NYC Metro Area Oracle Users Group

Using Application Express with Fusion Middleware

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Oct 2, 2007
Agenda

- Introduction
- Oracle Application Express (APEX)
- Oracle Fusion Middleware
- Oracle BI Publisher
- APEX-BI Publisher Integration
- Oracle BPEL Process Manager
- APEX-BPEL PM Integration
- Q&A
Oracle Application Express

- Formerly called HTML DB
- Rapid web application development tool for the Oracle database
- Uses only a web browser
- With limited programming experience, you can develop and deploy professional applications that are both fast and secure
- Tool to build web-based applications and the application development environment is also conveniently web-based
- No client software is required to develop, deploy, or run applications
Oracle Application Express

- Three primary tools:
  - Application Builder - to create dynamic database driven web applications
  - SQL Workshop - to browse your database objects, run ad-hoc SQL queries, as well as a graphical query builder
  - Utilities - allows for data to be loaded and unloaded from both flat files and spreadsheets
Demo
Reporting - Business Requirements

- Rich Formatted Reports
- Partner Reports
- Financial Statements
- Government forms
- Marketing materials
- Contracts
- Checks
- Labels
- XML / EFT / EDI
- Multiple destinations
Reporting - Challenges

• No one system can do that
• 3rd party software and many servers required to satisfy business requirements

✔ High Cost
✔ Complex systems

• You pay more for maintenance
• Highly skilled engineers required to maintain the 3rd party software servers

✔ High Cost
✔ Complex systems
✔ Expensive maintenance
✔ Labor Intensive

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Solution - Remove Complexity, Reduce Cost

- Utilizing Oracle BI Publisher
- Integrated Publishing Solution

- Meet Business Requirements
- Rapid Deployment
- Reduce Total Cost
- Reduce Maintenance Cost
Oracle BI Publisher

Data Handling
- SQL
- XML
- Service Beans
- Web Services

Data Transformation
- XML
- XSL
- XLIFF

Template Management
- Template Manager

Document Delivery
- PDF
- Word
- Excel
- More...

Translation
- Translation Handler
- Translation Catalogs

Delivery
- Printer
- FAX
- Email
- WebDAV
- More...
BI Publisher Integration

Courtesy: Oracle Corporation
BI Publisher Integration – Setup

• To integrate Application Express to BI Publisher, you need:
  – Access to APEX Admin pages
  – BI Publisher server name & port
BI Publisher Integration – Setup

- Select Manage Service and then choose Instance Settings:
BI Publisher Integration – Setup

- Select the Report Printing section:

![Oracle Application Express](image-url)
BI Publisher Integration – Setup

- Enter the host & port values
- Enter /xmlpserver/convert for Printer Server Script

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- Verify values and Apply Changes
BI Publisher Integration – Report Creation

• Now login to Application Express
• Select Application Builder
BI Publisher Integration – Report Creation

• In your application, select Shared Components:

• And choose Report Queries:
BI Publisher Integration – Report Creation

• Create your query & test it:

ORACLE Application Express

Home > Application Builder > Application 101 > Shared Components > Report Queries > Create Report Query

Query

Test Query

Include Session State

Download XML

Confirm

Create Report Query

Name: Customers

SQL Query:

SELECT * FROM DEMO_CUSTOMERS

Query Builder

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BI Publisher Integration – Report Creation

- Select a layout for your query:

  **ORACLE** Application Express

  Home > Application Builder > Application 101 > Shared Components > Report Queries > Create Report Query

  **Create Report Query Layout**

  Report Layout: Use generic report layout

  **Step 1 - Download XML file**

  XML Structure: Standard

  Download XML

  **Step 2 - Upload XSL-FO file**

  Layout Name: Customers

  Browse...
BI Publisher Integration – Report Creation

- Choose and output format and Test Report:

- Save the query by clicking Finish
BI Publisher Integration – Report Creation

- The URL provided can be used to integrate the report:

```
10/02/2007
```
Business Process Execution Language: Markup language for composing a set of discrete services into an end-to-end process flow

- 10+ years of R&D from MSFT and IBM
- SOAP but also Java, JCA
- Rich Flow Semantics
- Optimized Bindings
- XPATH+XSLT+XQuery
- WS-Security
- A Process is a Service
Oracle BPEL PM

• Comprehensive and native BPEL implementation
• Easy-to-use modeling tool
• Scalable and reliable engine
• Flexible binding framework
• Rich management and monitoring
• Support for Oracle AS, WebLogic and WebSphere
• Get up and running in less than 15 minutes!
Oracle BPEL PM

The Orchestrator

PORTAL

J2EE

TOMCAT

Web Service

Java Service

Database

Stored Procedures

ERP

Oracle, SAP, etc.

User Tasks

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BPEL Integration – Setup

- First identify and deploy the BPEL process that you wish to integrate with APEX.
BPEL Integration – Setup

- For example, add the CreditRatingService.jpr file to your application from the `ORACLE_HOME\bpel\samples\utils\CreditRatingService` folder.

- Right click on the project name and deploy it to the default domain.
BPEL Integration – Setup

• Next, open the BPELConsole and click on the deployed CreditRatingService process link
BPEL Integration – Setup

- Copy the WSDL location of this BPEL process (this is required to setup APEX)

![BPEL Control Interface]

When deployed, BPEL Processes are automatically published as Web Services so that they can be consumed by Visual Basic applications, Excel spreadsheets or J2EE applications.

**WSDL location:**
http://lap00:9700/orabpel/default/CreditRatingService/1.0/CreditRatingService?wsdl

**Endpoint location:**
http://lap00:9700/orabpel/default/CreditRatingService/1.0
BPEL Integration – Setup

- To integrate Application Express to BPEL, you need to setup Web Service References
- Now login to Application Express
- Select Application Builder
BPEL Integration – Setup

- In your application, select Shared Components:

![Oracle Application Express](image)

- And choose Web Service References:
BPEL Integration – Setup

- Next, click on the Create button to create a new Web Service Reference
- Select No on the Search UDDI? step
BPEL Integration – Setup

- Next, paste the WSDL location that was copied from the BPEL Console

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**Oracle Application Express**

Home > Application Builder > Application 101 > Shared Components > Web Service References > Create Web Service Reference

Search UDDI?  
Choose Model  
WSDL Location  
Web Service Details  
Success

Create Web Service Reference  
Cancel  
< Previous  
Next >  
Finish

WSDL Location: http://lap00-9700/orahpel/default/CreditRatingService/1.0/

Authentication

Username: 
Password:
BPEL Integration – Setup

- Verify Web Service Details on the next step and click Create Reference to complete the setup

**Oracle Application Express**

![Image of Oracle Application Express interface]

<table>
<thead>
<tr>
<th>Web Service Details</th>
<th>Cancel</th>
<th>&lt; Previous</th>
<th>Create Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Service Name</td>
<td>CreditRatingService</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOAP URL Endpoint</td>
<td><a href="http://lap00:9700/orsbpel/default/CreditRatingService/1.0">http://lap00:9700/orsbpel/default/CreditRatingService/1.0</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOAP Style</td>
<td>document</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Authentication</td>
<td>Yes  No</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Operations**

- **Operation Name**: process

- **Input Parameters**

- **Output Parameters**
BPEL Integration – Form Creation

- Now select Create Form on Web Service
BPEL Integration – Form Creation

- Choose the Web Service Reference from the drop-down list, select the appropriate Operation and click Next.
BPEL Integration – Form Creation

- Change Page Number or Name (if desired) and click Next

**Oracle Application Express**

Home > Application Builder > Application 101 > Page 1 > Create Page > Form on Web Service

Choose Service and Operation

- Page and Region Attributes
- Input Items
- Output Items
- Tabs
- Confirm
- Success

Identify Page and Region Attributes

Use this page to specify page and region information.

If the page you specify does not exist, the wizard creates the page for you.

Web Service Reference: CreditRatingService

- Operation: process
- Page Number: 2
- Page Name: CreditRatingService
- Region Title: process
- Region Template: Form Region
- Breadcrumb: - do not use breadcrumbs on page -

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BPEL Integration – Form Creation

- Select the Input Items and click Next
BPEL Integration – Form Creation

- Select the Output Items and click Next
BPEL Integration – Form Creation

- Optionally, select a Tab Set, enter a New Tab Label and click Next.
Verify all selections and click Create Form to complete creation of a new form based on the Web Service Reference.
BPEL Integration – Form Creation

- Now, test the newly created page by clicking on Run Page
The following page will be displayed, prompting for a Social Security Number to be entered.
BPEL Integration – Form Creation

- Type in a number and click Submit

```plaintext
process

SSN 1234567890
Rating

Submit
```
BPEL Integration – Form Creation

- The page will invoke the CreditRatingService BPEL process and display the rating value returned by the process.

<table>
<thead>
<tr>
<th>process</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSN</td>
</tr>
<tr>
<td>Rating</td>
</tr>
</tbody>
</table>
BPEL Integration

Demo
Summary

• Oracle Application Express (APEX) is a web-based, rapid application development tool that leverages the Oracle database to build web-based applications

• Oracle BI Publisher is an Integrated Publishing Solution that address business reporting and publishing requirements by enabling rapid deployment at a significantly reduced cost

• Oracle BPEL Process Manager offers a comprehensive and easy-to-use infrastructure for creating, deploying and managing BPEL end-to-end business processes

• Oracle BI Publisher and Oracle BPEL Process Manager, both components of Oracle Fusion Middleware, seamlessly integrate with Oracle Application Express
About Innowave Technology

- Technology Consulting Firm founded in 2005
- Provide unique, innovative solutions using Oracle Technology and Applications
- Expertise includes: Fusion Middleware, BPEL & Web services, BAM, Business Intelligence, Portal, Identity Management
- Implement, upgrade, and enhance Oracle E-Business Suite, PeopleSoft, JD Edwards, and Siebel Applications
- Extensive experience understanding business needs and positioning value-added FMW solutions
- Expertise managing global and local implementations across various industry verticals
- Provide clients with proven methodologies, tools, and templates specifically tailored to their requirements
- Oracle Partner & Fusion Council Steering Committee Member
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