



NYC Metro Area Oracle Users Group

Using Application Express with Fusion Middleware

Basheer Khan

Oct 2, 2007

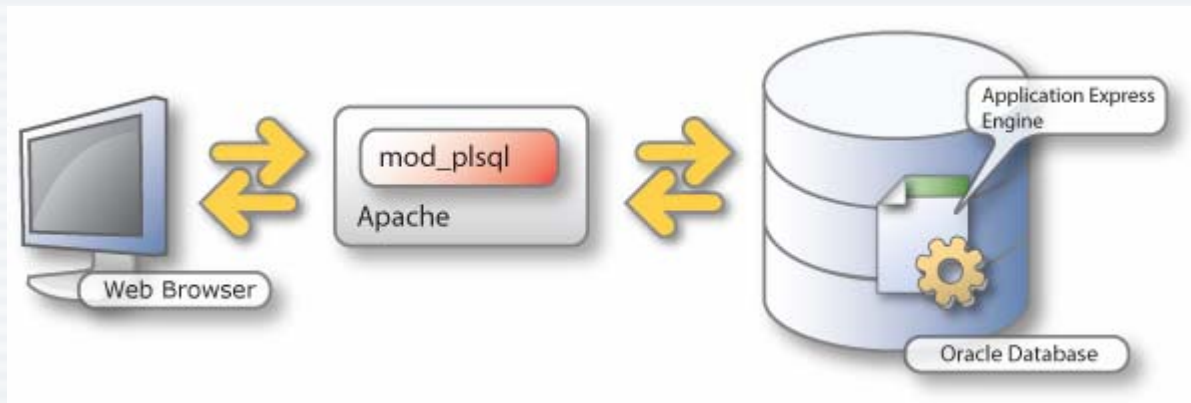


Agenda

- 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

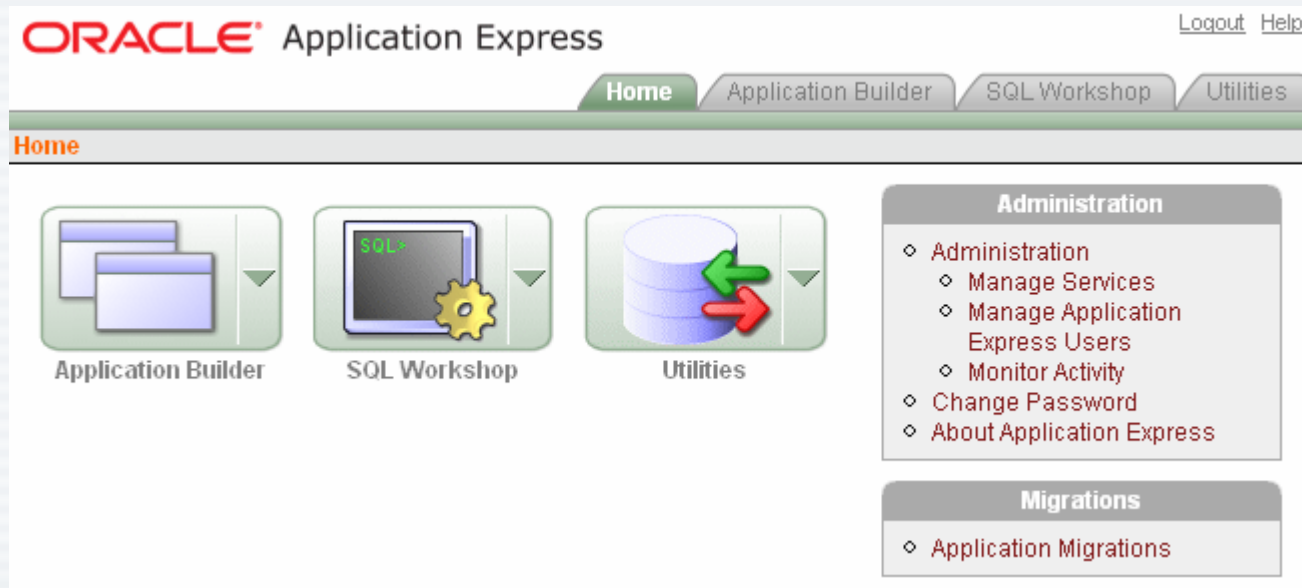
Oracle Application Express

- 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

Oracle Fusion Middleware

COLLABORATIVE ENTERPRISE PORTAL



Portals, Collaboration, Mobile, Desktop, Search

DEVELOPMENT TOOLS



Modeling,
Development Tools,
Frameworks

COMPOSITION & PROCESS ORCHESTRATION



BPM, ESB, B2B

INFORMATION AGGREGATION & ANALYSIS



ETL, Hubs, Content Mgmt., BI, BAM

MANAGEMENT



Systems
Management

ENTERPRISE APPLICATION SERVER



J2EE, WS-*, Events, Metadata, Registry

SECURITY



Identity, Services
Management

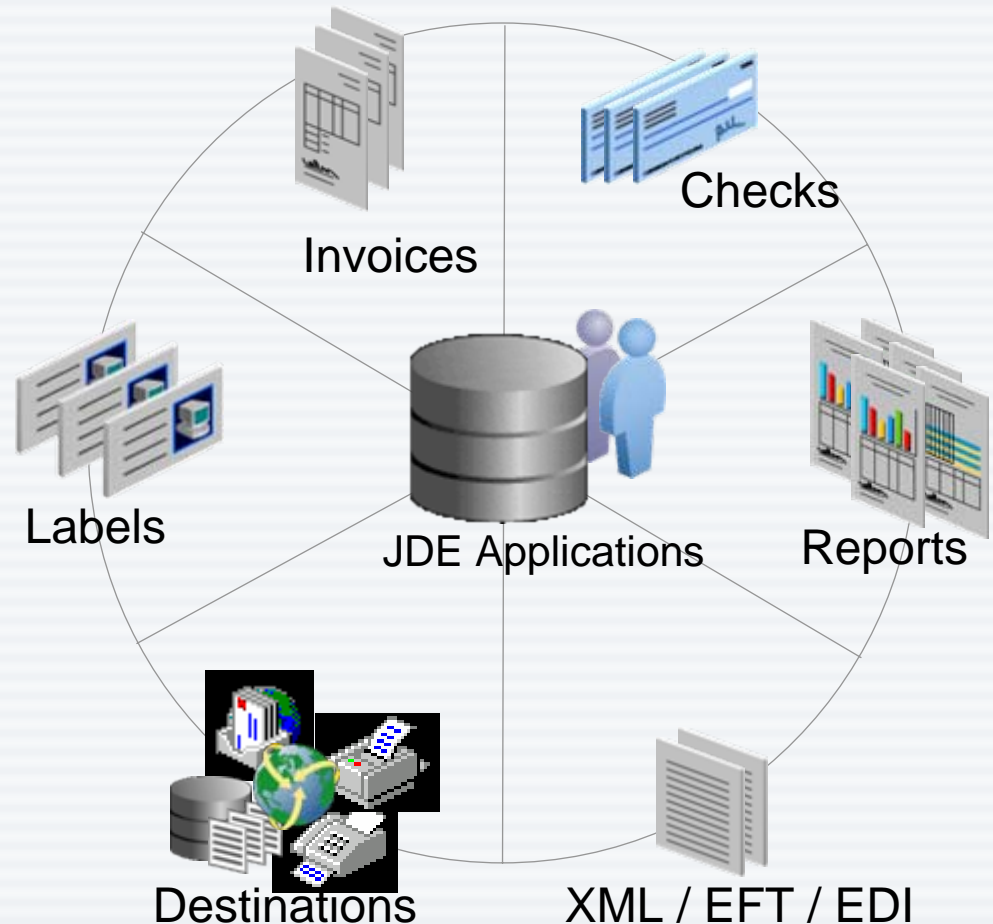
GRID COMPUTING



Clusters, Resource Management, High Availability

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

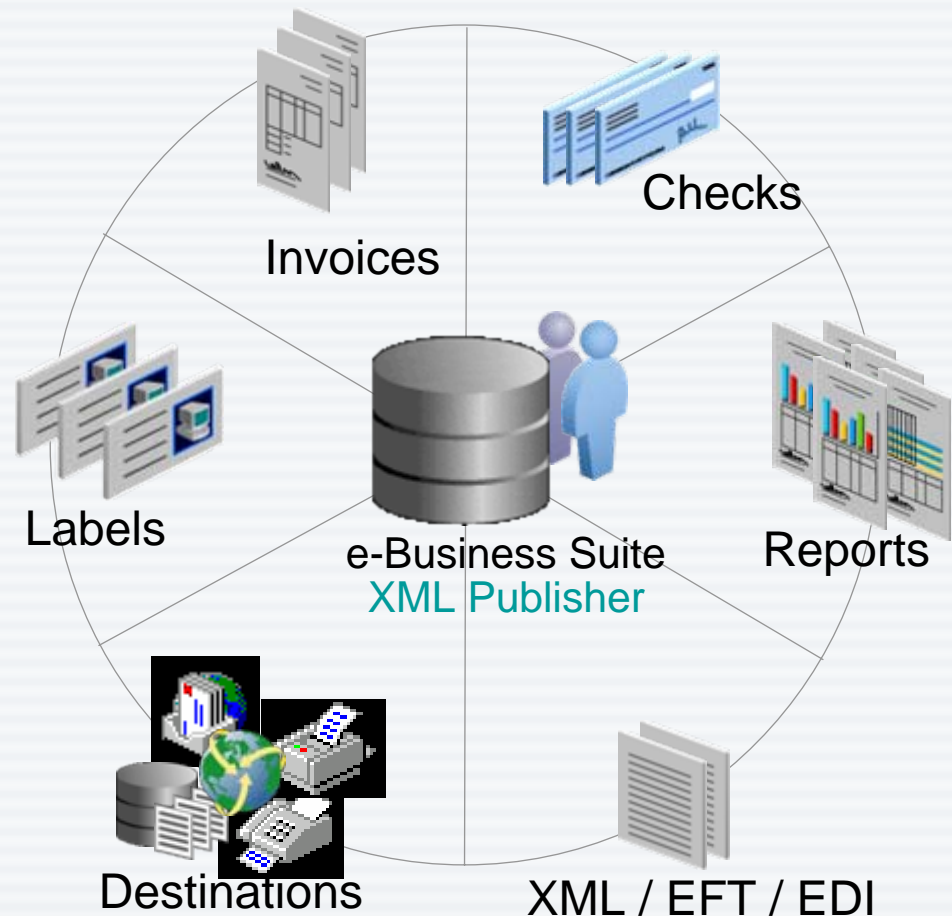
- ⚡ High Cost
- ⚡ Complex systems
- ⚡ Expensive maintenance
- ⚡ Labor Intensive



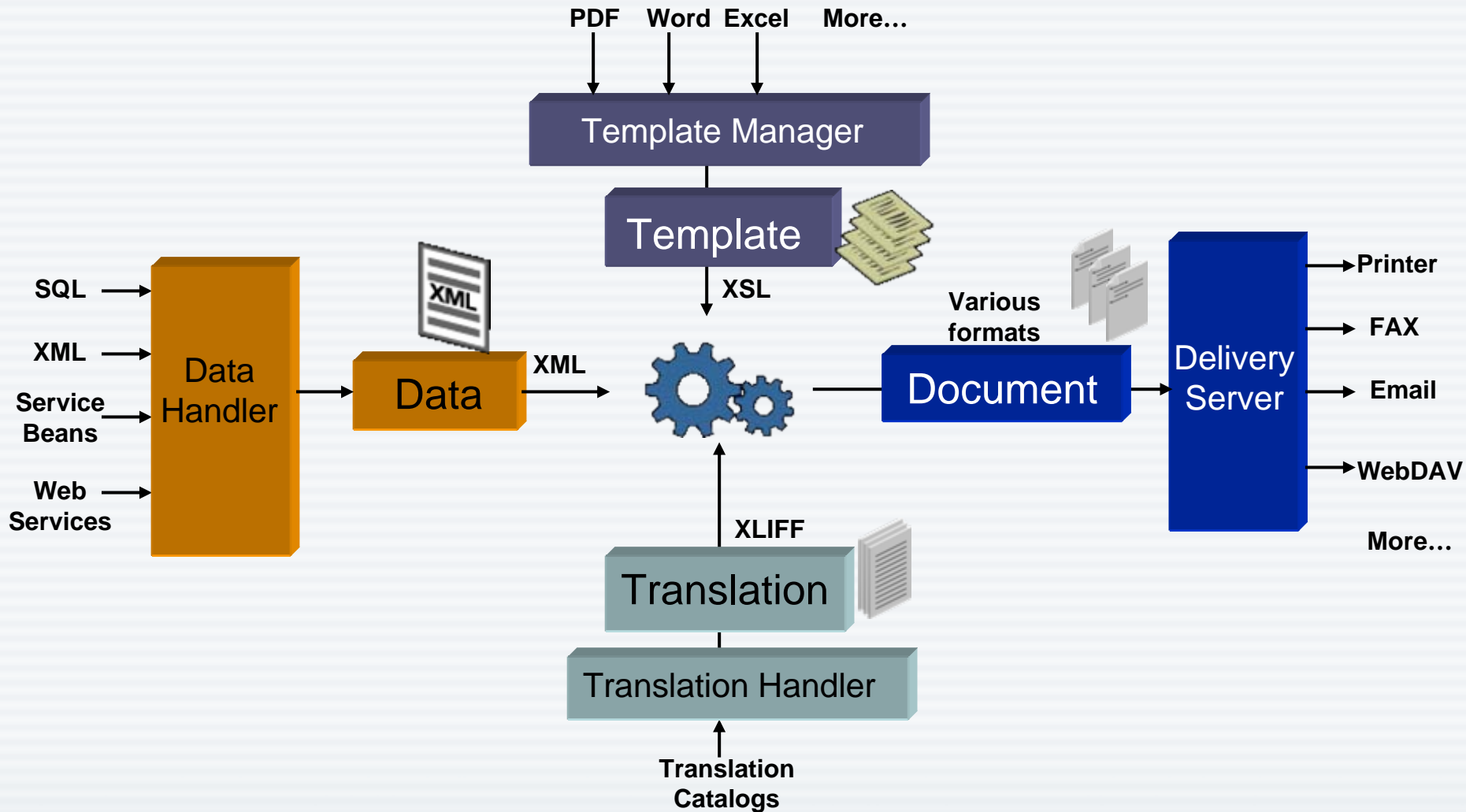
Solution - Remove Complexity, Reduce Cost

- Utilizing Oracle BI Publisher
- Integrated Publishing Solution

- Meet Business Requirements
- Rapid Deployment
- Reduce Total Cost
- Reduce Maintenance Cost

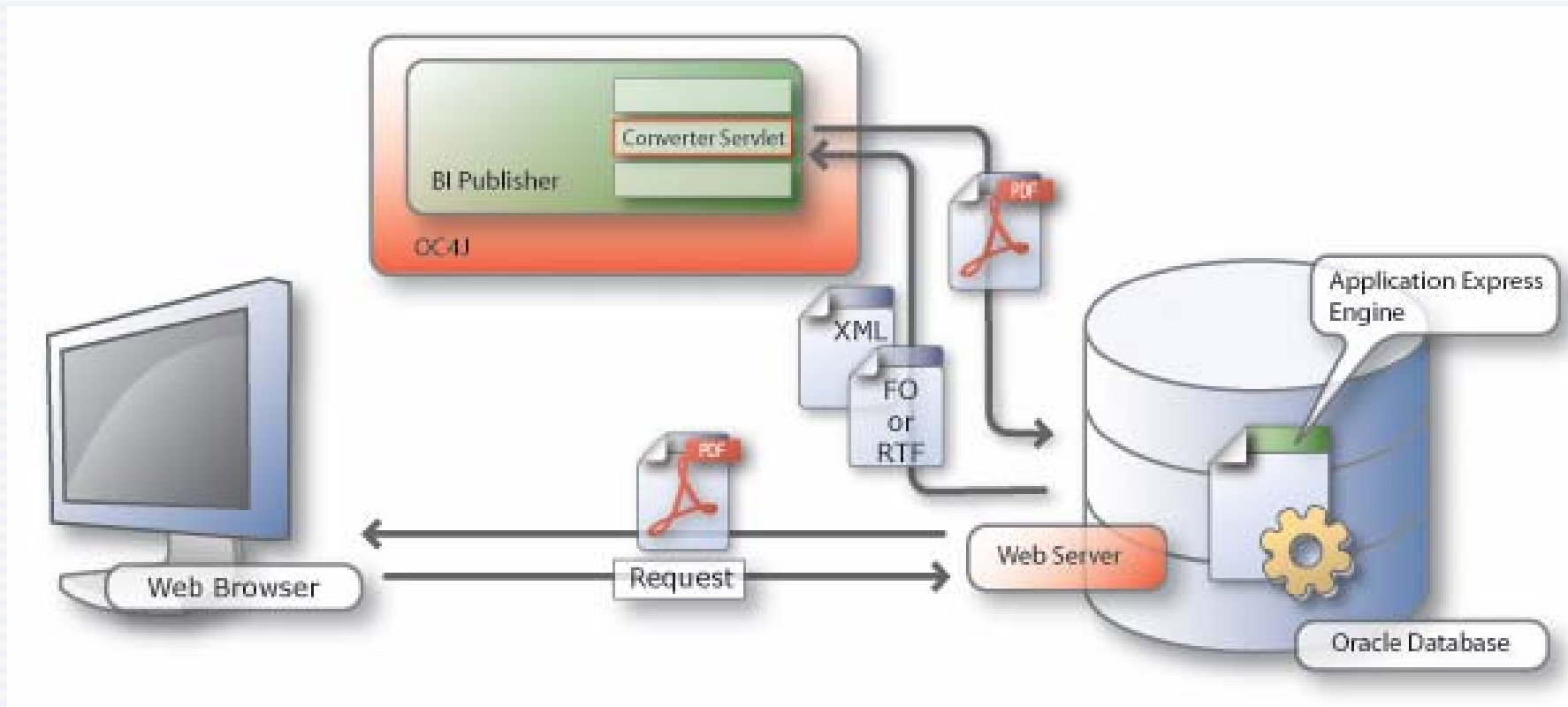


Oracle BI Publisher



10/02/2007

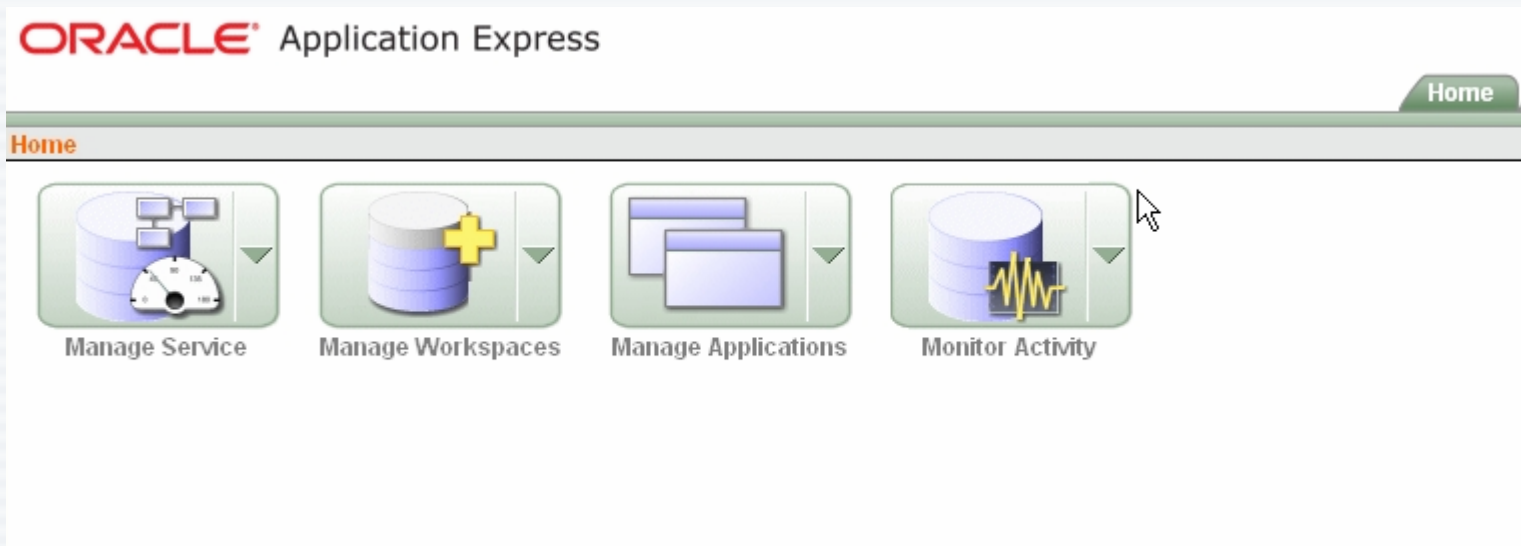
BI Publisher Integration



Courtesy: Oracle Corporation

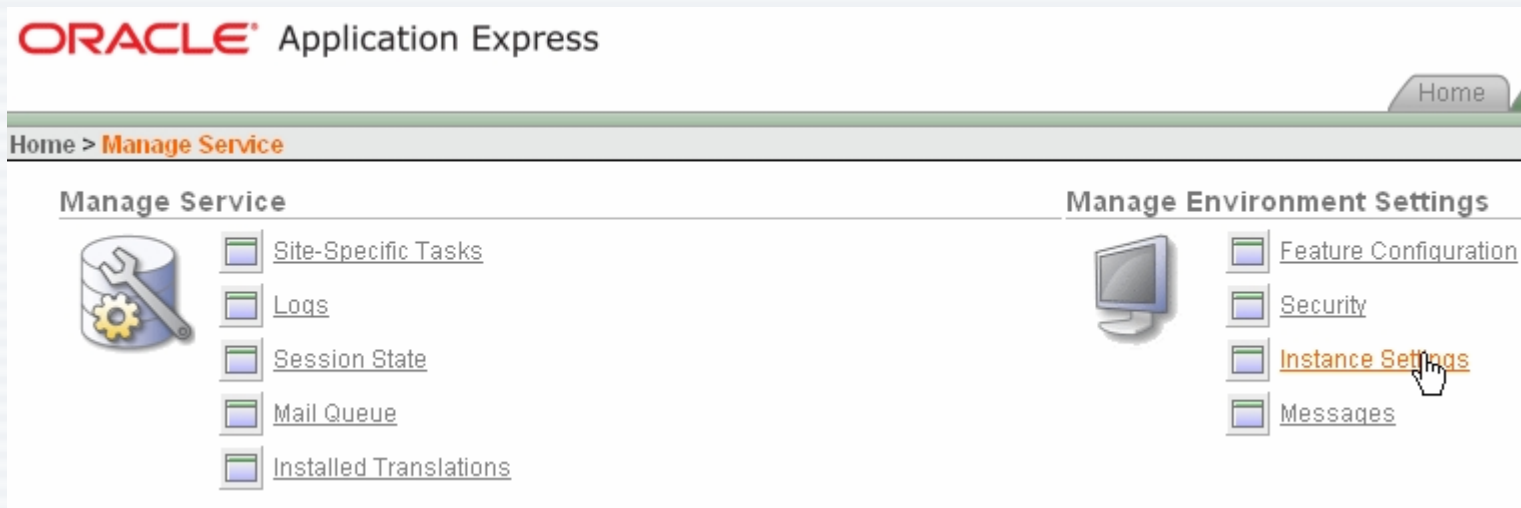
BI Publisher Integration – Setup

- To integrate Application Express to BI Publisher, you need:
 - Access to APEX Admin pages
 - BI Publisher server name & port



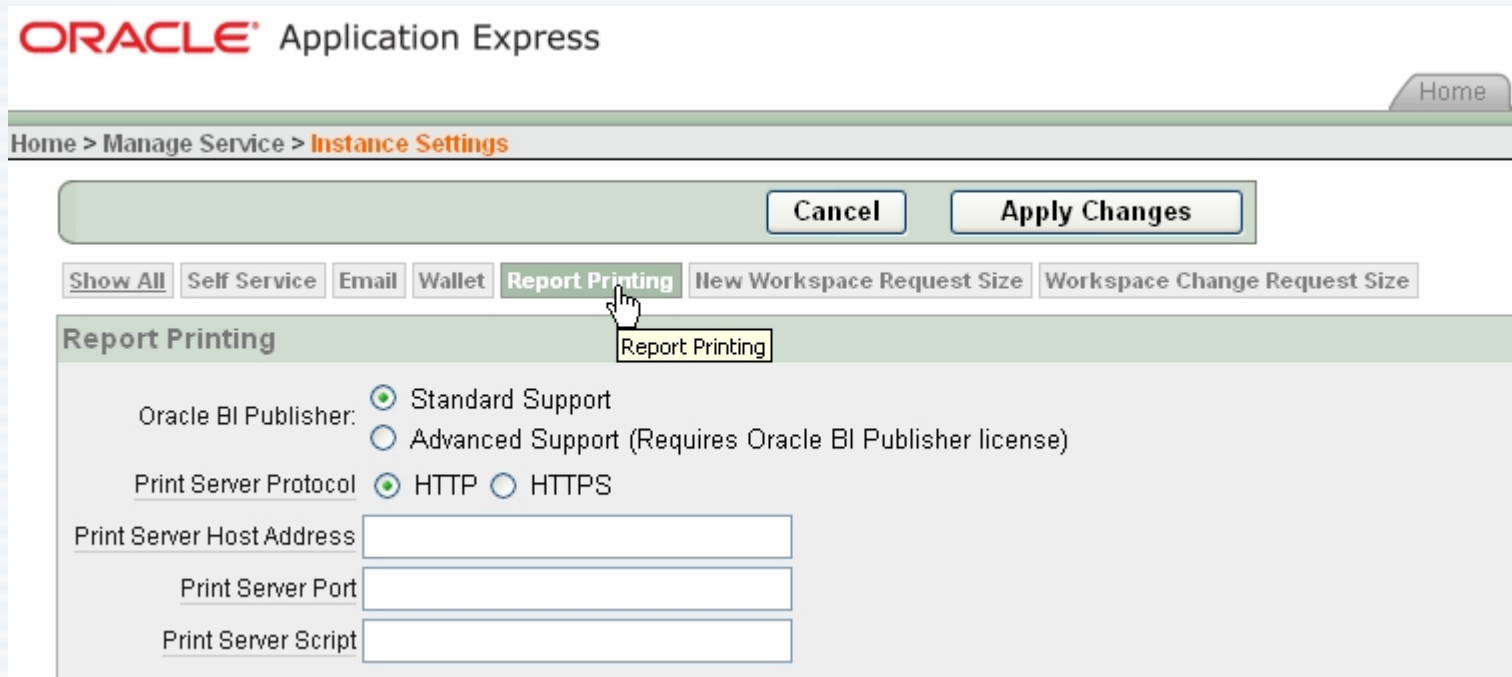
BI Publisher Integration – Setup

- Select Manage Service and then choose Instance Settings:



BI Publisher Integration – Setup

- Select the Report Printing section:



ORACLE® Application Express

Home > Manage Service > **Instance Settings**

Cancel Apply Changes

Show All Self Service Email Wallet **Report Printing** New Workspace Request Size Workspace Change Request Size

Report Printing

Oracle BI Publisher: ☒ Standard Support
☐ Advanced Support (Requires Oracle BI Publisher license)

Print Server Protocol ☒ HTTP ☐ HTTPS

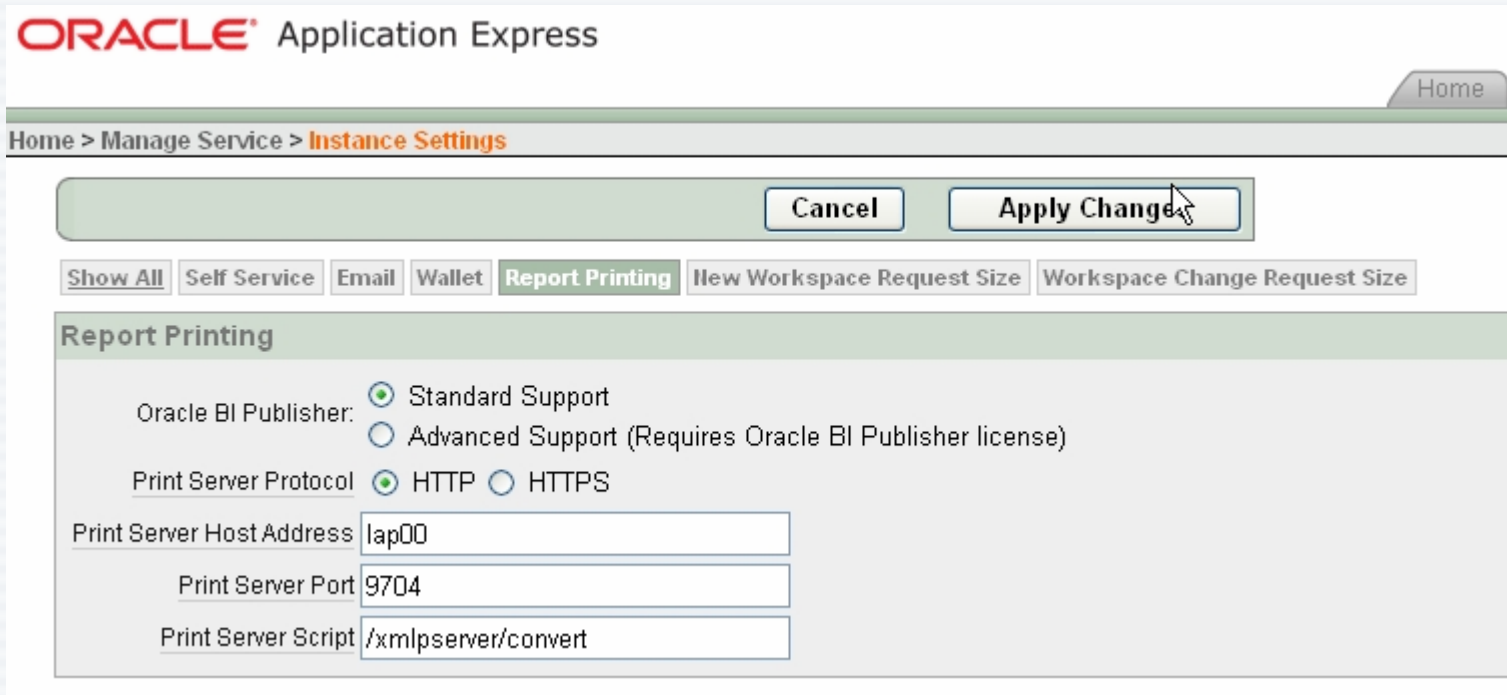
Print Server Host Address

Print Server Port

Print Server Script

BI Publisher Integration – Setup

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



ORACLE® Application Express

Home > Manage Service > **Instance Settings**

Cancel Apply Change

Show All Self Service Email Wallet **Report Printing** New Workspace Request Size Workspace Change Request Size

Report Printing

Oracle BI Publisher: ☒ Standard Support ☐ Advanced Support (Requires Oracle BI Publisher license)

Print Server Protocol ☒ HTTP ☐ HTTPS

Print Server Host Address

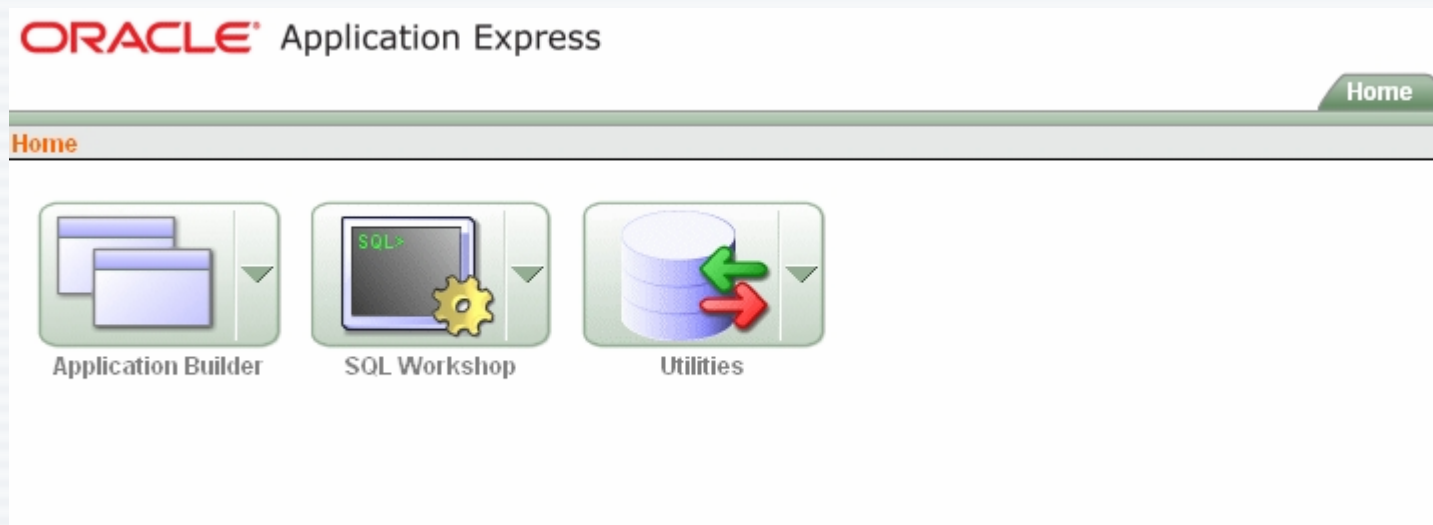
Print Server Port

Print Server Script

- Verify values and Apply Changes

BI Publisher Integration – Report Creation

- Now login to Application Express
- Select Application Builder

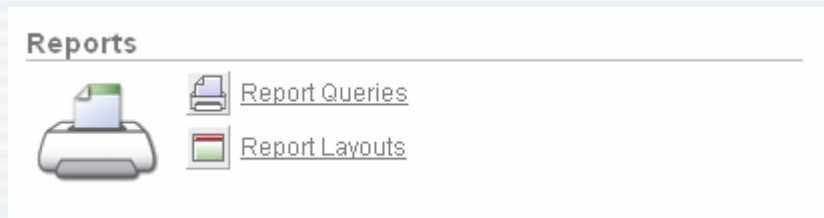


BI Publisher Integration – Report Creation

- 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

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
```

Cancel Next >

Query Builder

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**


Query
▼
Test Query
▼
Include Session State
▼
Download XML
▼
Confirm

Create Report Query Layout Cancel < Previous Next >

Report Layout: Use generic report layout ▼

Step 1 - Download XML file

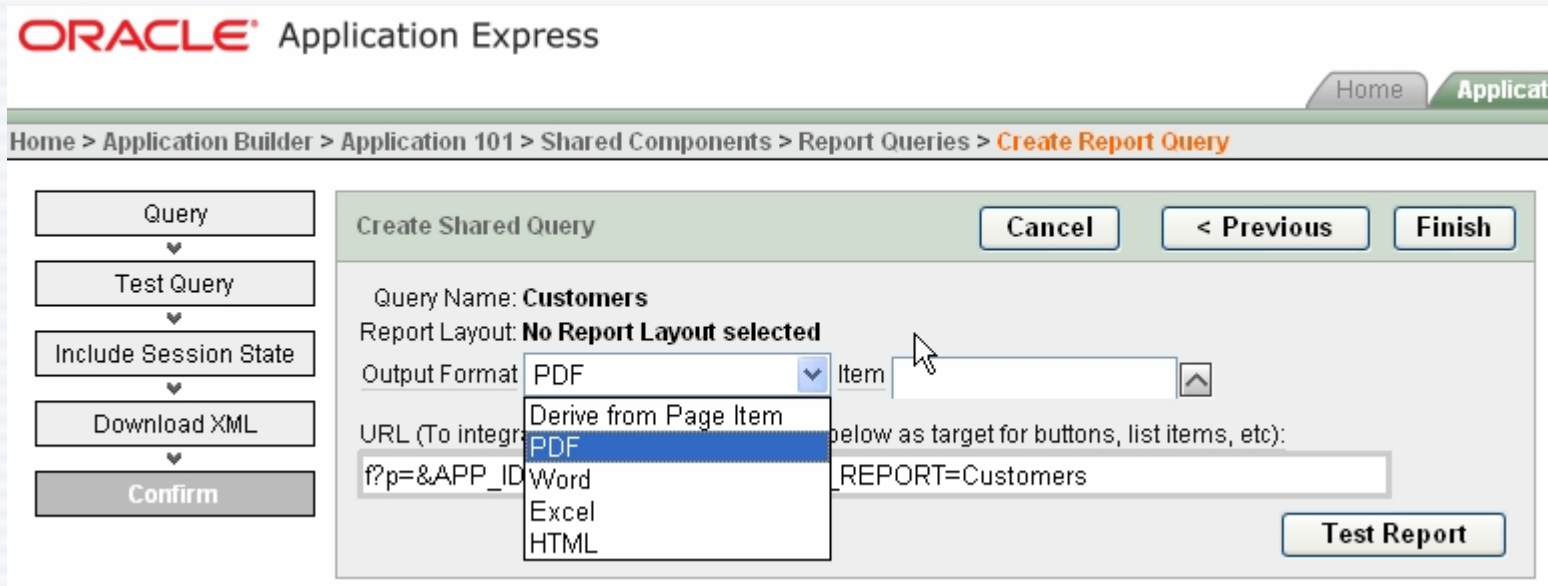
XML Structure: Standard ▼

 Download XML

Step 2 - Upload XSL-FO file

Layout Name: Customers

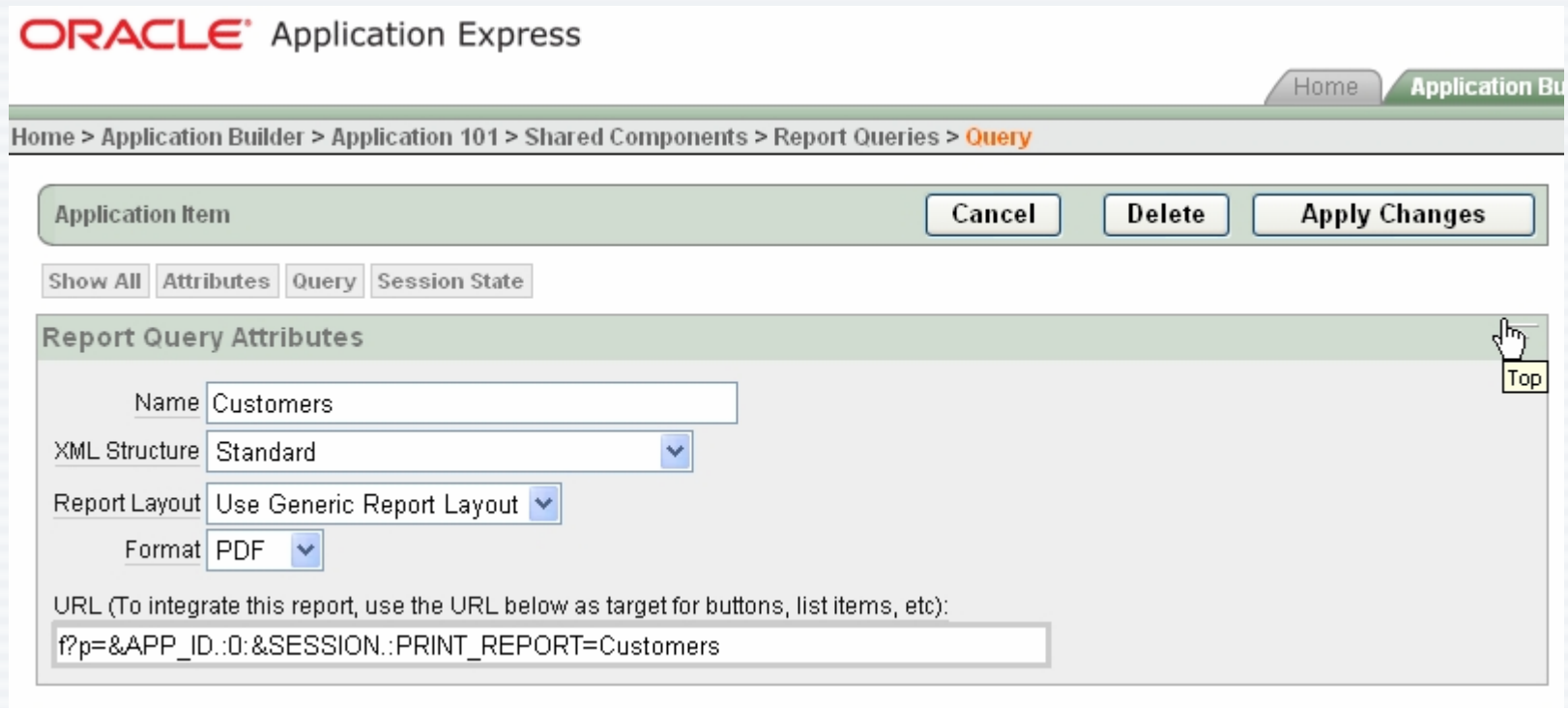
RTF File: Browse...



- Save the query by clicking Finish

BI Publisher Integration – Report Creation

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



ORACLE® Application Express

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

Application Item Cancel Delete Apply Changes

Show All Attributes Query Session State

Report Query Attributes

Name: Customers

XML Structure: Standard

Report Layout: Use Generic Report Layout

Format: PDF

URL (To integrate this report, use the URL below as target for buttons, list items, etc):

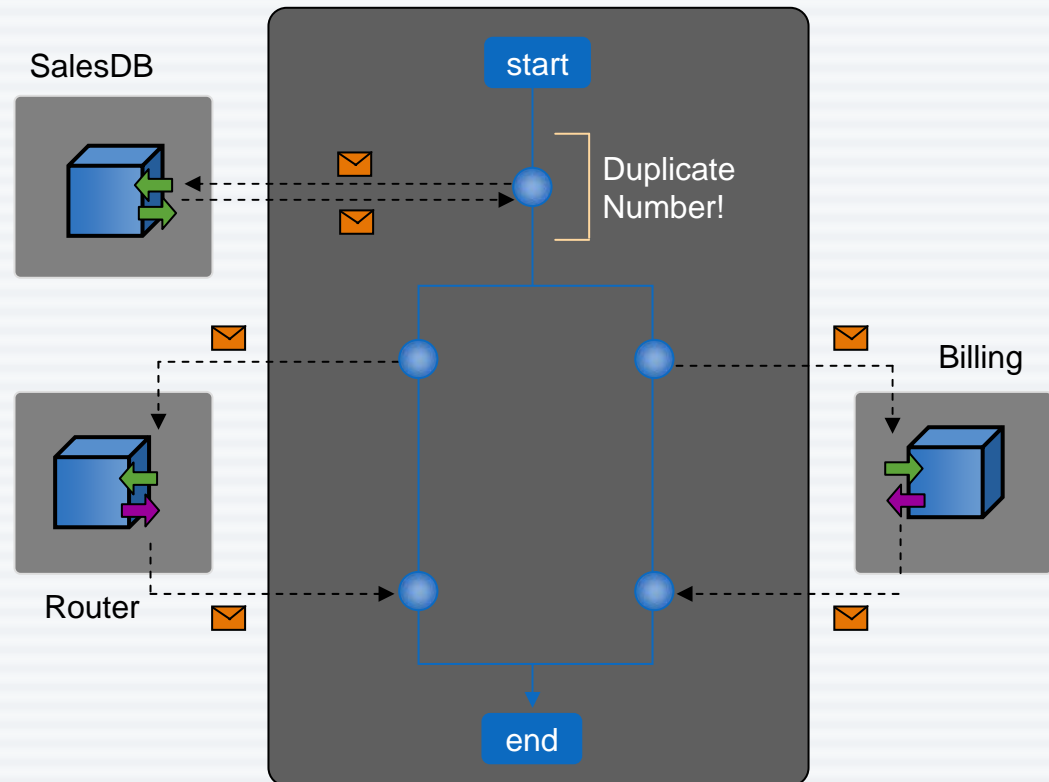
f?p=&APP_ID.:0:&SESSION.:PRINT_REPORT=Customers

Top

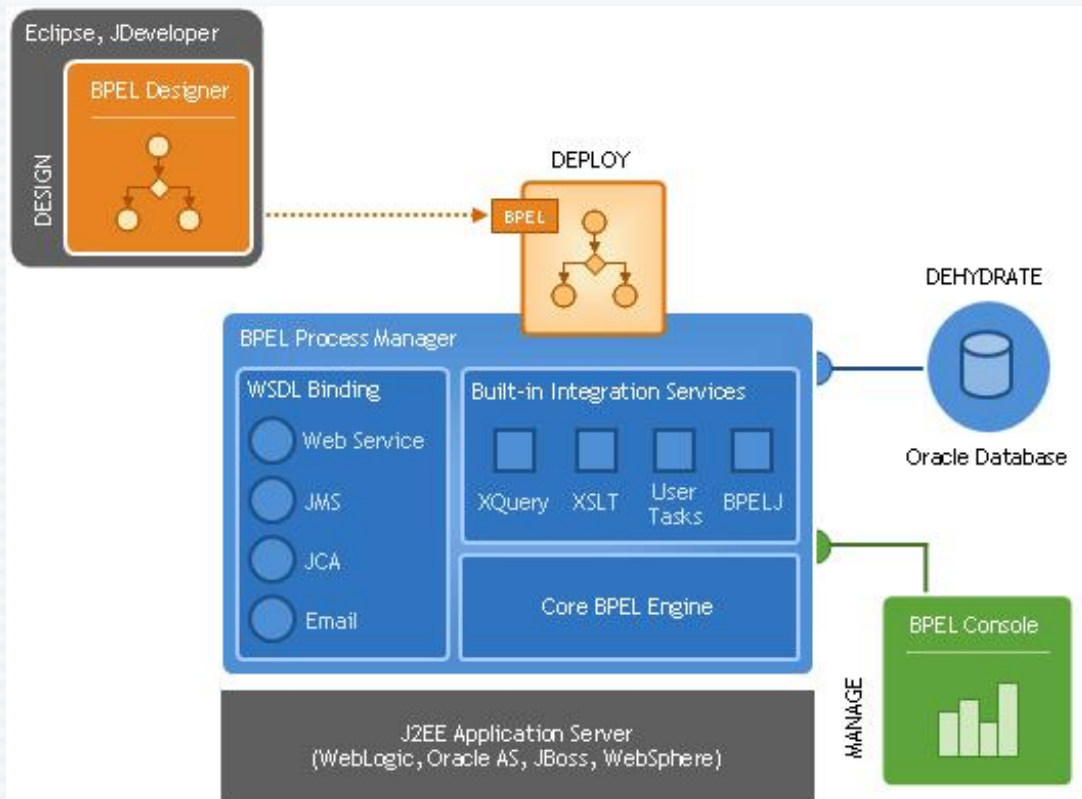
Demo

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

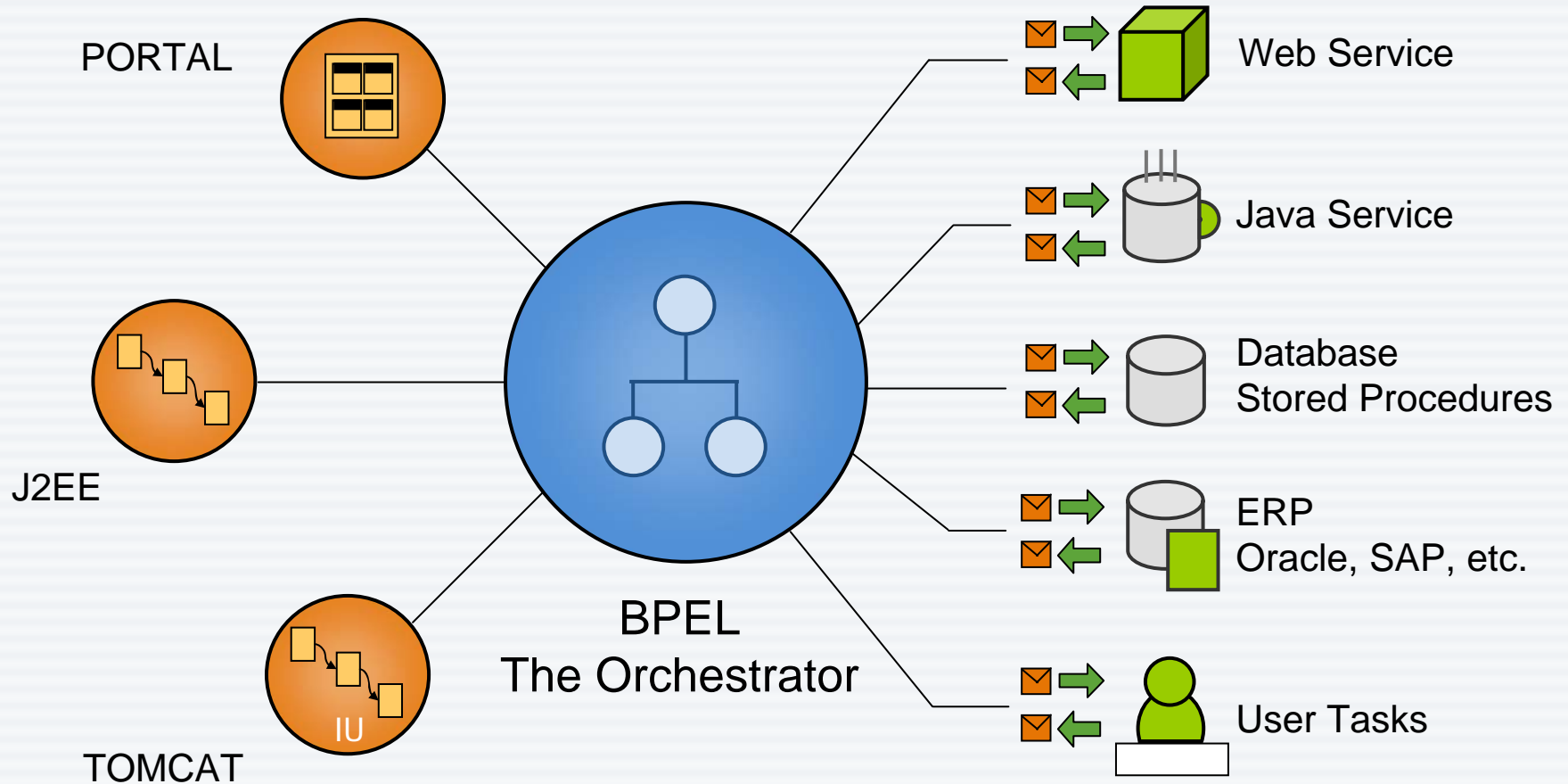


Oracle BPEL PM



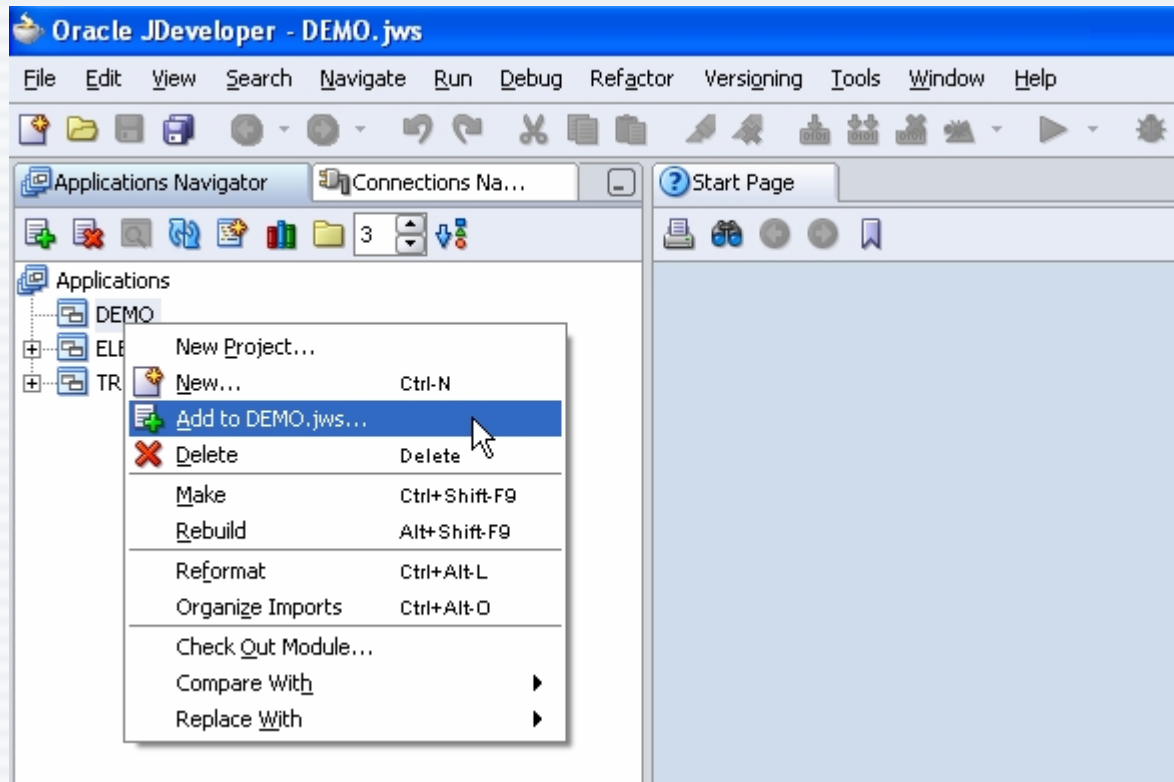
- Comprehensive and native BPEL implementation
- Easy-to-use modeling tool
- Scalable and reliable engine
- Flexible binding framework
- Rich management and monitoring
- Support for Oracle AS, WebLogic and WebSphere
- Get up and running in less than 15 minutes!

Oracle BPEL PM



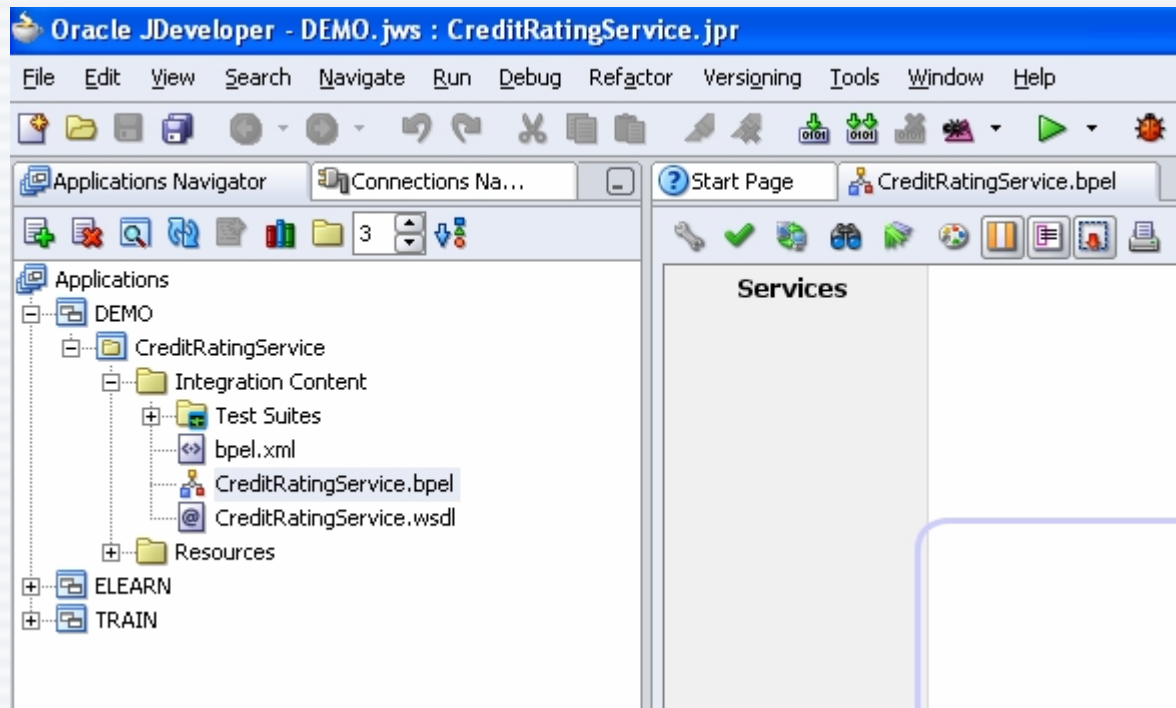
BPEL Integration – Setup

- 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

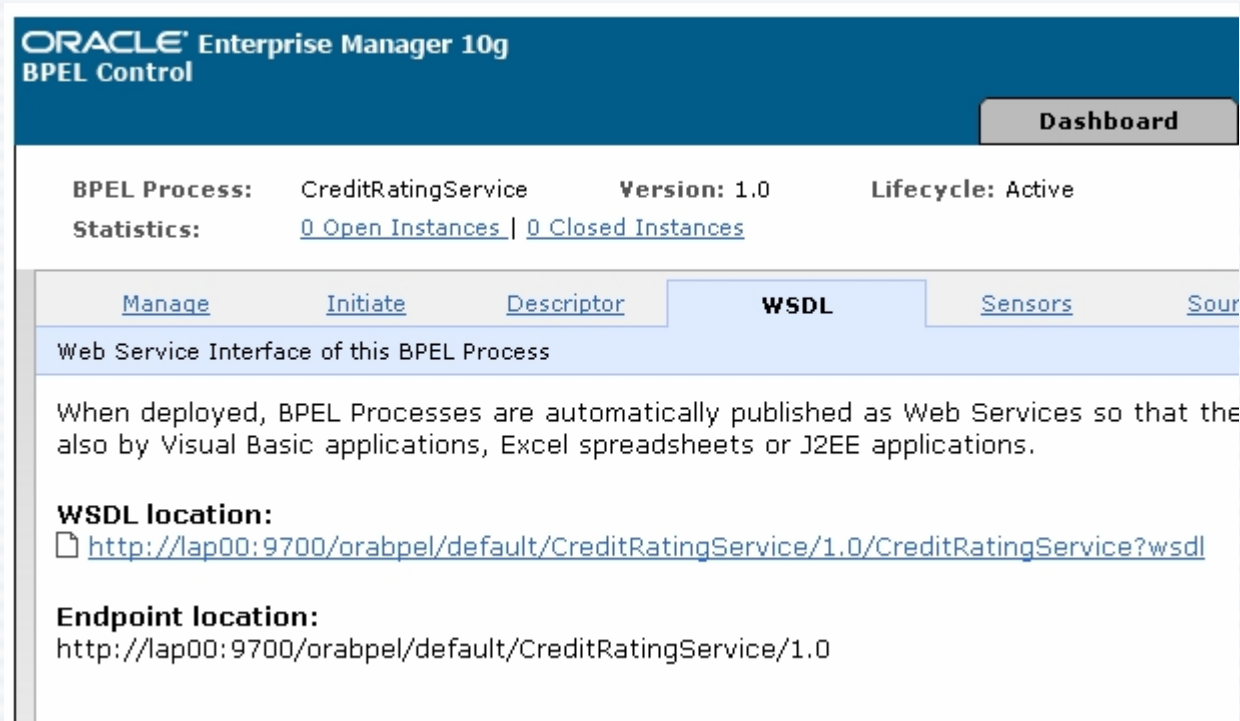


The screenshot shows the Oracle Enterprise Manager 10g BPEL Control Dashboard. The dashboard has a blue header with the text "ORACLE Enterprise Manager 10g BPEL Control" and a "Dashboard" tab. Below the header, there are two main sections: "Deployed BPEL Processes" and "In-Flight BPEL Process Instances". The "Deployed BPEL Processes" section contains a table with a single row for "CreditRatingService", which is a blue hyperlink. A mouse cursor is pointing at this link. The "In-Flight BPEL Process Instances" section is currently empty.

| Deployed BPEL Processes | In-Flight BPEL Process Instances | |
|-------------------------------------|----------------------------------|--------------|
| Name | Instance | BPEL Process |
| CreditRatingService | | |

BPEL Integration – Setup

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



ORACLE® Enterprise Manager 10g
BPEL Control

BPEL Process: CreditRatingService **Version:** 1.0 **Lifecycle:** Active

Statistics: [0 Open Instances](#) | [0 Closed Instances](#)

[Manage](#) [Initiate](#) [Descriptor](#) **WSDL** [Sensors](#) [Source](#)

Web Service Interface of this BPEL Process

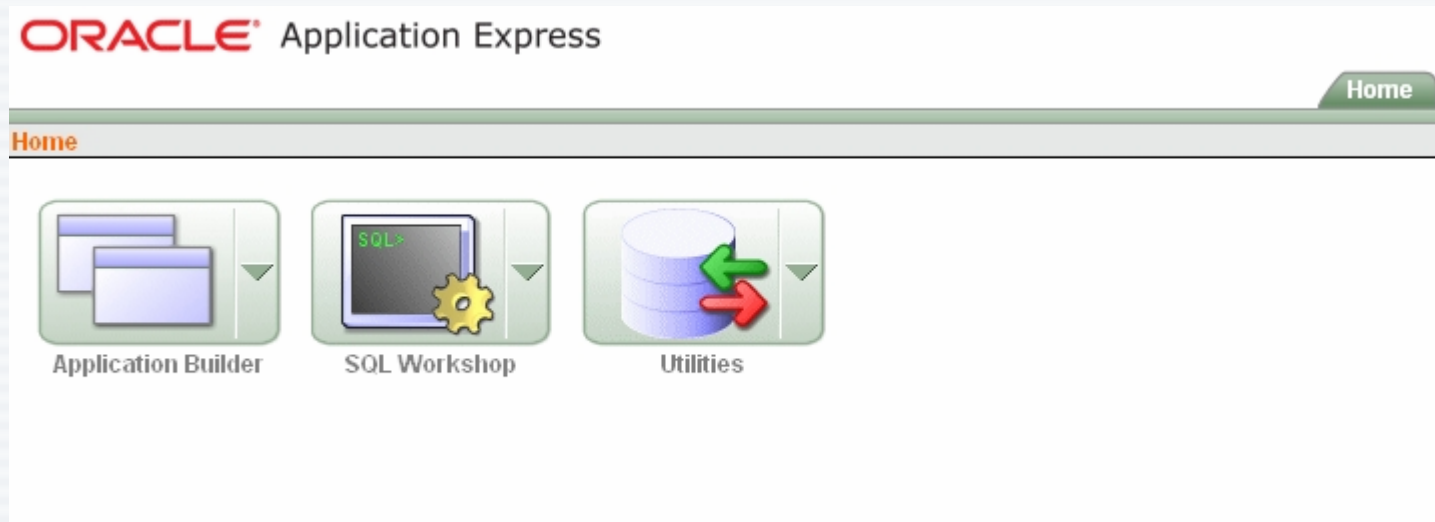
When deployed, BPEL Processes are automatically published as Web Services so that they can be accessed by Visual Basic applications, Excel spreadsheets or J2EE applications.

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

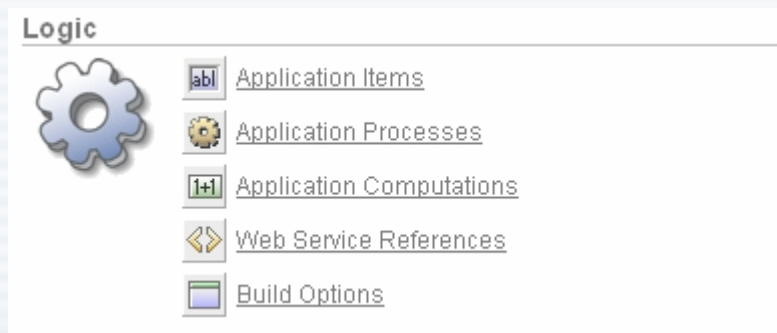


BPEL Integration – Setup

- In your application, select Shared Components:



- 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



The screenshot shows the Oracle Application Express interface for creating a web service reference. The breadcrumb trail is: Home > Application Builder > Application 101 > Shared Components > Web Service References > Create Web Service Reference. On the left, a vertical list of steps includes 'Search UDDI?' (highlighted), 'Choose tModel', 'WSDL Location', 'Web Service Details', and 'Success'. The main area is titled 'Create Web Service Reference' and contains the question 'Do you want to search a UDDI registry to find the WSDL?' with radio buttons for 'Yes' and 'No'. The 'No' option is selected. 'Cancel' and 'Next >' buttons are in the top right.

ORACLE® Application Express

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

Search UDDI? (highlighted)
▼
Choose tModel
▼
WSDL Location
▼
Web Service Details
▼
Success

Create Web Service Reference

Do you want to search a UDDI registry to find the WSDL? ☐ Yes ☒ No

Cancel Next >

BPEL Integration – Setup

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

ORACLE Application Express

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

Search UDDI?
 Choose tModel
WSDL Location
 Web Service Details
 Success

Create Web Service Reference

WSDL Location

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

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

Search UDDI?
▼
Choose tModel
▼
WSDL Location
▼
Web Service Details
▼
Success

Web Service Details
Cancel
< Previous
Create Reference

Web Service Name CreditRatingService
SOAP URL Endpoint http://lap00:9700/orabpel/default/CreditRatingService/1.0
SOAP Style document
Basic Authentication ☐ Yes ☒ No

Operations

Operation Name process

> Input Parameters
> Output Parameters

BPEL Integration – Form Creation

- Now select Create Form on Web Service


ORACLE® Application Express


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


Search UDDI?
▼
Choose tModel
▼
WSDL Location
▼
Web Service Details
▼
Success

Create Web Service Reference

✓ Web service reference created.

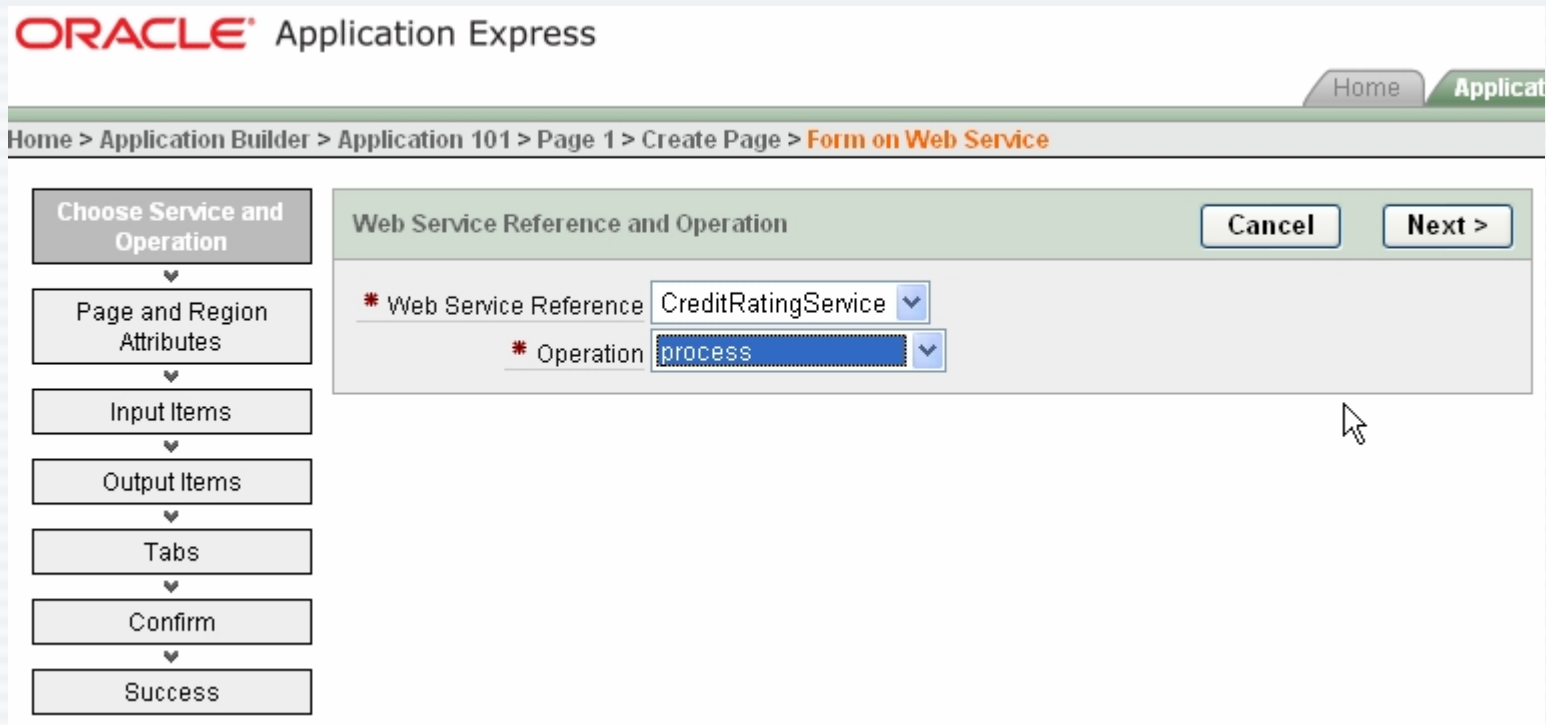

View Web Service References


Create Form on Web Service


Create Form and Report on Web Service

BPEL Integration – Form Creation

- Choose the Web Service Reference from the drop-down list, select the appropriate Operation and click Next



The screenshot shows the Oracle Application Express interface for creating a form on a web service. The breadcrumb trail is: Home > Application Builder > Application 101 > Page 1 > Create Page > **Form on Web Service**. The left sidebar contains a vertical stack of buttons: 'Choose Service and Operation' (highlighted), 'Page and Region Attributes', 'Input Items', 'Output Items', 'Tabs', 'Confirm', and 'Success'. The main area is titled 'Web Service Reference and Operation' and contains two required fields: '* Web Service Reference' with a dropdown menu showing 'CreditRatingService', and '* Operation' with a dropdown menu showing 'process'. To the right of these fields are 'Cancel' and 'Next >' buttons. A mouse cursor is visible near the 'Next >' button.

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 Cancel < Previous Next >

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 

* Page Name

* Region Title

* Region Template 

Breadcrumb 

BPEL Integration – Form Creation

- Select the Input Items 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

Items for Input Parameters

Cancel < Previous Next >

| Name | Type | Item Name | Item Label | Create |
|------|--------|-----------|------------|--------------------------------------|
| ssn | string | P2_SSN | SSN | Yes <input type="button" value="v"/> |

BPEL Integration – Form Creation

- Select the Output Items 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

Items for Output Parameters

Cancel < Previous Next > Finish

| Name | Type | Item Name | Item Label | Create |
|--------|------|-----------|------------|--------------------------------------|
| rating | int | P2_RATING | Rating | Yes <input type="button" value="v"/> |

BPEL Integration – Form Creation

- Optionally, select a Tab Set, enter a New Tab Label 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 Tab Cancel < Previous Next >

Page: 2
Tab Options: ☐ Do not use tabs
☒ Use an existing tab set and create a new tab within the existing tab set.
☐ Use an existing tab set and reuse an existing tab within that tab set.

* Tab Set TS1 (Under Construction) ▼

* New Tab Label Credit Rating

> **Tabs**

BPEL Integration – Form Creation

- Verify all selections and click Create Form to complete creation of a new form based on the Web Service Reference

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

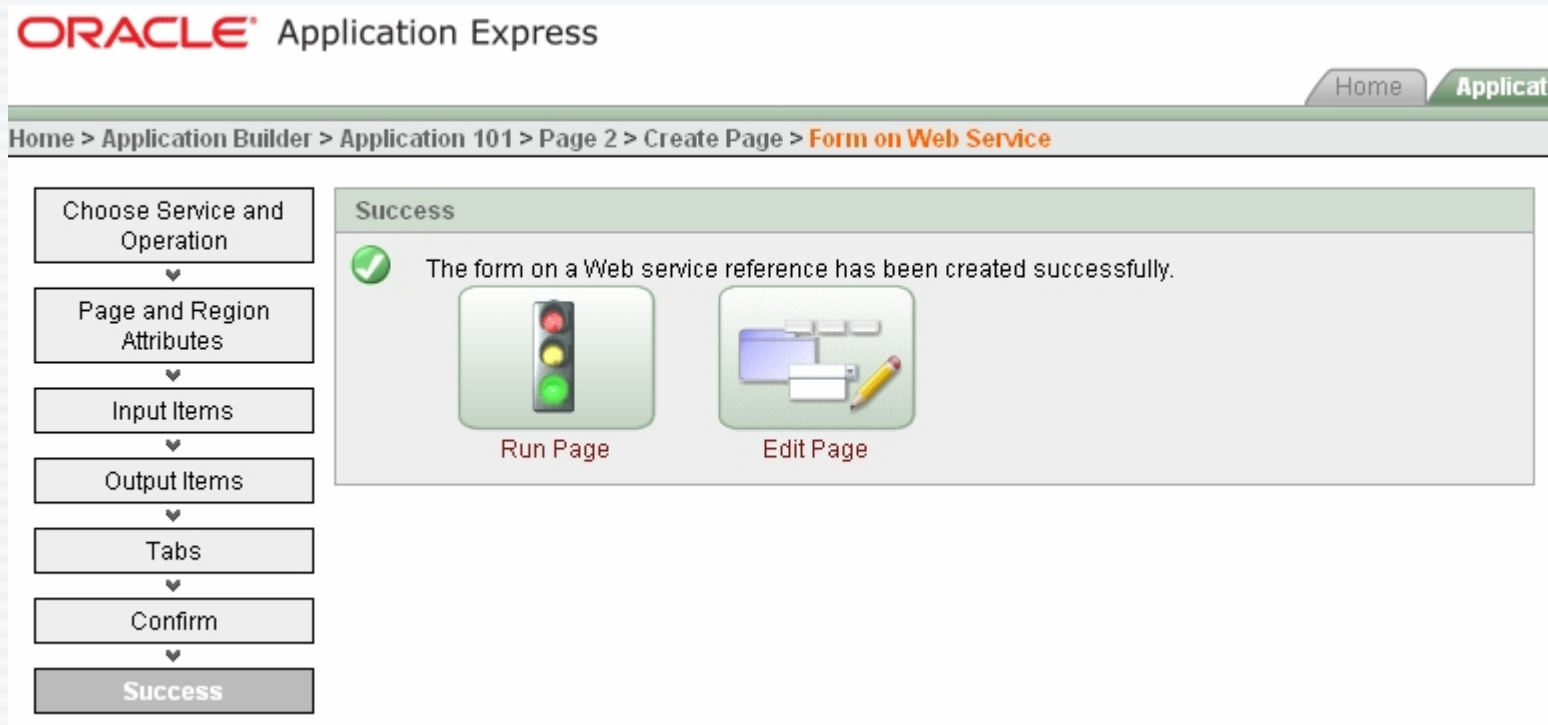
Form on Web Service Confirmation

 You have requested to create a form on a Web service reference page with the following attributes. Please confirm your selections.

| | |
|----------------------------------|-------------------------------------|
| Application | 101 |
| Page | 2 |
| Page Name | CreditRatingService |
| Tab Set | TS1 |
| Tab Label | Credit Rating |
| Region Title | process |
| Region Template | Form Region |
| Web Service Reference, Operation | CreditRatingService, process |
| Form Items | P2_SSII |
| Output Items | P2_RATING |

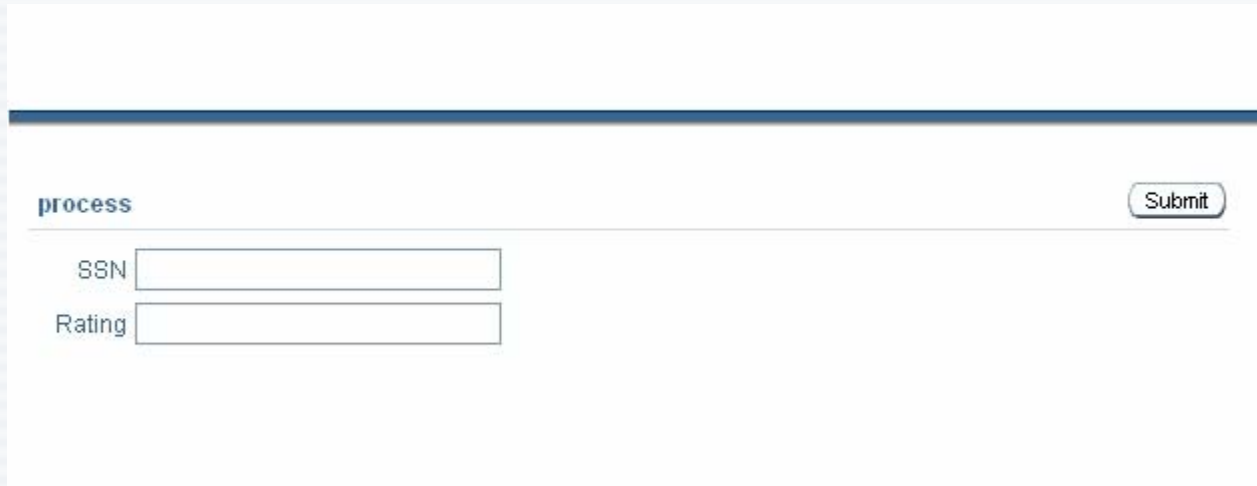
BPEL Integration – Form Creation

- Now, test the newly created page by clicking on Run Page



BPEL Integration – Form Creation

- The following page will be displayed, prompting for a Social Security Number to be entered



The screenshot shows a web form with a title bar labeled "process" and a "Submit" button. Below the title bar, there are two input fields: "SSN" and "Rating".

| process | | Submit |
|---------|----------------------|--------|
| SSN | <input type="text"/> | |
| Rating | <input type="text"/> | |

BPEL Integration – Form Creation

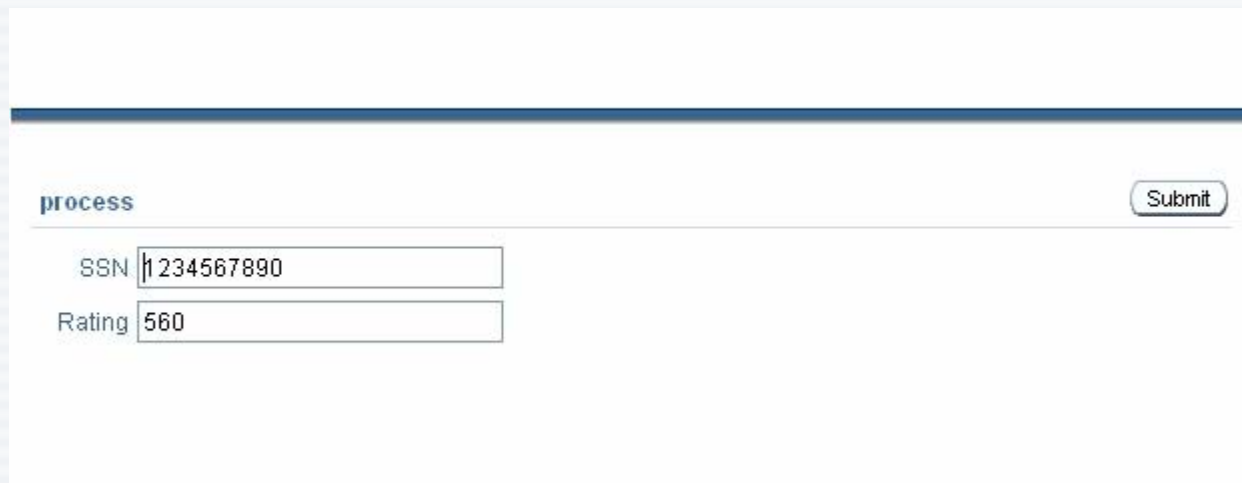
- Type in a number and click Submit



The screenshot shows a web form titled "process" in a blue header bar. Below the header, there are two input fields: "SSN" with the value "1234567890" and "Rating" which is empty. A "Submit" button is located in the top right corner of the form area.

BPEL Integration – Form Creation

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

A screenshot of a web form. At the top, there is a blue horizontal bar. Below it, the word 'process' is displayed in blue text on the left, and a 'Submit' button is on the right. Underneath, there are two input fields: the first is labeled 'SSN' and contains the value '1234567890'; the second is labeled 'Rating' and contains the value '560'.

Demo

- 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
- Locations
 - Irvine, CA (Headquarters)
 - Los Angeles, CA

A large, stylized blue graphic of the letters 'Q' and 'A' intertwined, serving as a background for the main title.

QUESTIONS ANSWERS

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