

Tuesday, June 17, 2008,
ODTUG Kaleidoscope, New Orleans LA

Integrating Oracle Forms and ADF Faces

...or any other web technology



Agenda

- Introducing me and Eurotransplant
- Our need to integrate
- Runtime Demonstration
- Technical details (you can forget)
- Design time Demonstration
- OraFormsFaces
- Oracle JHeadstart
- Q&A



Introduction - Me

- Wilfred van der Deijl
 - System architect at Eurotransplant and Owner Commit Consulting
 - Oracle tools user since 1995
 - Active member of Oracle community
 - Blogger, presenter, author, beta tester, customer advisory board member, and ...
 - Oracle Ace since last week



Introduction - Eurotransplant

- Largest international organ exchange organization
- Founded in 1967
- 7 countries, 122 million inhabitants.
- Based in Leiden, the Netherlands
- Oracle reference site
- 1500 users (1400 remote)
- 325 database tables / 160 Forms



Our need for a new tech stack

- Strategic choice to move to HTML web technology
 - Majority of users remote
 - Many “self service”/infrequent users
 - Need for intuitive user interface
- JDeveloper/ADF for most new developments since 2005



Our need to integrate

- What about existing Forms application?
 - 160 Forms, single pull down menu
 - Rewriting all in a big bang is no option
 - Locked into Forms?

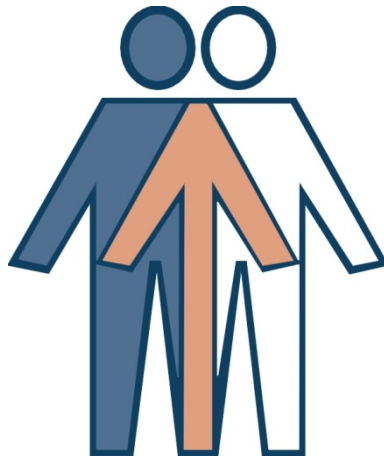


Three Options

- Stick with Oracle Forms
- Migrate Forms to J2EE
- Integrate Forms and J2EE
 - Prevent technology lock-in for new developments
 - Protect investment in existing Forms
 - Possible phased migration from Forms to J2EE
 - Instant intuitive web user experience
 - Migrate at own pace (weeks, months, years, or never)



Runtime Demonstration

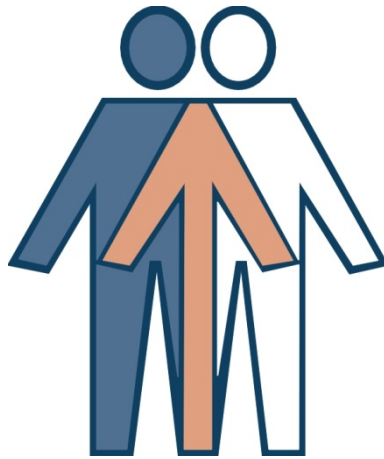


Key features

- Pass context and events from JSF to Forms
- Pass context and events from Forms to JSF
- Eliminate Forms startup time
- Optional:
 - Application flow control from Forms to JSF
 - Visual integration



JavaScript API



JavaScript API

- API key to this integration
 - Foundation for several parts of the solution
- Client side integration
 - JavaScript can call Forms
 - Forms can execute JavaScript
- Industry standard LiveConnect API



JavaScript API pre 11

- Native in Forms version 11
- Prior to version 11:
 - Extend Forms applet to add functionality
 - Use client side Pluggable Java Components in each form to relay messages



Inbound JavaScript API

- Ability to raise a Forms PL/SQL event (trigger) from JavaScript
- Simple example:
 - Web button does commit Form

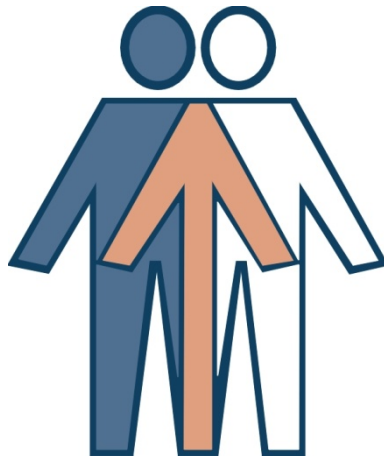


Outbound JavaScript API

- Ability to execute JavaScript from Forms PL/SQL
- Pass values to the web application
- Trigger events in web application



Eliminate Applet Startup Time



Legacy Lifecycle Cache

- Applet startup resource and time consuming
- Solution: `legacy_lifecycle=true`
- Keeps applet running in background
- Reactivates applet if 100% identical applet declaration
- Native Sun JVM feature since 1.4.2



Legacy Lifecycle issues

- Static applet declaration
 - Push vs. Pull context/parameters
 - Push vs. Pull Form module name
- Resumes in old state



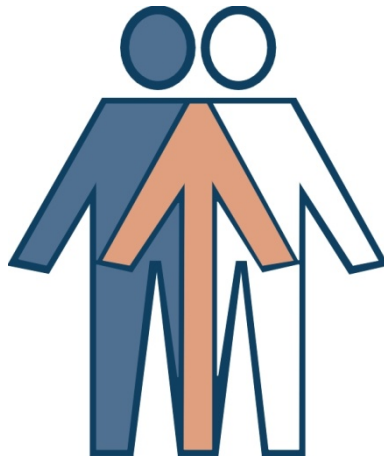
Act on applet reactivation

- Applet resumes as it was
- Add handling to the re-activation
- Use Inbound JavaScript API route:

```
raiseEvent("when-applet-suspended", "");  
raiseEvent("when-applet-activated", "");
```



Visual Integration



Visual Integration

- Integrate seamlessly
 - Web-like intuitive user experience
 - User does not notice
 - Allows for one-form-at-a-time migration
- Remove chrome
 - Splash screen, logo, background image
 - Forms edges
 - Menu and Toolbar
 - Status bar
- **Optional**



Visual Integration

Oracle Application Server Forms Services - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://formscomp:8889/forms/fmservlet

HR Supply Chain Action Edit Query Navigation Help Window

ORACLE

Order

Order

ID: 601

Customer: SHAPE UP

Order date: 01-may-1986

Ship date: 30-may-1986

Commission: A

Total: 2.40

Items

ID	Product	Price	Qty	Total
1	SB ENERGY BAR-6 PACK	2.40	1	2.40

Record: 1/? ... <OSC>

Applet oracle.forms.engine.Main started

Normal Forms

Visual Integration

Oracle Application Server Forms Services - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://formscomp:8889/forms/frmservlet

Customers Orders

Orders

HR Supply Chain Action Edit Query Navigation Help Window

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Customers | Orders

Applet oracle.forms.engine.Main started

Normal applet include

Visual Integration

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Customers Orders

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<OSC>

Customers | Orders

Applet oracle.forms.engine.Main started

Add <div>

Visual Integration

The screenshot shows an Oracle HR Supply Chain application window titled "Order". The window has a menu bar with "HR", "Supply Chain", "Action", "Edit", "Query", "Navigation", "Help", and "Window". The Oracle logo is in the top right corner. Below the menu bar is a toolbar with various icons. The main content area is divided into two sections: "Order" and "Items".

Order Section:

ID	601		
Customer	SHAPE UP		
Order date	01-may-1986	Commission	A
Ship date	30-may-1986	Total	2.40

Items Section:

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Record: 1/? <OSC>

Hide browser

Visual Integration

The screenshot shows an Oracle application window titled "Order". The menu bar includes "HR", "Supply Chain", "Action", "Edit", "Query", "Navigation", "Help", and "Window". The toolbar contains various icons for file operations and navigation. The main content area is divided into two sections: "Order" and "Items".

Order Section:

ID	<input type="text" value="601"/>		
Customer	<input type="text" value="SHAPE UP"/>		
Order date	<input type="text" value="01-may-1986"/>	Commission	<input type="text" value="A"/>
Ship date	<input type="text" value="30-may-1986"/>	Total	<input type="text" value="2.40"/>

Items Section:

ID	Product	Price	Qty	Total
1	SB ENERGY BAR-6 PACK	2.40	1	2.40

Record: 1/? ... <OSC>

Reduce <div> size

Visual Integration

HR Supply Chain Action Edit Query Navigation Help Window

ORACLE

Order

Order

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Customer: SHAPE UP
Order date: 01-may-1986
Ship date: 30-may-1986
Commission: A
Total: 2.40

ID	Product	Price	Qty	Total
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Record: 1/? ... <OSC>

CSS div: overflow:hidden

Visual Integration

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1	SB ENERGY BAR-6 PACK	2.40	1	2.40

Record: 1/? <-OSC>

CSS applet: top & left negative

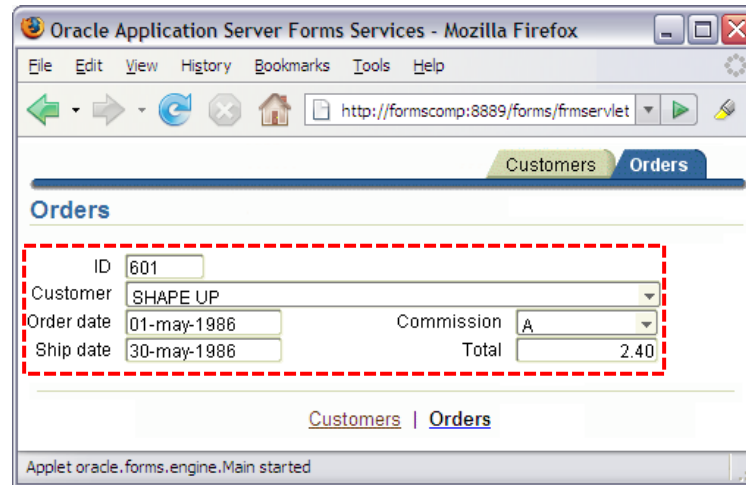
Visual Integration

ID	601			
Customer	SHAPE UP			
Order date	01-may-1986	Commission	A	
Ship date	30-may-1986	Total		2.40

Clipping end result



Visual Integration



Oracle Application Server Forms Services - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://formscomp:8889/forms/fmservlet

Customers Orders

Orders

ID	601				
Customer	SHAPE UP				
Order date	01-may-1986	Commission	A		
Ship date	30-may-1986	Total		2.40	

Customers | Orders

Applet oracle.forms.engine.Main started

What it looks like in the browser

Visual Integration

Oracle Application Server Forms Services - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://formscomp:8889/forms/fmserverlet

Customers Orders

Orders

ID	<input type="text" value="601"/>		
Customer	<input type="text" value="SHAPE UP"/>		
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Customers | Orders

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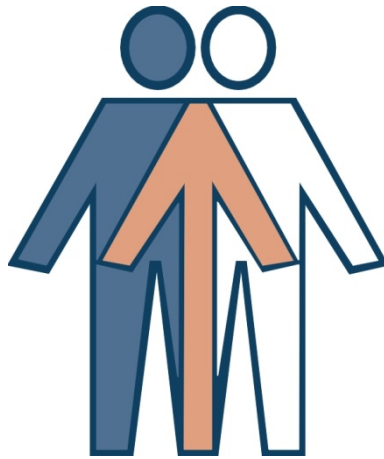
No <div> borders

Visual Integration

- No (or minimal) changes to existing Forms
- Clip whichever area you want
 - With or without menu
 - With or without status bar
 - Master detail: single or both blocks
 - Tabs: single or all tab pages
- If status bar is clipped, it is still active
 - On-message trigger still fires
 - On-message trigger can push message in JavaScript alert



OraFormsFaces

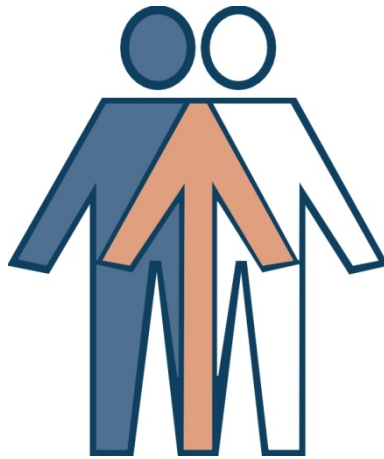


JSF Component Library

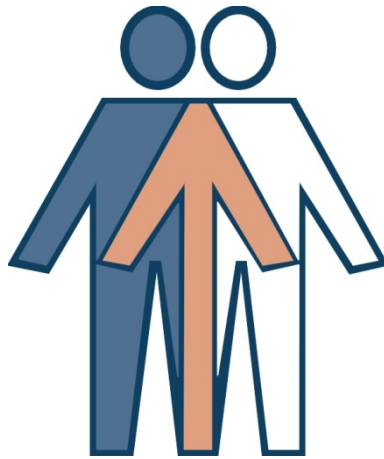
- Named “OraFormsFaces”
- Component based web development
- JSF industry open standard
- All complexity hidden away from the page developer
- Allows for more complex features
- Single JAR file



Design Time Demonstration

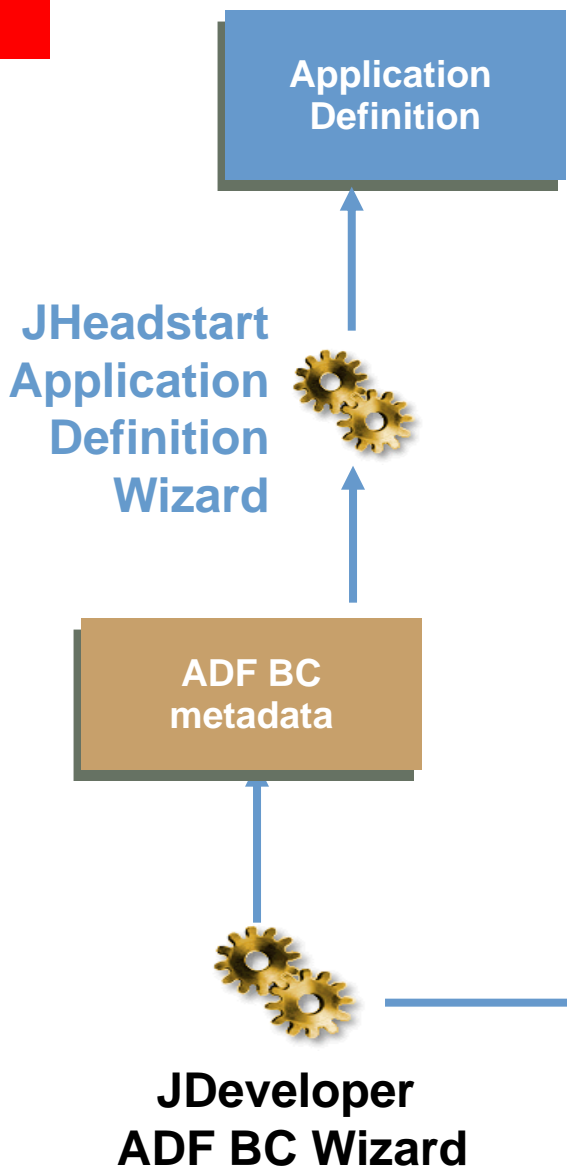


Oracle JHeadstart

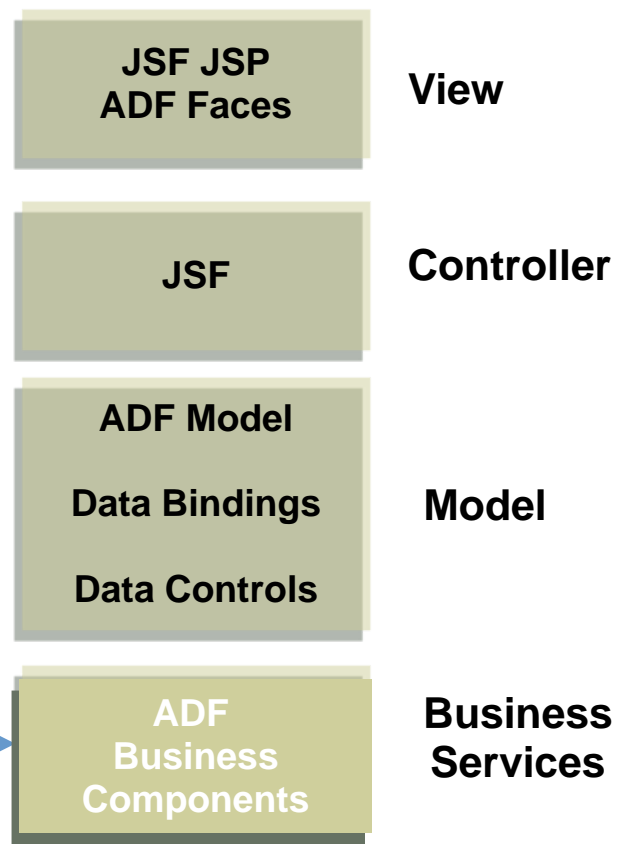


What is JHeadstart

- JDeveloper extension for template-based automation of ADF development tasks
 - Development Toolkit on top of ADF
 - Builds on ADF Runtime architecture
 - Fully integrates with ADF Design Time
- Takes declarative development to the next level
 - Generates complete ADF applications
 - Like the Designer Forms Generator generates Forms apps, JHeadstart generates ADF apps
- Enables agile development
- Includes Oracle Forms to ADF migration path
- Implements ADF Best Practices



Generation Process



JHeadstart
Application
Definition
Wizard

Application
Definition

ADF BC
metadata

JDeveloper
ADF BC Wizard

The screenshot shows the 'AppModuleApplicationDefinition.xml - Application Definition Editor' window. The left pane displays a tree view of the application structure, with 'Employees' selected under the 'AppModule' folder. The right pane shows the configuration for the 'Employees' entity, including identification, group layout, and query settings.

Identification	
Name	Employees
Short Name	
Description	Employees
Use as List of Values?	<input type="checkbox"/>
Group Image / Icon	

Group Layout	
Layout Style	table-form
Table Overflow Style	inline
Stack Detail Groups on Same...	<input type="checkbox"/>
Same Page?	<input type="checkbox"/>

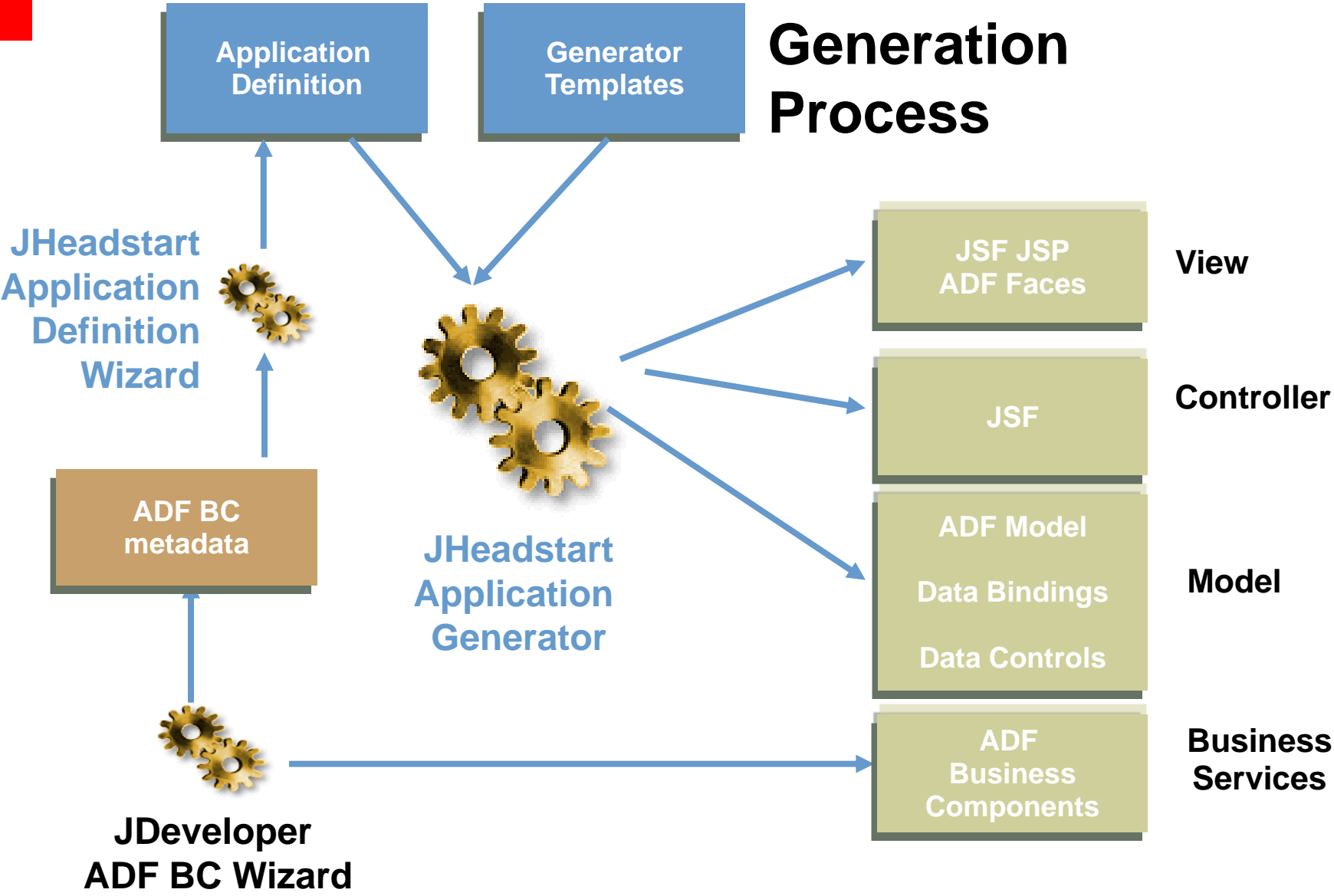
Query Settings	
Data Collection	EmployeesView1
Data Collection Implementation	EmployeesView
Query Bind Parameters	

This attribute determines the number and layout of the pages that are generated to select, view and manipulate the group ViewObject.
form: generates a single-record page.
table: generates a single page in Table (multi-record) format.
table-form: generates a Table Page, as well as a single-record Details page.
select-form: generates a Select Page with a list box where the user can select a record, and a single-record page.

Properties | Templates

Help Apply OK Cancel

Generation Process



JHeadstart Forms Migrator

- Converts Forms .fmb files to ADF Business Components
 - ADF BC Entity Objects created for used tables
 - ADF BC View Objects created for blocks and record group queries
 - ADF BC Application Module created for each form
- Converts Forms .fmb files to JHeadstart Application Definition
 - Groups created for each block
 - LOV Groups created for each LOV / Record Group
 - Group Items created for each item in a block
 - (Stacked) region containers and regions created based on item placement on (tabbed) canvasses and within framed graphics
 - Domains created based on forms item allowable values
 - PL/SQL logic migrated as “documentation” nodes

Application
Definition

Form
Form
Form
Form
(.fmb)

JHeadstart
Forms
Migrator



Migration Process

JSF JSP
ADF Faces

View

JSF

Controller

ADF Model
Data Bindings
Data Controls

Model

ADF
Business
Components

Business
Services

Application
Definition

Form
Form
Form
Form
Form
(.fmb)

JHeadstart
Forms
Migrator



AppModuleApplicationDefinition.xml - Application Definition Editor

The screenshot shows the 'Application Definition Editor' window. On the left is a tree view of the 'AppModule' structure, including folders for 'Items', 'Regions', 'Detail Groups', and various entities like 'Departments', 'Jobs', 'Locations', 'Countries', 'Regions', 'JobHistory', 'EmployeesLOV', and 'Domains'. The 'Employees' entity is selected. On the right is a properties panel with sections for 'Identification', 'Group Layout', and 'Query Settings'. The 'Layout Style' is set to 'table-form'. Below the properties panel is a text area explaining the 'table-form' attribute.

Identification	
Name	Employees
Short Name	
Description	Employees
Use as List of Values?	<input type="checkbox"/>
Group Image / Icon	

Group Layout	
Layout Style	table-form
Table Overflow Style	inline
Stack Detail Groups on Same...	<input type="checkbox"/>
Same Page?	<input type="checkbox"/>

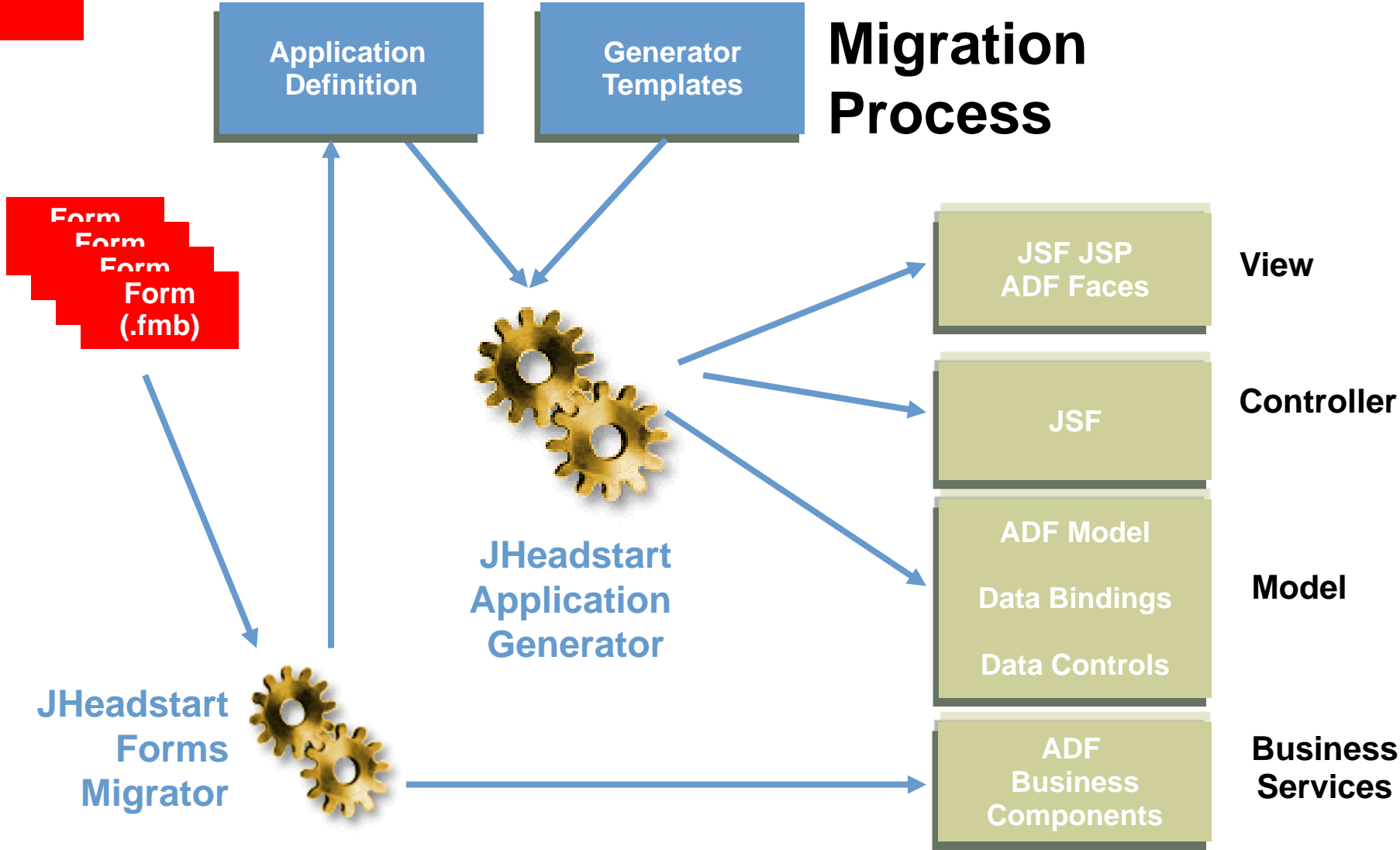
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Properties Templates

Help Apply OK Cancel

Migration Process





ORACLE®

D E M O N S T R A T I O N

Migration Oracle Forms to ADF

JHeadstart and OraFormsFaces

- 1 + 1 = 3!
- JHeadstart further accelerates use of OraFormsFaces
 - Generate pages with embedded Form components using Item display type “OraFormsFaces”
 - Generate Create, Delete, Save buttons that call out to embedded Oracle Form
 - Generate quick/advanced search with table page, detail form page is embedded OracleForm
 - Add security to JSF pages holding Forms Components
- Future plans
 - JHeadstart Form Migrator (JFM) takes Forms menu module, and migrate the menu structure to ADF Faces, with the menu items calling JSF pages with embedded Forms
 - JFM automates required changes to Forms



ORACLE®

D E M O N S T R A T I O N

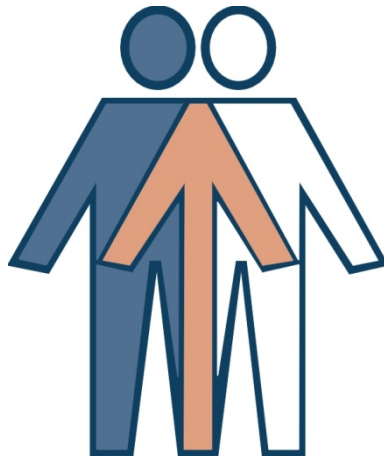
Integrating JHeadstart and OraFormsFaces

Phased Migration

- Step 1 – Upgrade Forms version
- Step 2 – Integrate Forms and JSF/ADF
- Step 3 – Extend application with JSF/ADF
- *(Step 4 – Migrate Forms to JSF/ADF)*



Summary



Summary [1/2]

- Could be used for smooth transition from Forms to web technology
 - ...or just a way to integrate your Forms and web applications
- JavaScript API is the secret ingredient
 - Forms 11 native
 - Forms pre 11 can be extended



Summary [2/2]

- Do it yourself with HTML, CSS, JavaScript, Java and PL/SQL knowledge
- Use the JSF Component Library
 - Google for “OraFormsFaces”
- Can be used with JSF, WebCenter, Portal, PHP, or any other web technology



Questions?



- Please ask now
- Approach me afterwards
- Google for “OraFormsFaces”