build Applications' points to the 'Application Builder' tab; 'Browse and create database objects' points to the 'SQL Workshop' tab; 'Load Data' points to the 'Utilities' tab; 'Deploy Applications' points to the 'Export / Import' icon; 'Flash Charting' points to the 'Cluster Bar' icon; 'Reporting & Publishing' points to the 'Cluster Bar' icon; 'Data Entry Forms' points to the 'Add/Modify Products' icon; 'Interactive Reports' points to the 'Products' icon; 'Tabular Forms' points to the 'Manage Users' icon; 'Navigation' points to the 'Enter New Order' icon; and 'Calendar' points to the 'Calendar' icon.

# Out of the Box Development Features



Reports



Validations



Translation Services



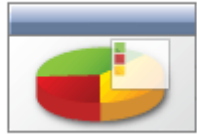
Forms



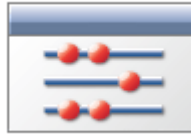
Processes



Conditional Processing



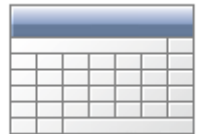
Charts



Computations



Authentication



Calendar



Branches



Authorization



Templates



Web Services



Session State Management



Navigation



Email Services



Logging & Monitoring

# Data Entry Forms

The screenshot shows a web-based form titled "Create/Edit Employee" with a "Cancel" and "Create" button. The form contains the following fields:

- First Name: Peter
- Last Name: Chen
- Email: peter.chen@anycorp.com
- Phone Number: 555-1240-5353
- Hire Date: (empty, with a calendar icon)
- Job Id: Accountant
- Salary: 100000
- Commission Pct: 5
- Manager Id: Steven King
- Department Id: Accounting

A pop-up calendar window is open, showing the month of January 2007. The calendar grid is as follows:

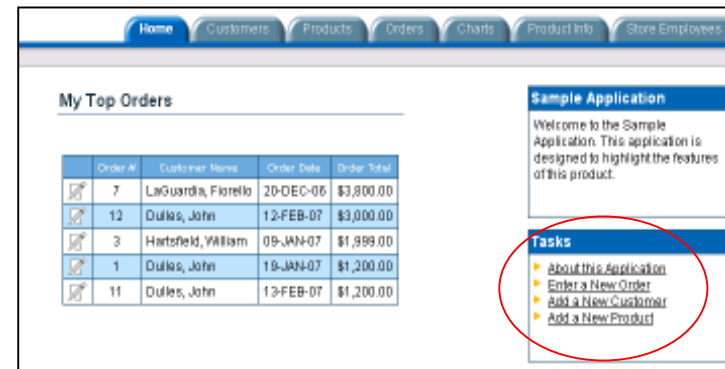
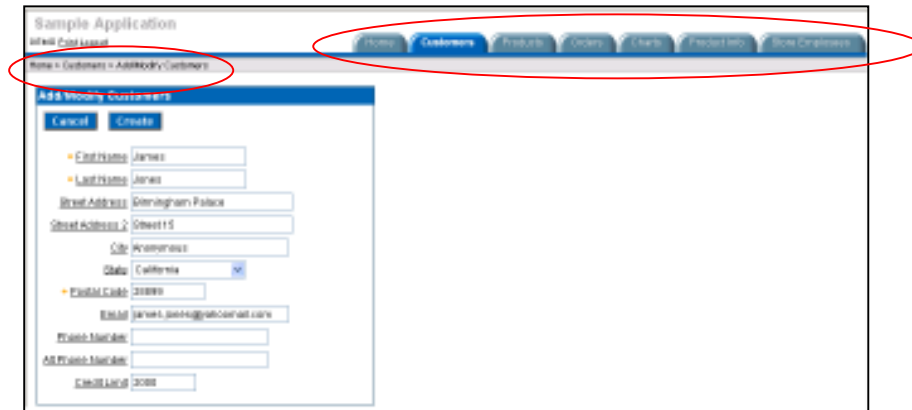
Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

The calendar window has a "Close" button at the bottom.

- Feature Rich
  - Built in widgets available
    - Pop-Up calendar
    - List of values
  - Enable Validations on Form Fields
  - Lost update detection
- Variety of Form Types
  - Tabular forms
  - Master Detail forms
  - Forms on a Web Service
  - Form on a Table with Report

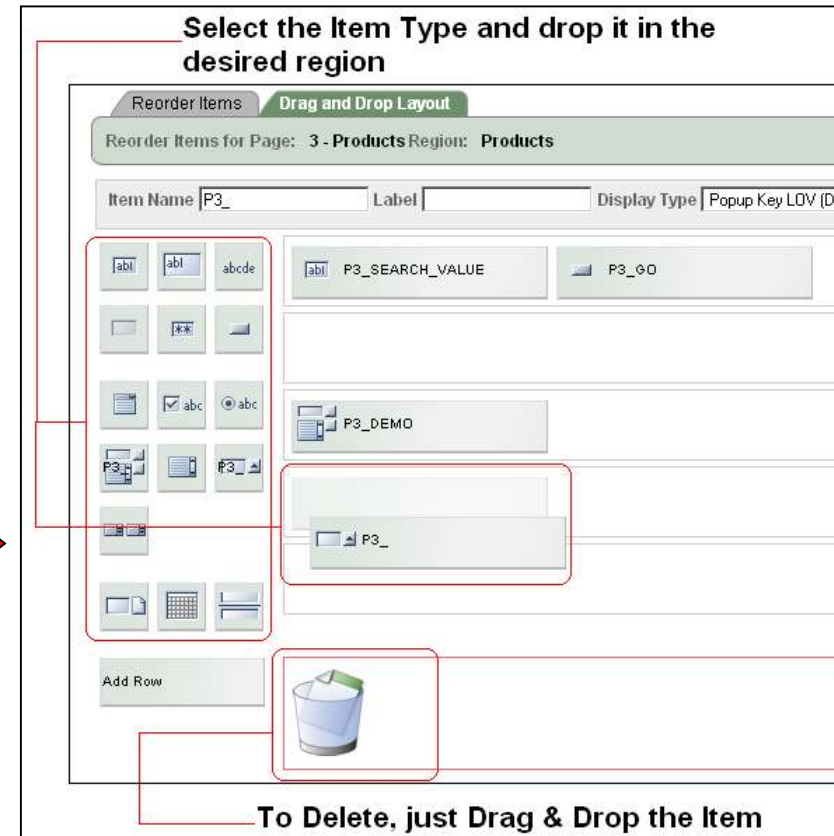
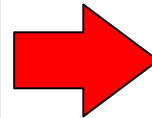
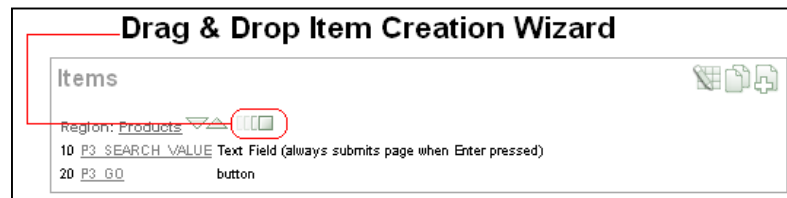
# Navigation

- Tabs
- Lists
- Navigation Bar
- Trees
- Navigation Using Branches



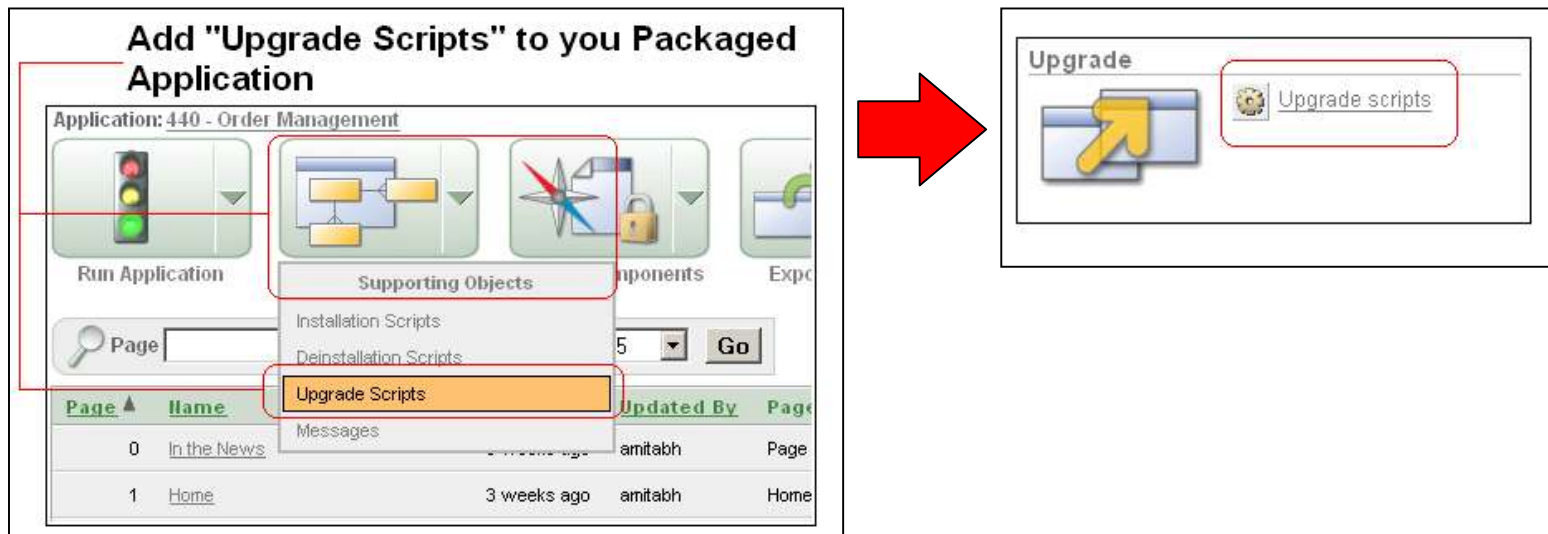
# Drag & Drop Item Creation

- Quickly create and Delete items
- Reorder and place items
- Change selected item attributes



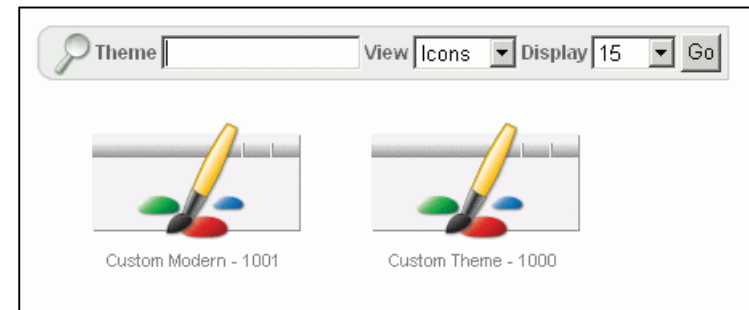
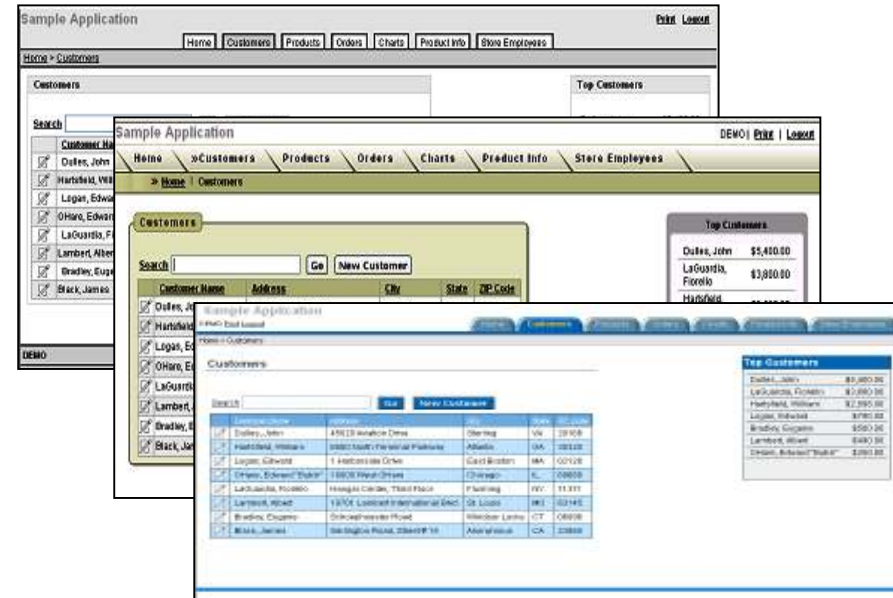
# Supporting Objects Enhancement

- **Add Upgrade Scripts**
  - Provide Upgrade patches to your packaged applications



# Look and feel

- Consistent User Interface
- Template driven
- Customize with HTML and CSS
- Easily Switch Themes
- Ability to define Custom Themes and make them available across Workspaces *NEW*






# Reports

Department Id	Department Name	Number Of Employees	Manager Name	Location
110	Accounting	<u>2</u>	S. Higgins	United States of America
10	Administration	<u>1</u>	J. Whalen	United States of America
40	Human Resources	<u>1</u>	S. Mavris	United Kingdom
80	Sales	<u>34</u>	J. Russell	United Kingdom
90	Executive	<u>3</u>	S. King	United States of America
70	Public Relations	<u>1</u>	H. Baer	Germany
20	Marketing	<u>2</u>	M. Hartstein	Canada
100	Finance	<u>6</u>	N. Greenberg	United States of America
30	Purchasing	<u>6</u>	D. Raphaely	United States of America
60	IT	<u>5</u>	A. Hunold	United States of America

CSV | PDF

row(s) 1 - 10 of 11  

- Control Layout and Pagination
- Enable Column sorting
- Export content to CSV or XML
- Associate Print Attributes
- Drill down to other reports, charts, forms
- Apply “Authorization Schemes”
- Allow external processing via a URL

# Declarative PDF Reporting Services

- Select Report Document Formats

Employees Report with PDF Printing Enabled

Employees Report with PDF Download Link

Search  Display

Name	First Name	Last Name	Salary	Annual Salary	Fed Withhold
Kevin Mourgos	Kevin	Mourgos	5800	69600	1946
Shanta Vollman	Shanta	Vollman	6500	78000	2184
Payam Kauffling	Payam	Kauffling	7900	94800	2634
Matthew Weiss	Matthew	Weiss	8000	96000	2688
Adam Fripp	Adam	Fripp	8200	98400	2736
Eleni Zlotkey	Eleni	Zlotkey	10500	126000	3528
Den Raphaely	Den	Raphaely	11000	132000	3696
Gerald Cambraut	Gerald	Cambraut	11000	132000	3696
Alberto Errazuriz	Alberto	Errazuriz	12000	144000	4032
Nancy Greenberg	Nancy	Greenberg	12000	144000	4032
Shelley Higgins	Shelley	Higgins	12000	144000	4032
Michael Hartstein	Michael	Hartstein	13000	156000	4368
Karen Partners	Karen	Partners	13500	162000	4536
John Russell	John	Russell	14000	168000	4704

Spread Sheet

Adobe Reader - [Employees\_Report-2.pdf]

First Name	Last Name	Salary
Kevin	Mourgos	5800
Shanta	Vollman	6500
Payam	Kauffling	7900
Matthew	Weiss	8000
Adam	Fripp	8200
Eleni	Zlotkey	10500
Den	Raphaely	11000
Gerald	Cambraut	11000
Alberto	Errazuriz	12000
Nancy	Greenberg	12000
Shelley	Higgins	12000
Michael	Hartstein	13000
Karen	Partners	13500
John	Russell	14000

# Interactive Reports

- Out of the box declarative Web 2.0 reporting
- Dramatically enhances end-user capabilities

The screenshot displays an Oracle Interactive Report interface. On the left, a scrollable list of employee names is shown. The main area contains a table with columns for First Name, Last Name, Job Title, Email, and Salary. The table is filtered by Department (Accounting, Administration, Executive) and Salary. A sidebar on the right provides interactive tools such as Select Columns, Filter, Sort, Control Break, Highlight, Compute, Aggregate, Chart, Flashback, Save Report, Reset, Help, and Download. A detailed view of a specific employee record is shown at the bottom left.

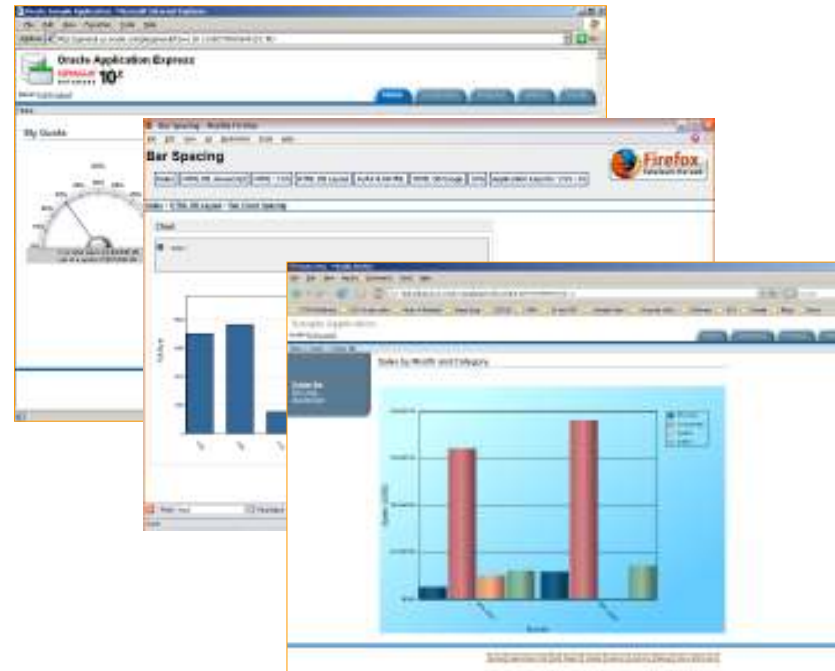
First Name	Last Name	Job Title	Email	Salary
Shelley	Higgins	Accounting Manager	SHIGGINS	\$12,000.00
William	Gietz	Public Accountant	WGIETZ	\$8,300.00
				<b>Sum: \$20,300.00</b>
Department : Administration				
First Name	Last Name	Job Title	Email	Salary
Jennifer	Whalen	Administration Assistant	JWHALEN	\$4,400.00
				<b>Sum: \$4,400.00</b>
Department : Executive				
First Name	Last Name	Job Title	Email	Salary
De Haan	Administration Vice President	LDEHAAN	\$17,000.00	
Kochhar	Administration Vice President	NKOCHHAR	\$17,000.00	
King	President	SKING	\$24,000.00	
				<b>Sum: \$58,000.00</b>

**Employee Details:**

- First Name: Neena
- Last Name: Kochhar
- Email: NKOCHHAR
- Phone Number: 515.123.4568
- Hire Date: 21-SEP-1989
- Salary: \$17,000.00
- Department: Executive
- Job Title: Administration Vice President
- Commission:

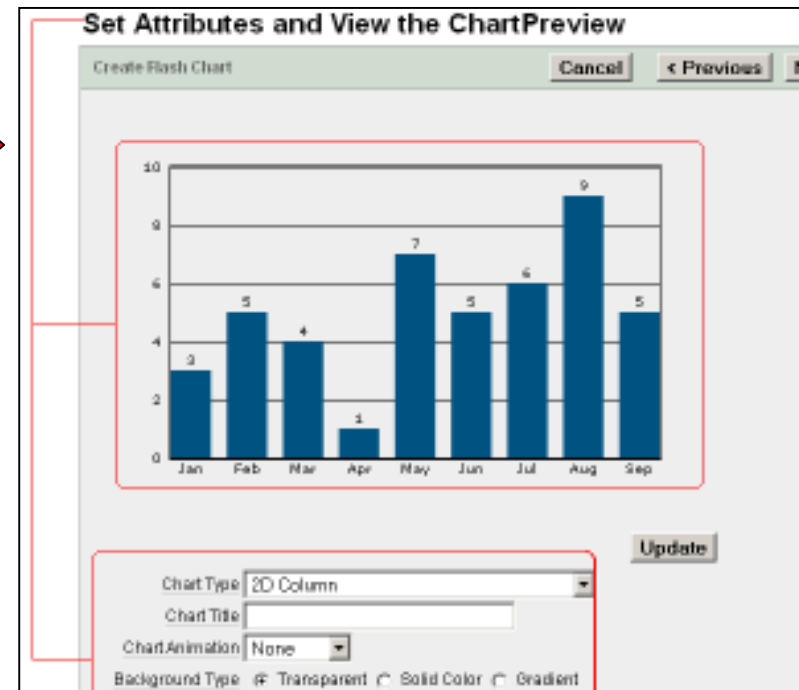
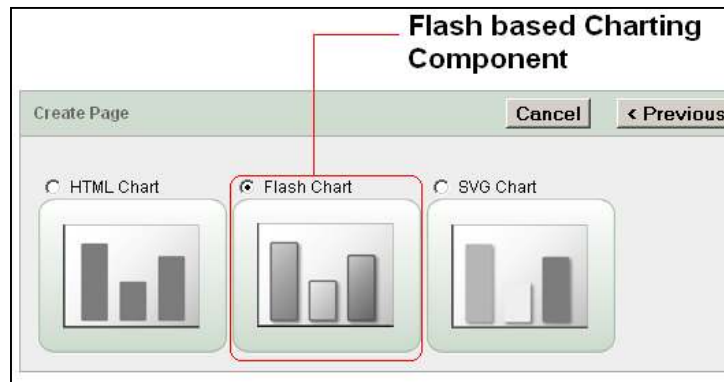
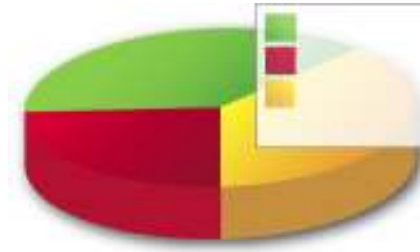
# Charts

- SVG charts
- HTML charts
- Flash charts

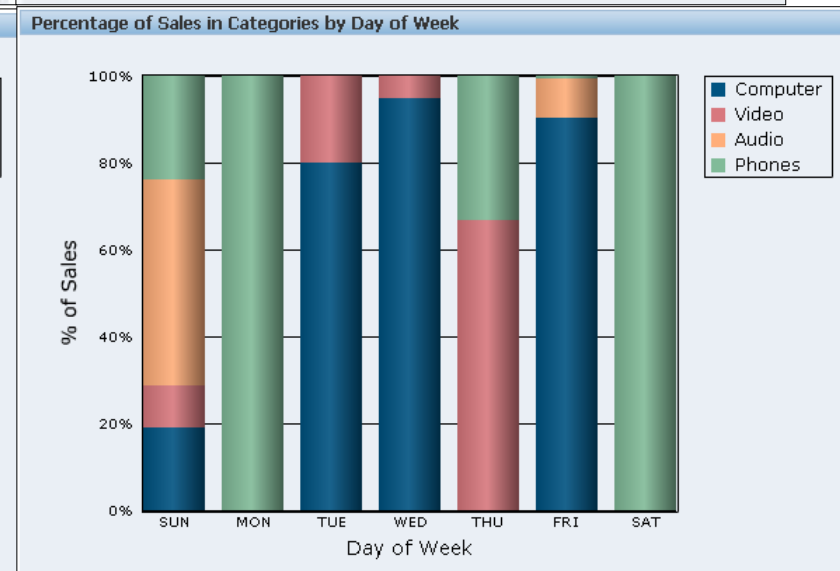
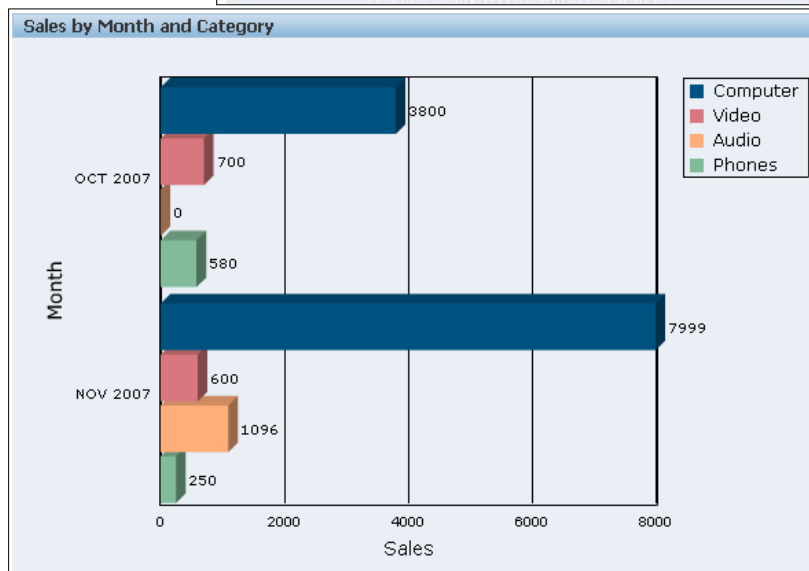
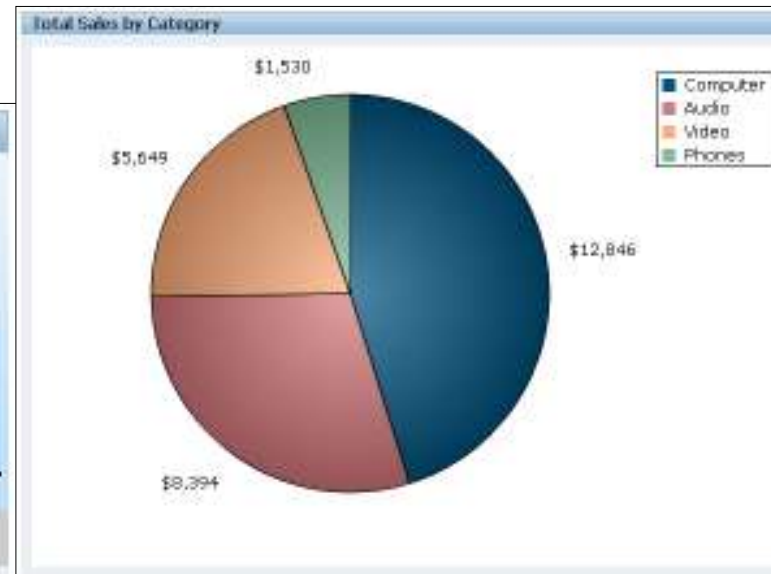


# Flash Charts

- 18 New Chart Types
- Migrate existing SVG Charts



# Charts

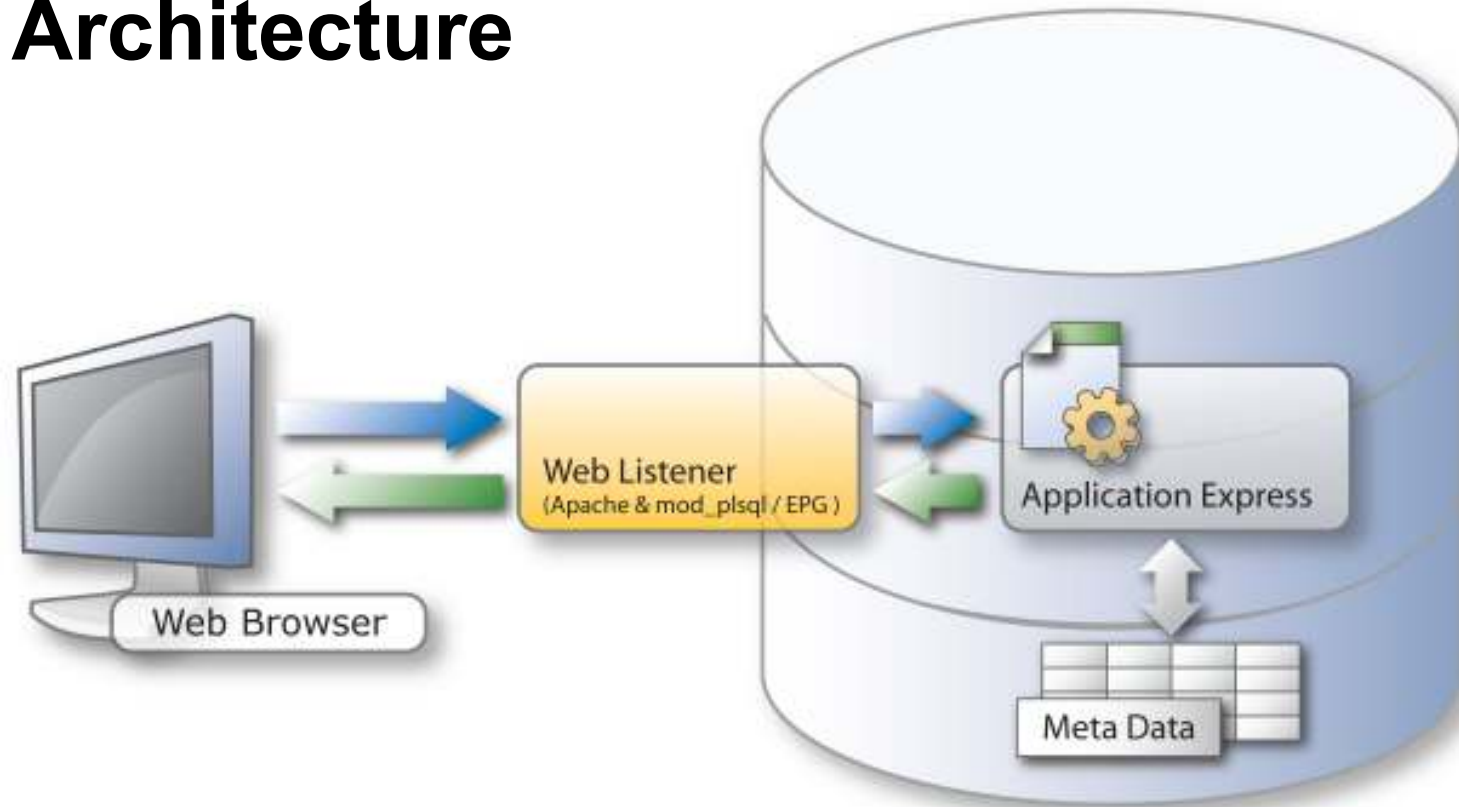




# Security

- Built in authentication modules
  - LDAP
  - Single Sign-On
  - Open Door Credentials
  - Oracle Application Express Account Credentials
  - Database Account Credentials
  - No Authentication (using DAD)
- Centrally defined authorization rules
- Session state protection
- Integration with database security features
  - FGAC
  - Transparent Data Encryption

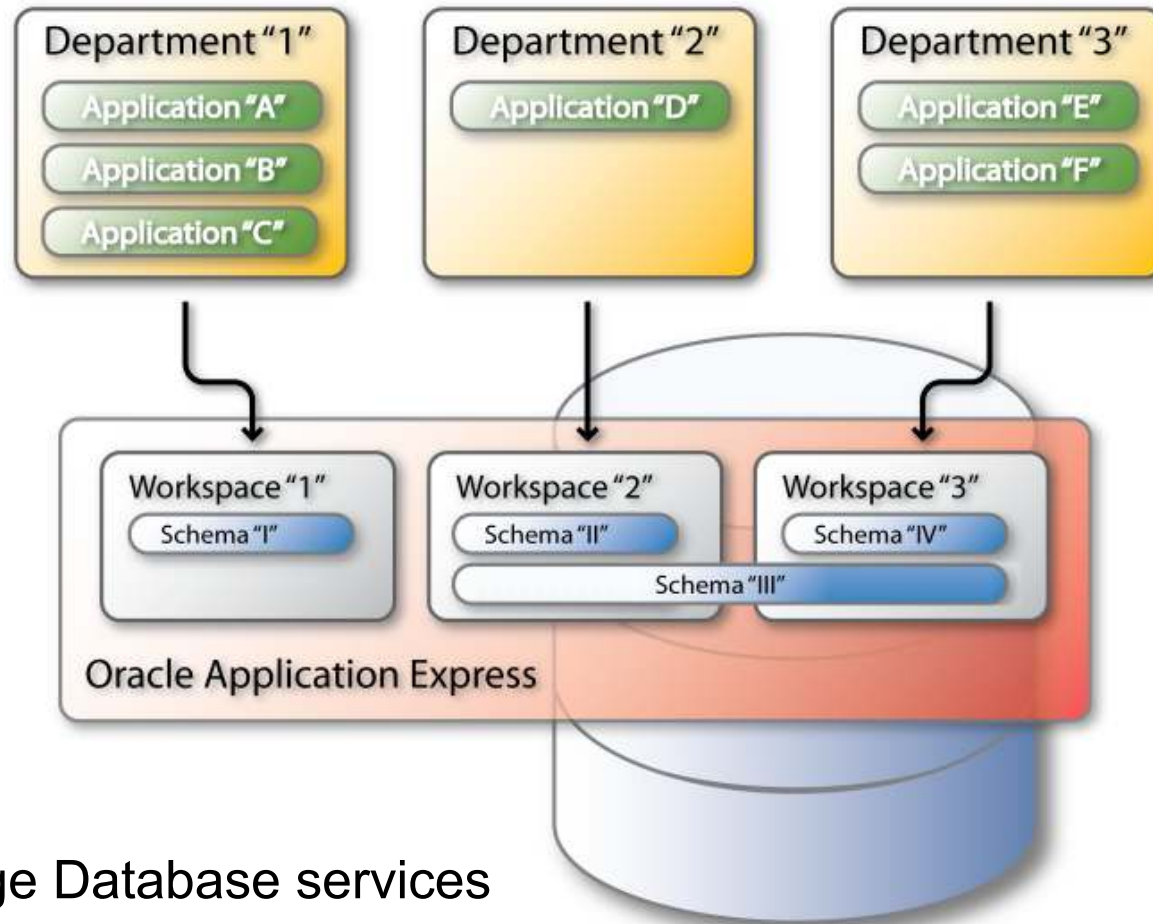
# Architecture



- Integrated within the database 9iR2, 10g, 11g and XE
- Supports all Oracle DB operating systems
- Uses Embedded PL/SQL Gateway or Apache with mod\_plsql
- Metadata driven



# Multi-Tenant Hosting



- Allows IT to manage Database services
- Self-service provisioning of workspaces
- Example: Free hosted development service at <http://apex.oracle.com>

# Deployment Options

Multi-tenant and browser based architecture allows for deployment anywhere



**Hosted Service**  
(dedicated or multi-tenant)



**Corporate IT / Enterprise Service**  
(dedicated or multi-tenant)

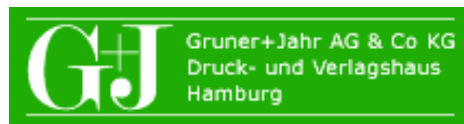
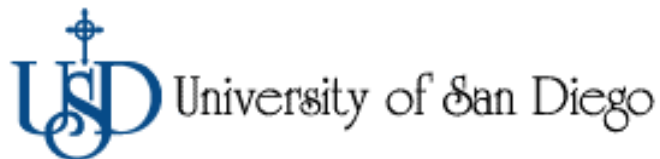


**Departmental Server**



**Local Database**  
(Oracle XE)

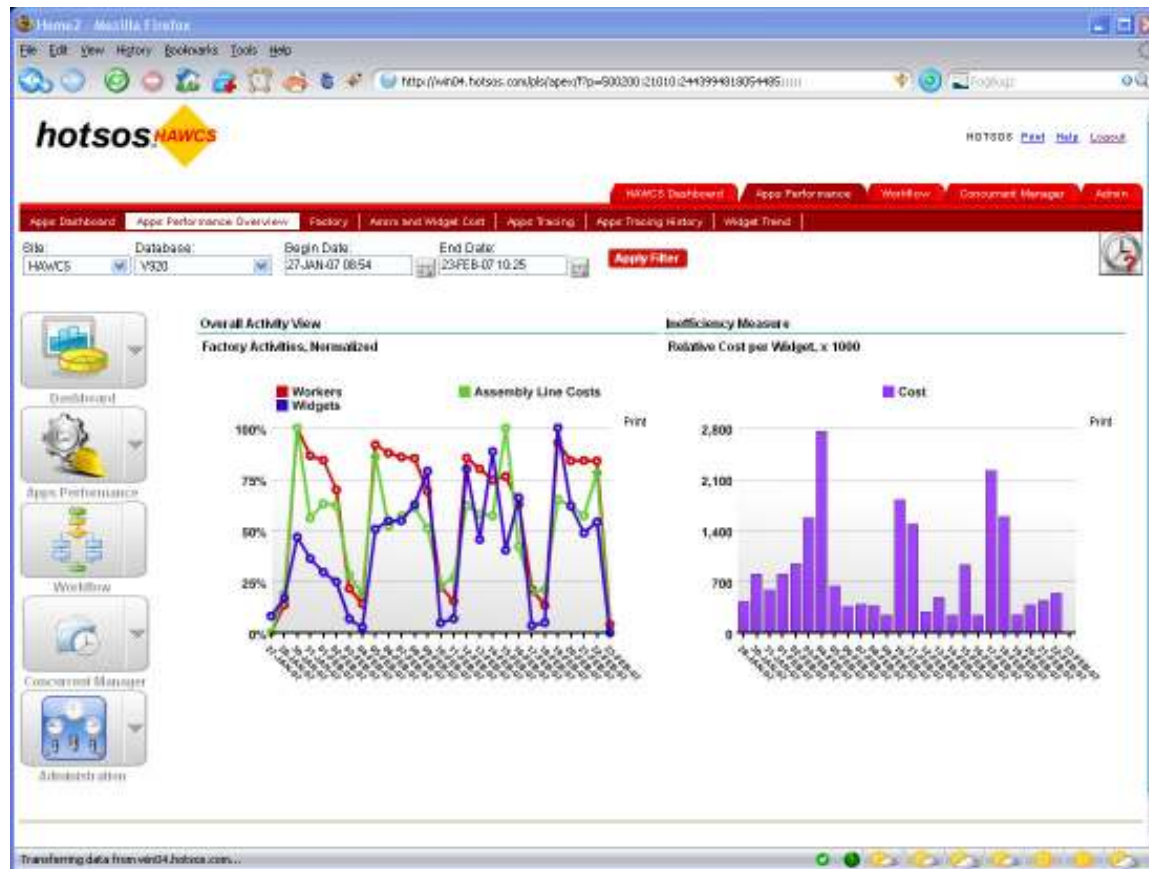
# Application Express - Customers



# Overview of Commercial Applications

- Doug Gault, Hotsos

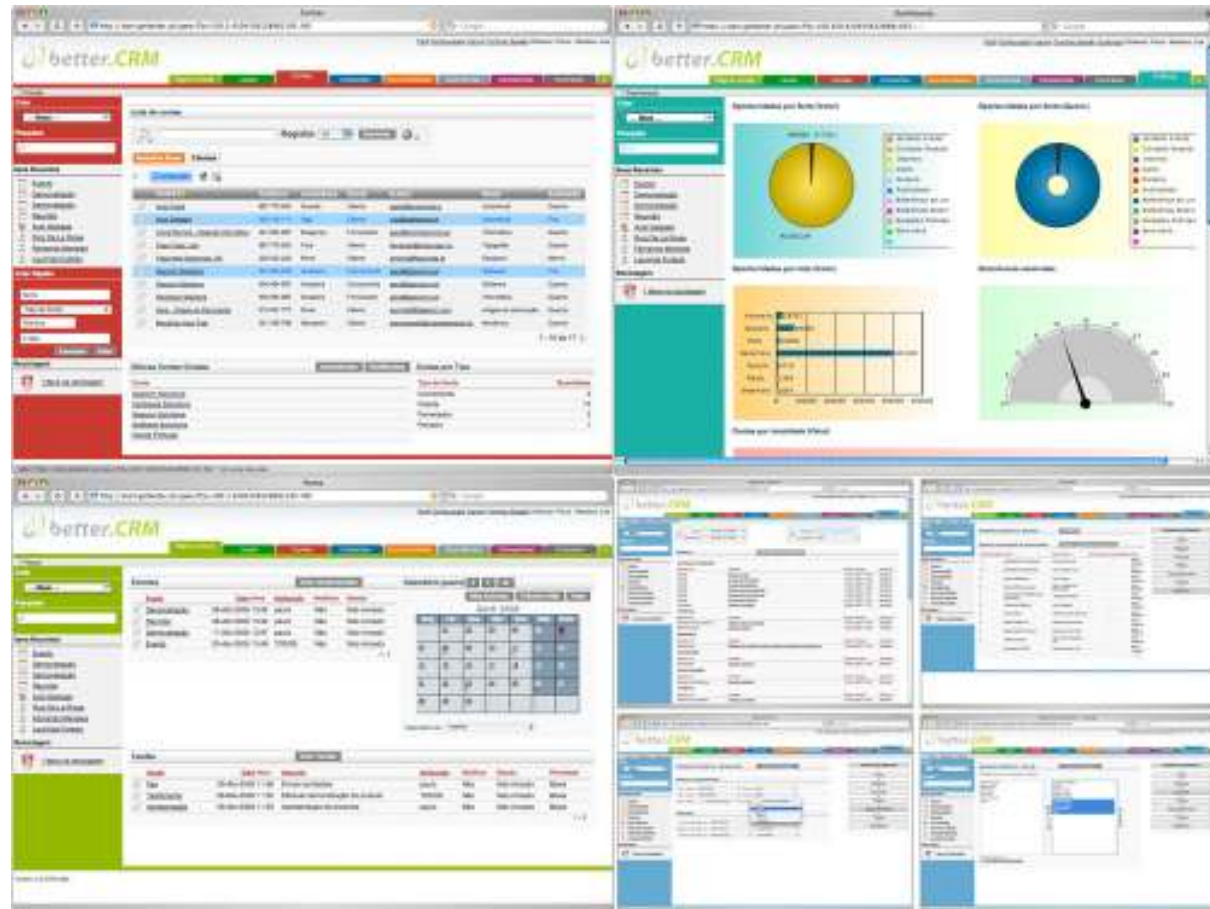
*Hotsos Application Workload Characterization Solution (HAWCS)*



# Overview of Commercial Applications

- Paulo Vale, Neoface

*BetterCRM,  
BetterTASKS*

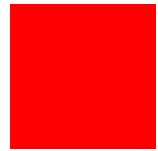




# Oracle Technology Network (OTN)

- Download latest Release
- Getting Started
- Documentation & Tutorials
- Hosted Environment
- Oracle By Examples
- Community & Partners

The screenshot displays the Oracle Technology Network (OTN) website interface, specifically the Oracle Application Express (APEX) section. The page features a navigation menu with categories like 'Getting Started', 'Downloads', 'Documentation', 'Forums', 'Articles', 'Sample Code', and 'Tutorials'. The main content area is titled 'Oracle Application Express' and includes a 'FREE DOWNLOAD' button for the Oracle Application Express software. Below this, there are several news items and links, such as 'What is Oracle APEX?', '3.0 New Features', 'Packaged Applications', 'Community and Partners', 'Oracle by Example (OBE)', and 'Oracle Magazine Articles'. A 'News' section at the bottom lists recent updates, including 'GCN, Army Corps ready to build on Oracle 11g (and Oracle APEX too)' and 'OTN, A Practical Demonstration of SaaS using Oracle Application Express'. The page also includes a search bar, a 'SELECT COUNTRY' dropdown, and a 'Related Technologies' section at the bottom right.



# Conclusion

Easy to Develop

Easy to Deploy

Easy to Manage



## Next Steps

Information:

<http://otn.oracle.com/apex>

Hosted Development:

<http://apex.oracle.com>





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