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Oracle ADF: The technology behind project fusion

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Agenda

- Application Development Framework (ADF)
  - Overview
  - Goals
  - Architecture
- Productivity with Choice
  - ADF Business Components
  - ADF Model Options
- Binding data to a UI
  - JSF
  - ADF Faces

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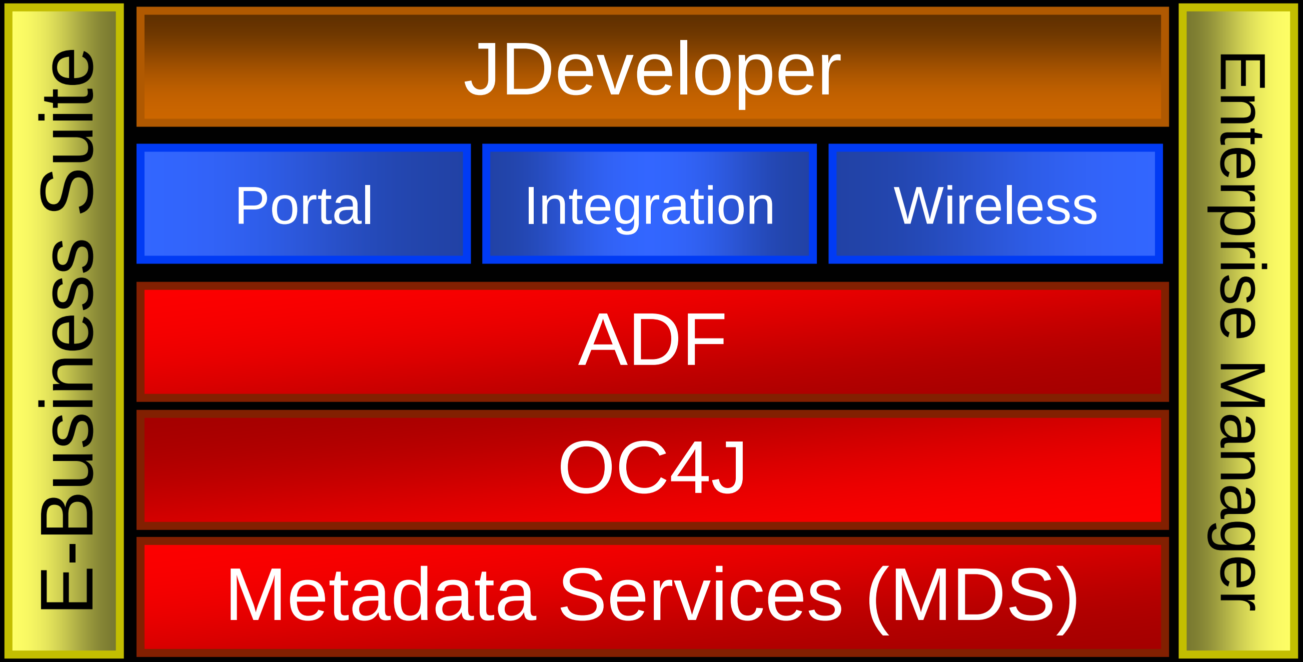
Customer Challenge - Development

- Different architectures
  - J2EE
  - Service Oriented Architecture
  - Event-Driven Architecture
- Different technologies
  - WS, BPM, XML, WSDL, Portal, Wireless, etc.
- Different data sources & access
  - Database, Legacy, Packaged Apps, WS, etc.
- Diverse set of developers
  - Different technical skills
  - Different development styles
  - All need to be productive

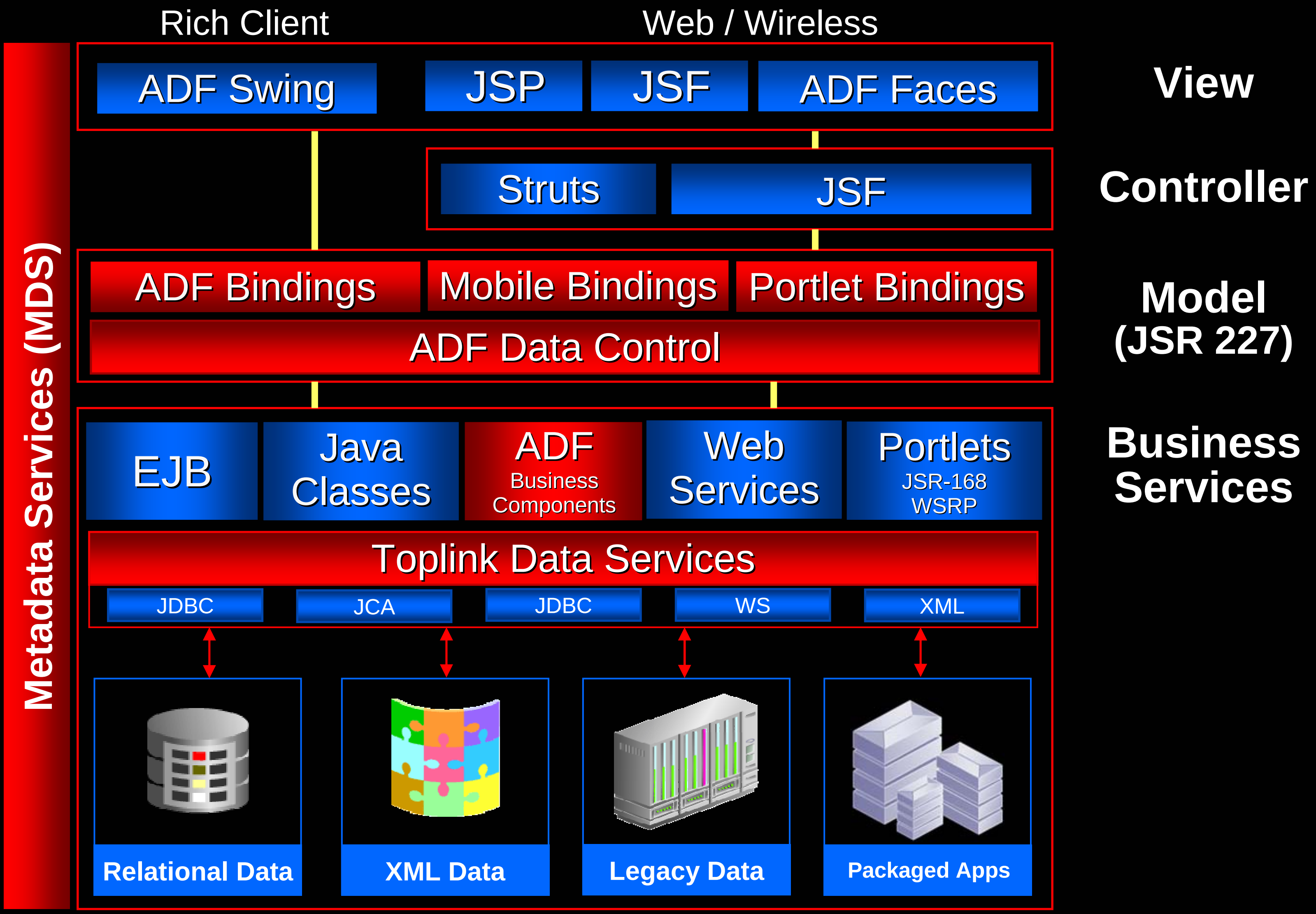
Productivity With Choice

- Oracle ADF & Oracle JDeveloper
  - Productivity increases for all developers
  - Visual & Declarative
  - Framework advantages w/o lock-in
  - Promotes Metadata Usage
  - Enables Service Oriented Development
  - Enables Event Driven Development
- Common Framework
  - J2EE, BPEL, XML, Portal, Wireless, Data, etc.
  - Common Gestures
  - Common Concepts (Data, Visual, etc.)
- Choice of Technologies
- Choice of Development Styles

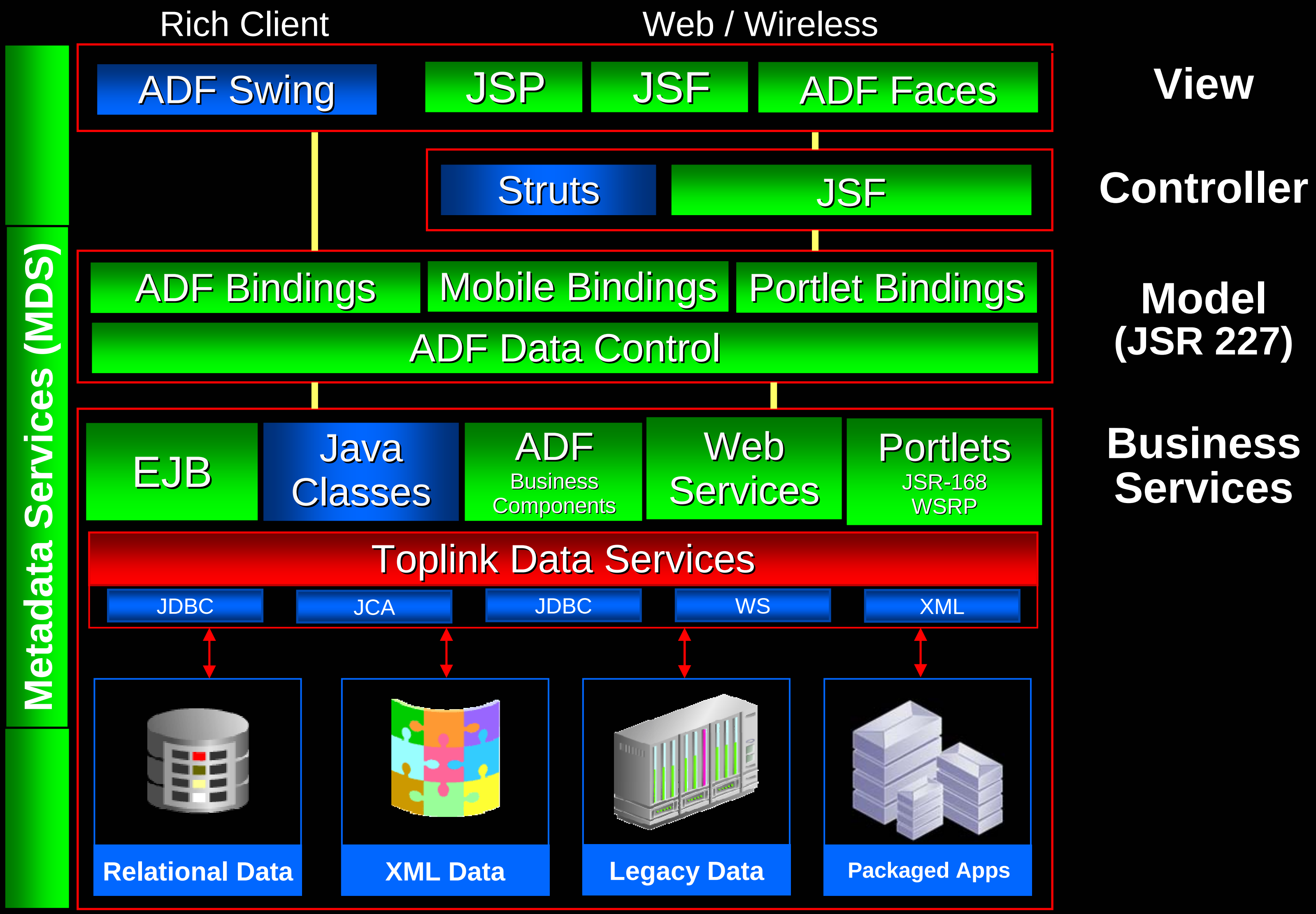
Common Architecture



ADF Architecture



Fusion Architecture



Rich Client

Web / Wireless

View

ADF Swing

JSP

JSF

ADF Faces

Controller

Struts

JSF

Model
(JSR 227)

ADF Bindings

Mobile Bindings

Portlet Bindings

ADF Data Control

Business Services

EJB

Java Classes

ADF
Business
Components

Web Services

Portlets
JSR-168
WSRP

Toplink Data Services

JDBC

JCA

JDBC

WS

XML

Relational Data

XML Data

Legacy Data

Packaged Apps

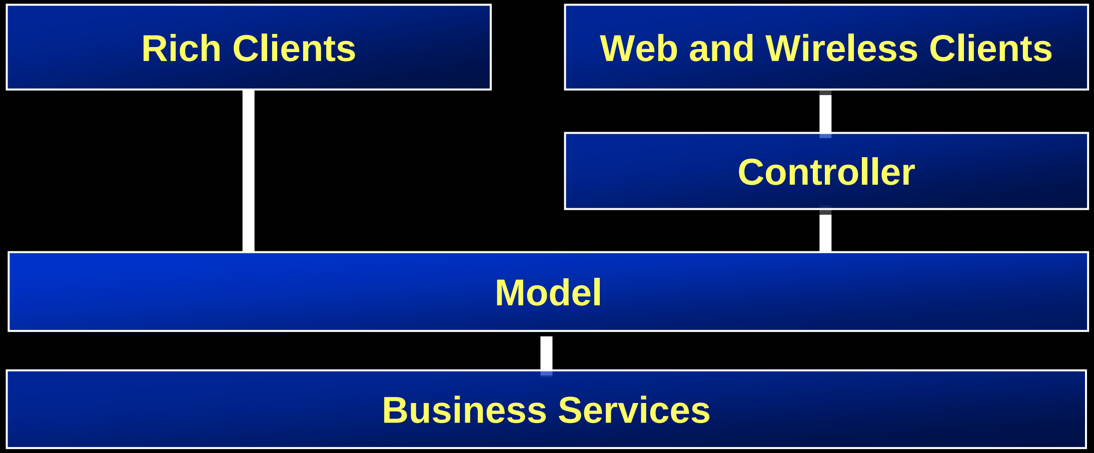
Metadata Services (MDS)

Oracle ADF

- Increase Productivity & Ease-of-use
  - Visual and declarative development
  - Less coding, more reuse
  - Reduce Learning Curve & Resource Issues
  - XML Metadata
- Promote Service Oriented Development
  - Re-usable Business Services
  - Common architecture
- Standards-Base
  - Uses standard data & code whenever possible
  - Clean separation between design-time & runtime
  - Choice of technology – Not all-or-nothing

What Is Oracle ADF?
End-to-end J2EE Framework

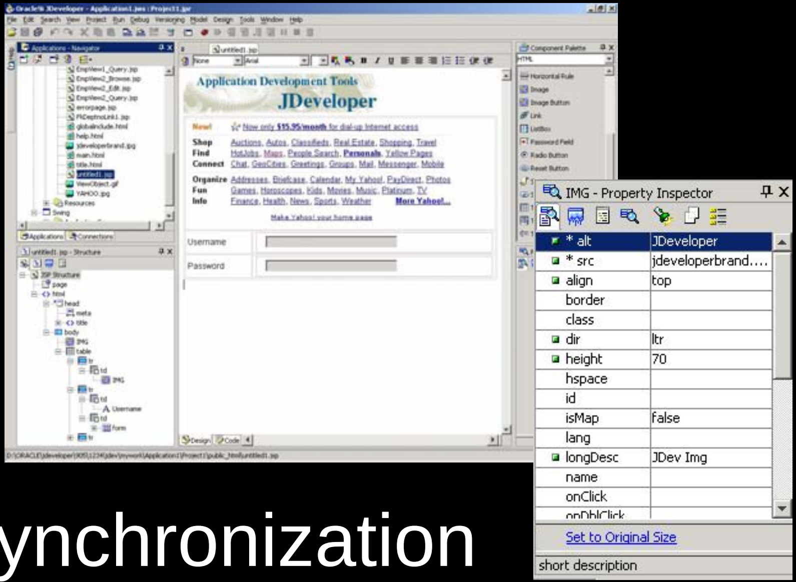
- Implements standard J2EE best practices
- Model-View-Controller (MVC) design pattern



- Focus on the application, not the “plumbing”
- Consolidation and evolution of previous frameworks

Oracle ADF
Visual and Declarative Development

- End-to-end Application Development
  - J2EE & Services
- Visual
  - WYSIWYG editors
  - UML modelers
  - Structure pane
- Declarative
  - Structure pane
  - Property inspector
- Code View/Design View Synchronization
  - No separate generation step - always synchronized
  - Underlying code always accessible



* alt	JDeveloper
* src	jdeveloperbrand....
align	top
border	
class	
dir	ltr
height	70
hspace	
id	
isMap	false
lang	
longDesc	JDev Img
name	
onClick	
onDblClick	

Set to Original Size

short description

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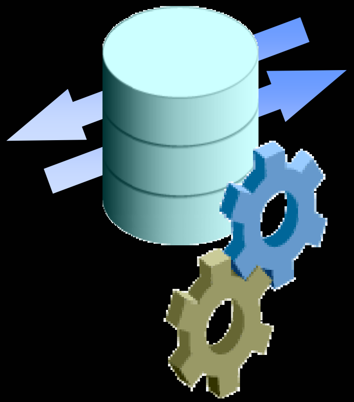
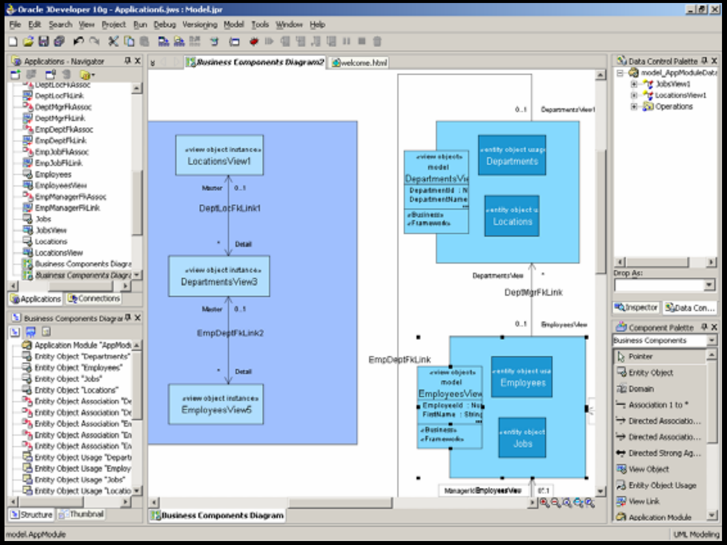
Business Services

- Manages Persistence
  - O/R mapping
  - Queries/DML
- Performs Validation
  - Data validation
  - Business logic
- Choices of implementation
  - ADF Business Components, Toplink, Web Services, Java classes, EJB



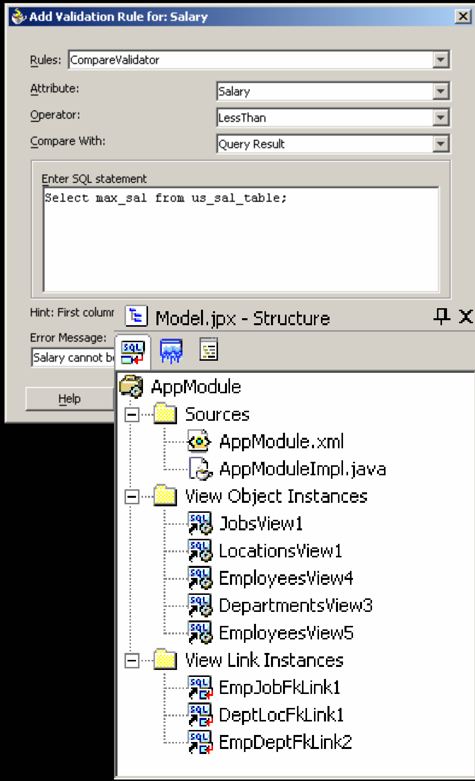
Business Services
Design Time

- UML Modelers, Wizards, Code Editors
  - ADF Business Components
  - Enterprise JavaBeans
  - TopLink
  - Database Schema
  - Web Services
  - Java Classes
- Integrated J2EE server (OC4J) for accelerating develop-run-debug cycle.



ADF Business Components

- Complete business tier development framework
- Implements J2EE design patterns
- Best practice solutions for:
  - Business logic implementation
  - Scalability and performance
  - Optimized database interaction
- Standard deployment options:
  - EJB, web tier, web services



Add Validation Rule for: Salary

Rules: CompareValidator

Attribute: Salary

Operator: LessThan

Compare With: Query Result

Enter SQL statement

```
Select max_sal from us_sal_table;
```

Hint: First colum

Error Message:

Salary cannot b

Model.jpx - Structure

- AppModule
  - Sources
    - AppModule.xml
    - AppModuleImpl.java
  - View Object Instances
    - JobsView1
    - LocationsView1
    - EmployeesView4
    - DepartmentsView3
    - EmployeesView5
  - View Link Instances
    - EmpJobFkLink1
    - DeptLocFkLink1
    - EmpDeptFkLink2

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DEMONSTRATION

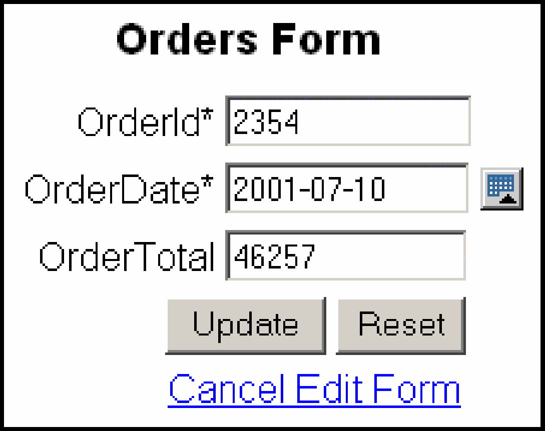
Developing Business Components with ADF

ADF Model

- Abstract service implementation from clients
  - ADF Business Components, EJB, Web Services, Toplink, Java Classes, etc.
  - Implementation of JSR 227
  - Service Oriented Interface
- Declarative Data Binding
  - Common binding of data to UI components
  - Uses EL (standard expression language) to reduce learning curve
  - Clean separation of view and model
- Declarative Data Validation
  - Consistent interface for common validation
  - Extendable for complex application validation
- Design Tools

ADF Model

- Data Controls
- Data Binding
- JSR-227: “A Standard Data Binding & Data Access Facility for J2EE”

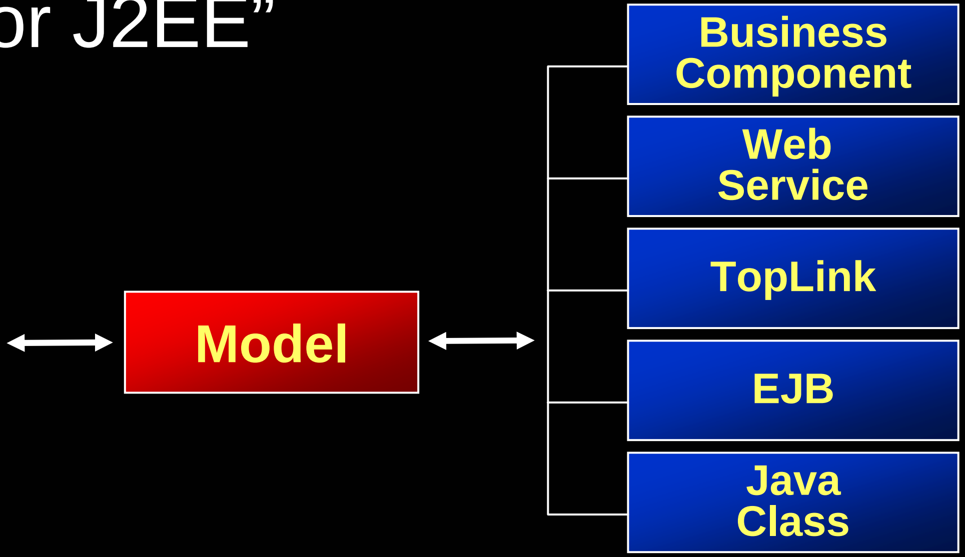


Orders Form

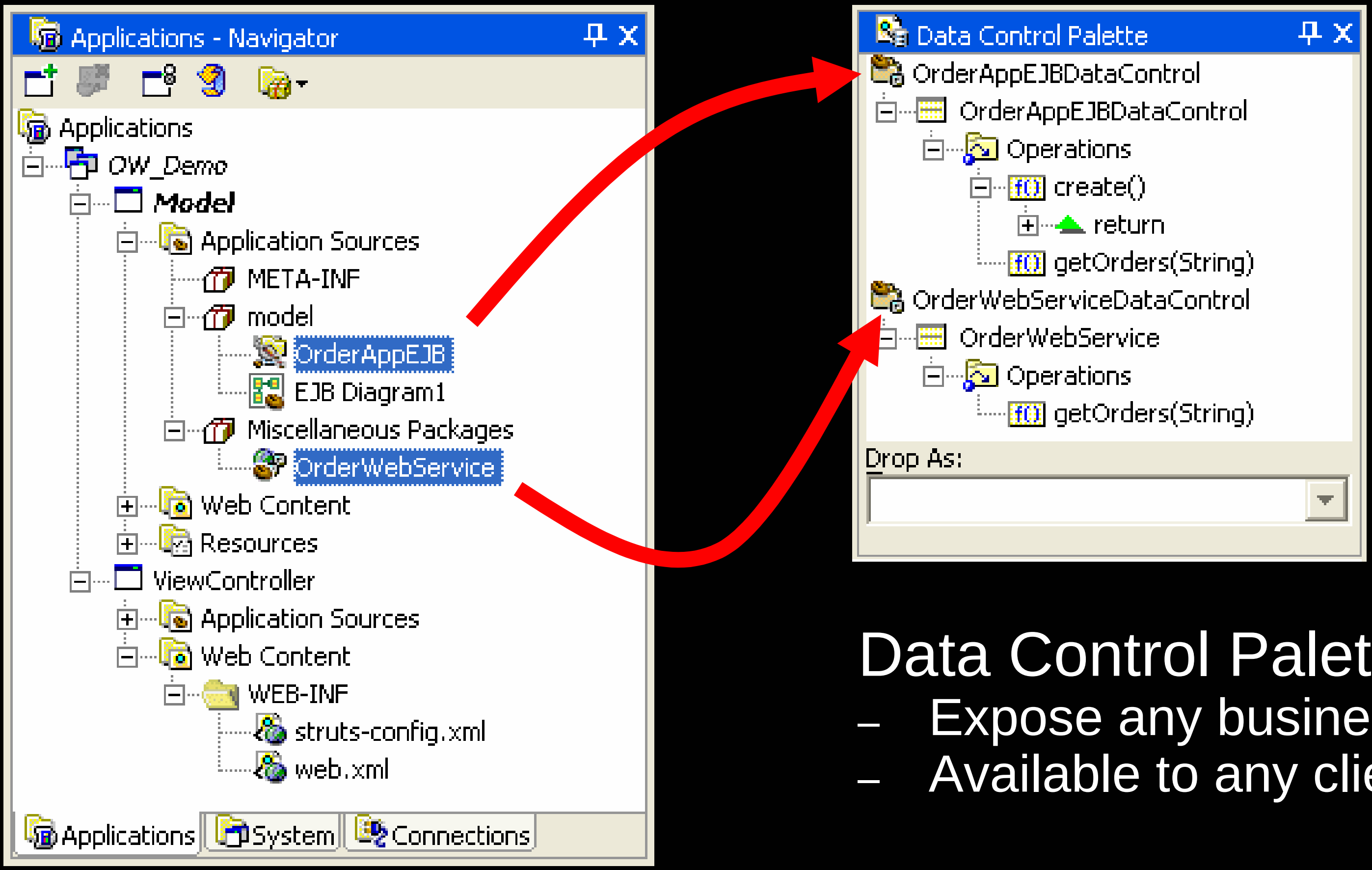
OrderId* 2354

OrderDate* 2001-07-10

OrderTotal 46257



Drag-and-Drop Binding



Data Control Palette

- Expose any business service
- Available to any client

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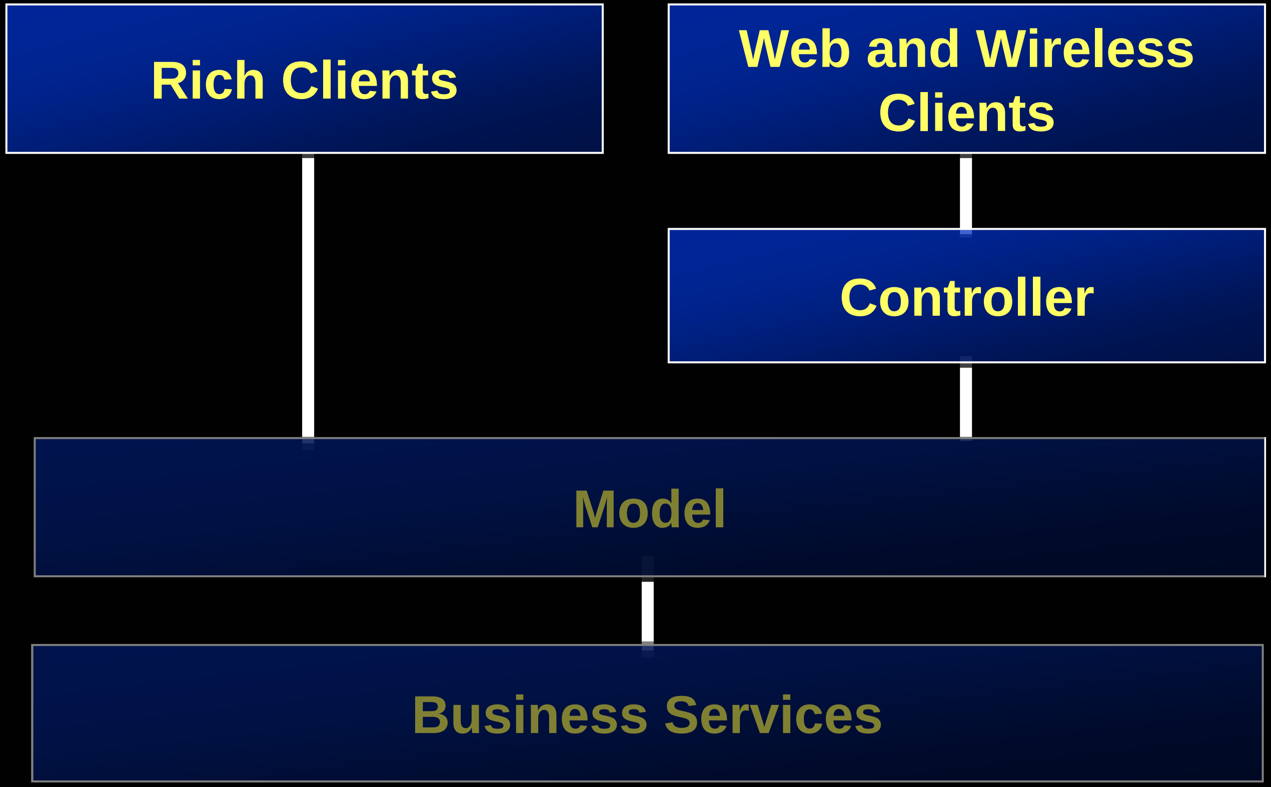
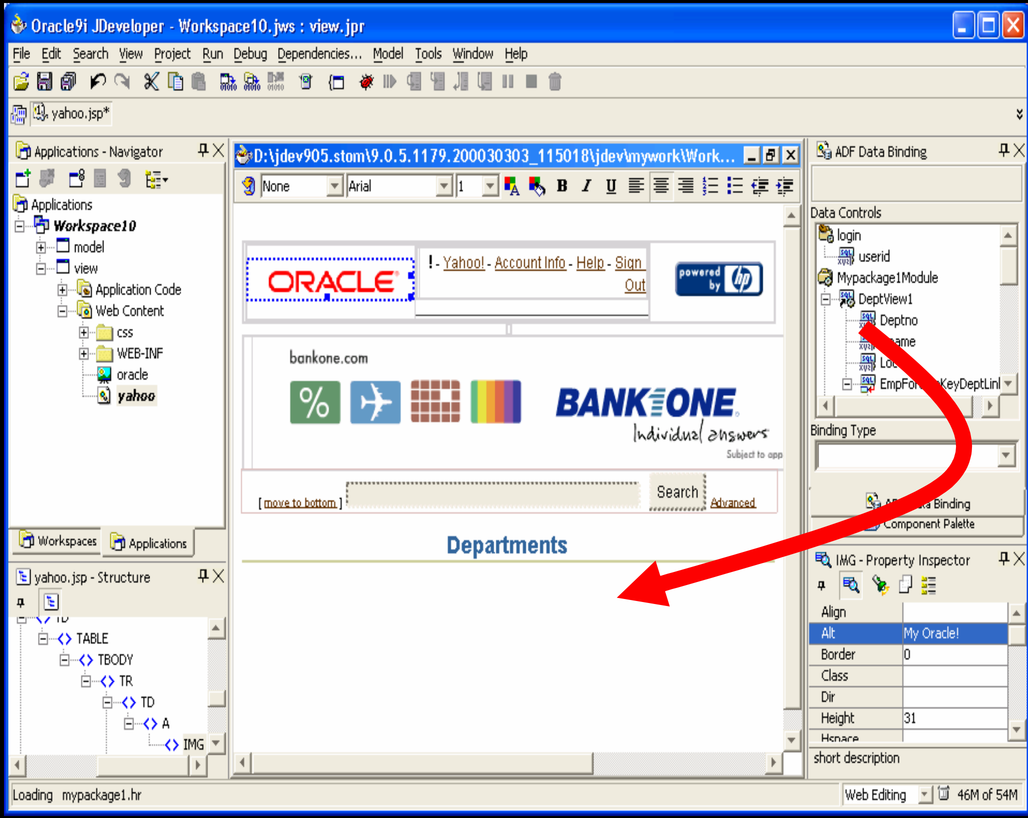
ADF Architecture Overview



UI Development

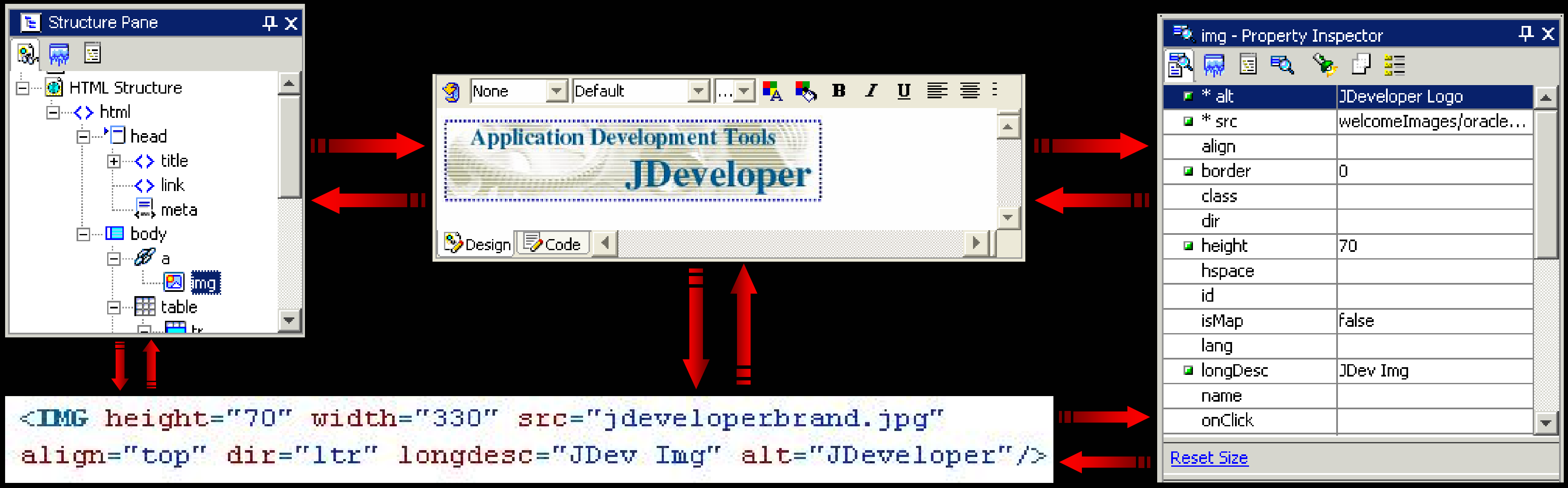
- Visual editors
  - JSP and HTML
  - JavaServer Faces
  - ADF Swing
- Component palette
- Common binding
- Property inspector
- Structure pane



Align	
Alt	My Oracle!
Border	0
Class	
Dir	
Height	31
Hspace	

Design and Code Sync

- Design View / Code View
  - Available for all components
  - Full synchronization with the code

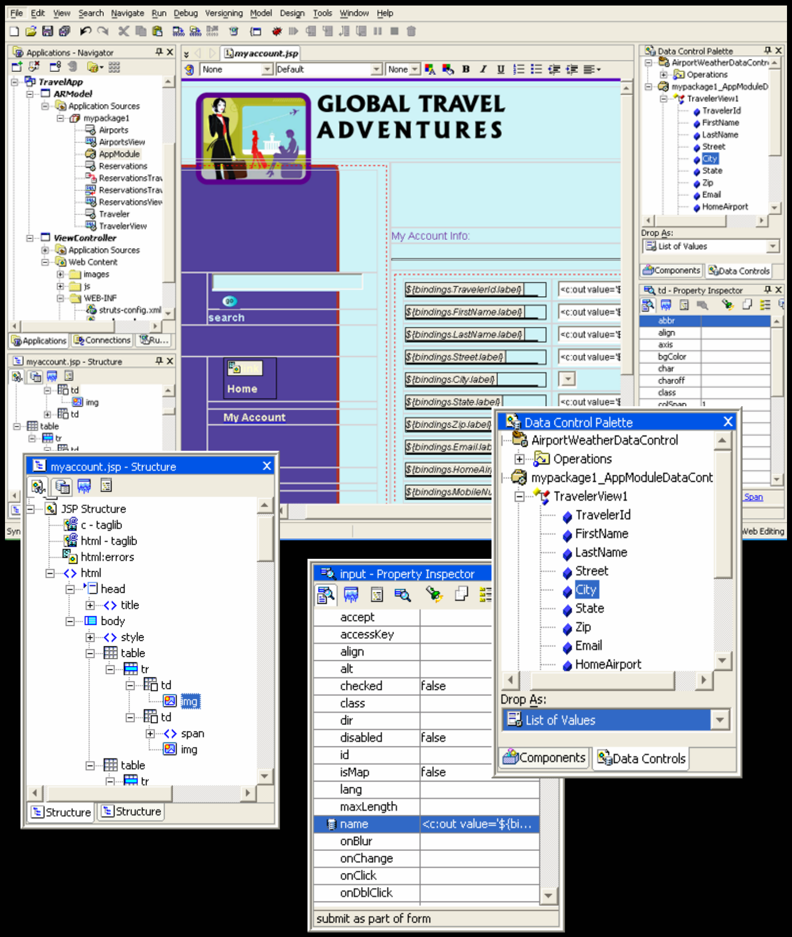


```
<IMG height="70" width="330" src="jdeveloperbrand.jpg"
align="top" dir="ltr" longdesc="JDev Img" alt="JDeveloper"/>
```

* alt	JDeveloper Logo
* src	welcomeImages/oracle...
align	
border	0
class	
dir	
height	70
hspace	
id	
isMap	false
lang	
longDesc	JDev Img
name	
onClick	

JSP Visual Design

- Synchronized JSP Visual Design
  - Code Editor
  - Structure Pane
  - Property Inspector
  - Data Control/Component Palette
- Integrated with JSTL/EL, Struts, and JSF
- Universal ADF Databinding
  - Toplink, EJB, BC4J
  - Web Services
  - Drag and drop UI Components

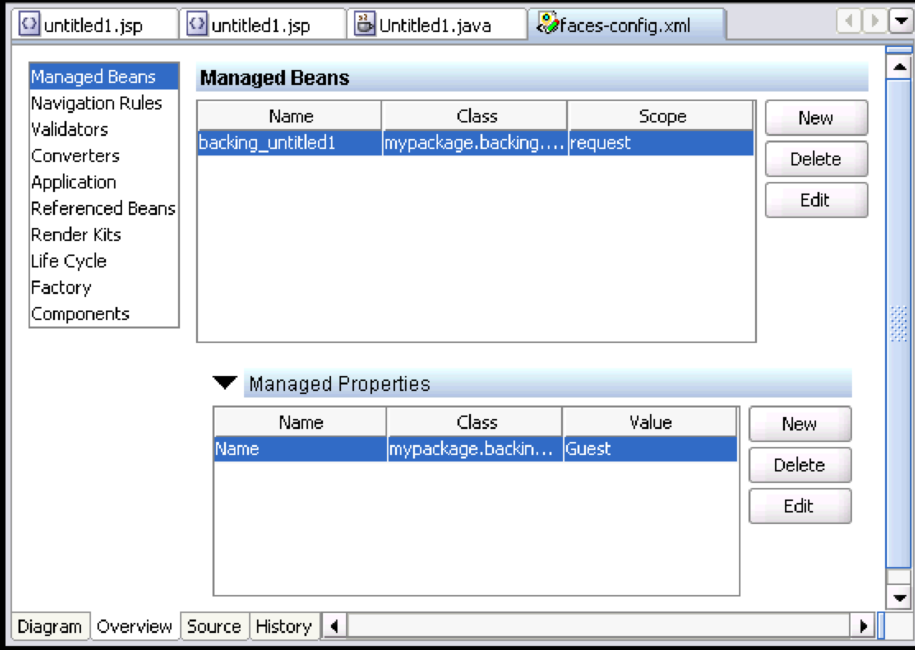


accept	
accessKey	
align	
alt	
checked	false
class	
dir	
disabled	false
id	
isMap	false
lang	
maxLength	
name	<c:out value='${bi...
onBlur	
onChange	
onClick	
onDblClick	

submit as part of form

JavaServer Faces

- Visual development
  - JSF UI Component visual editing
  - “Autobinding” backing code generation option
  - Visual design for mobile clients
  - Synchronized with faces-config.xml
  - Drilldown to pages
- Declarative
  - JSF Editor
  - Structure Pane
  - Property Inspector



Managed Beans

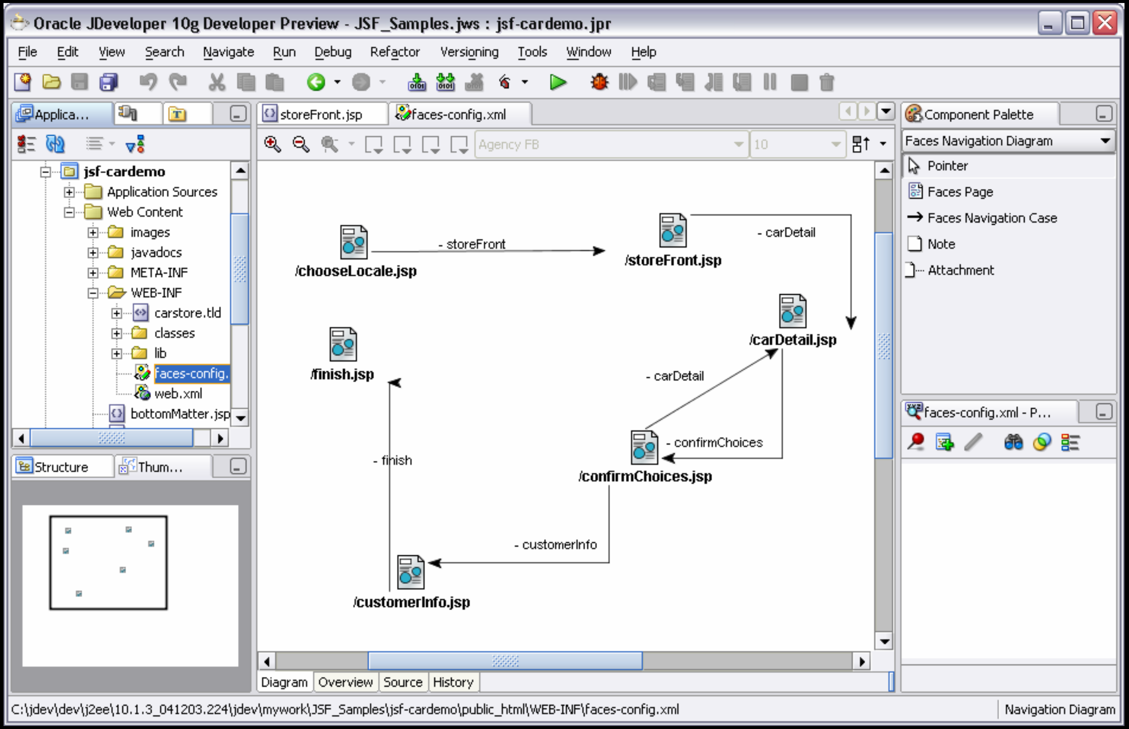
Name	Class	Scope
backing_untitled1	mypackage.backing....	request

Managed Properties

Name	Class	Value
Name	mypackage.backin...	Guest

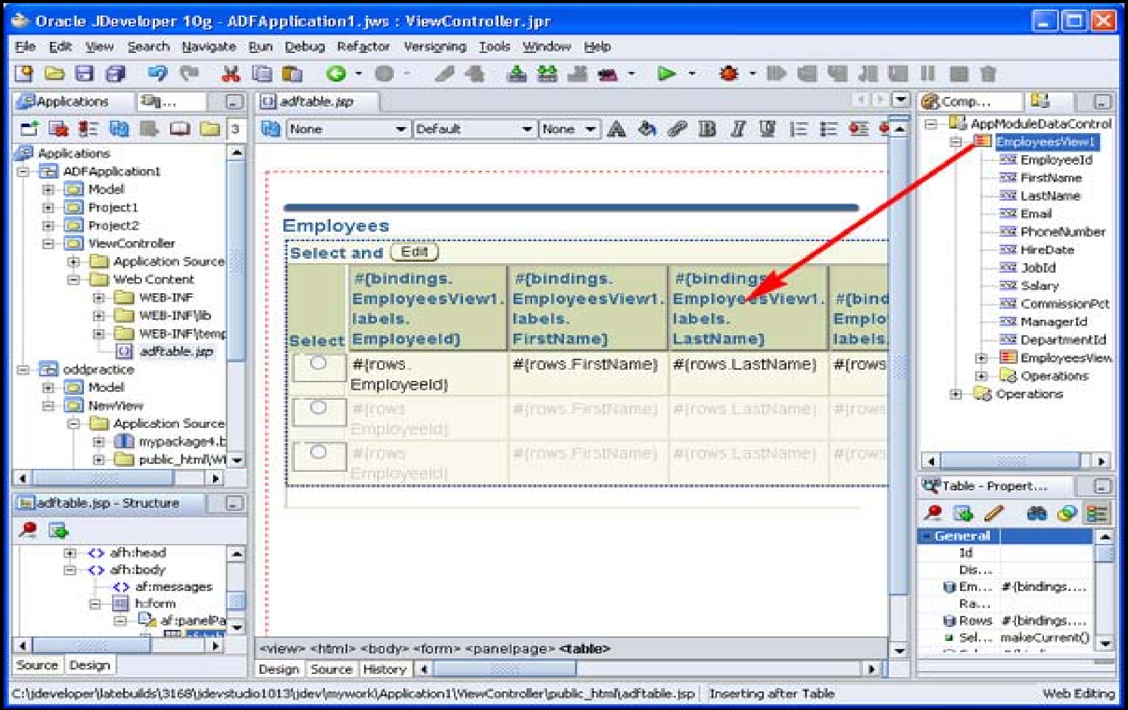
JSF and JDeveloper 10.1.3

- JSF Page Flow
  - Visually design Faces navigation model



JSF and JDeveloper 10.1.3

- Declarative data binding – JSR 227
  - Drag and drop data binding support



Select	#{bindings.EmployeesView1.labels.EmployeeId}	#{bindings.EmployeesView1.labels.FirstName}	#{bindings.EmployeesView1.labels.LastName}	#{bind Emplo labels.
○	#{rows.EmployeeId}	#{rows.FirstName}	#{rows.LastName}	#{rows
○	#{rows.EmployeeId}	#{rows.FirstName}	#{rows.LastName}	#{rows
○	#{rows.EmployeeId}	#{rows.FirstName}	#{rows.LastName}	#{rows

C:\jdeveloper\latebuilds\3168\jdevstudio1013\jdev\mywork\Application1\ViewController\public_html\adftable.jsp Inserting after Table

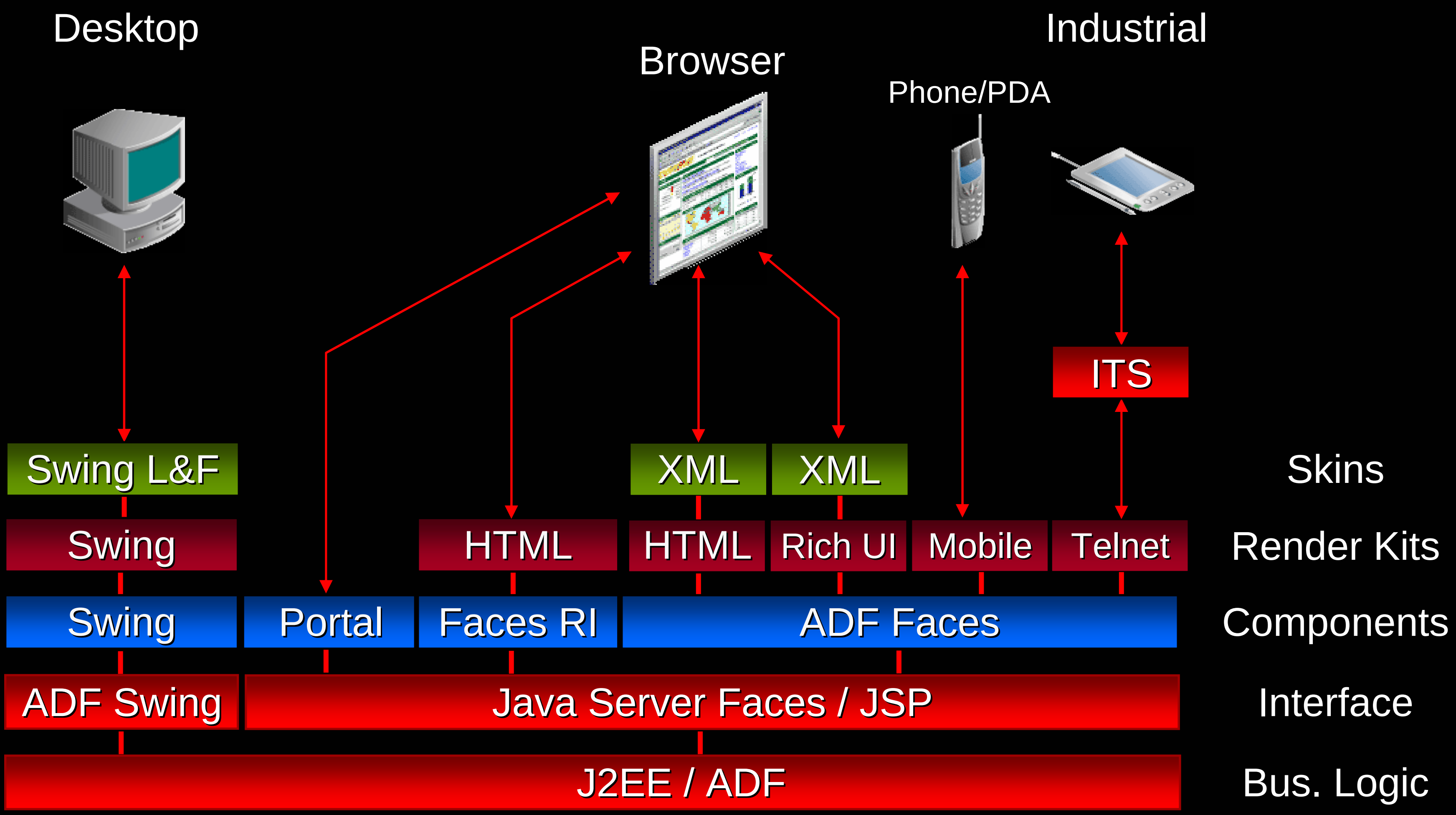
Oracle ADF Faces

- Provides complementary set of components to JSF 1.1 base components
- 100% JSF standard compliant
- Deployable on any compliant implementation of JSF
  - Reference Implementation
  - MyFaces

ADF Faces

- Rich set of standard components
  - 100+ components
  - Works with any Faces-compliant IDE
  - Rich browser experience
- Multiple Target Devices
  - Browser – HTML
  - Browser – DHTML/Javascript
  - Mobile/PDA
- Single Programming Model = J2EE/Faces
- Declarative Look and Feel
  - Example: www.orablogs.com
- ADF Integration
  - JSR 227 Data Binding
  - Validation Framework

Consistent Programming Model



Desktop

Browser

Industrial

Phone/PDA

ITS

Swing L&F XML XML Skins

Swing HTML HTML Rich UI Mobile Telnet Render Kits

Swing Portal Faces RI ADF Faces Components

ADF Swing Java Server Faces / JSP Interface

J2EE / ADF Bus. Logic

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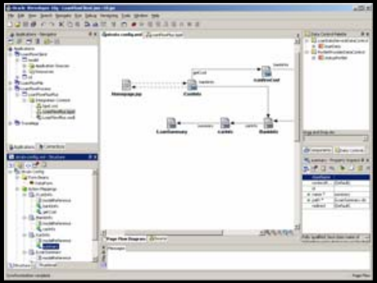
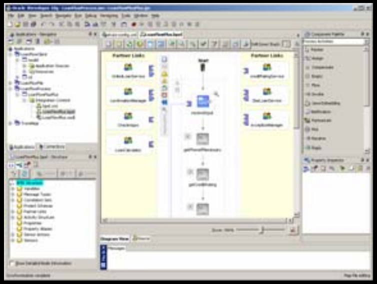
DEMONSTRATION

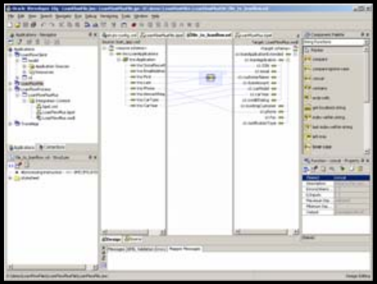
Binding Data to a UI using ADF Data Binding and ADF Faces

Oracle JDeveloper 10G

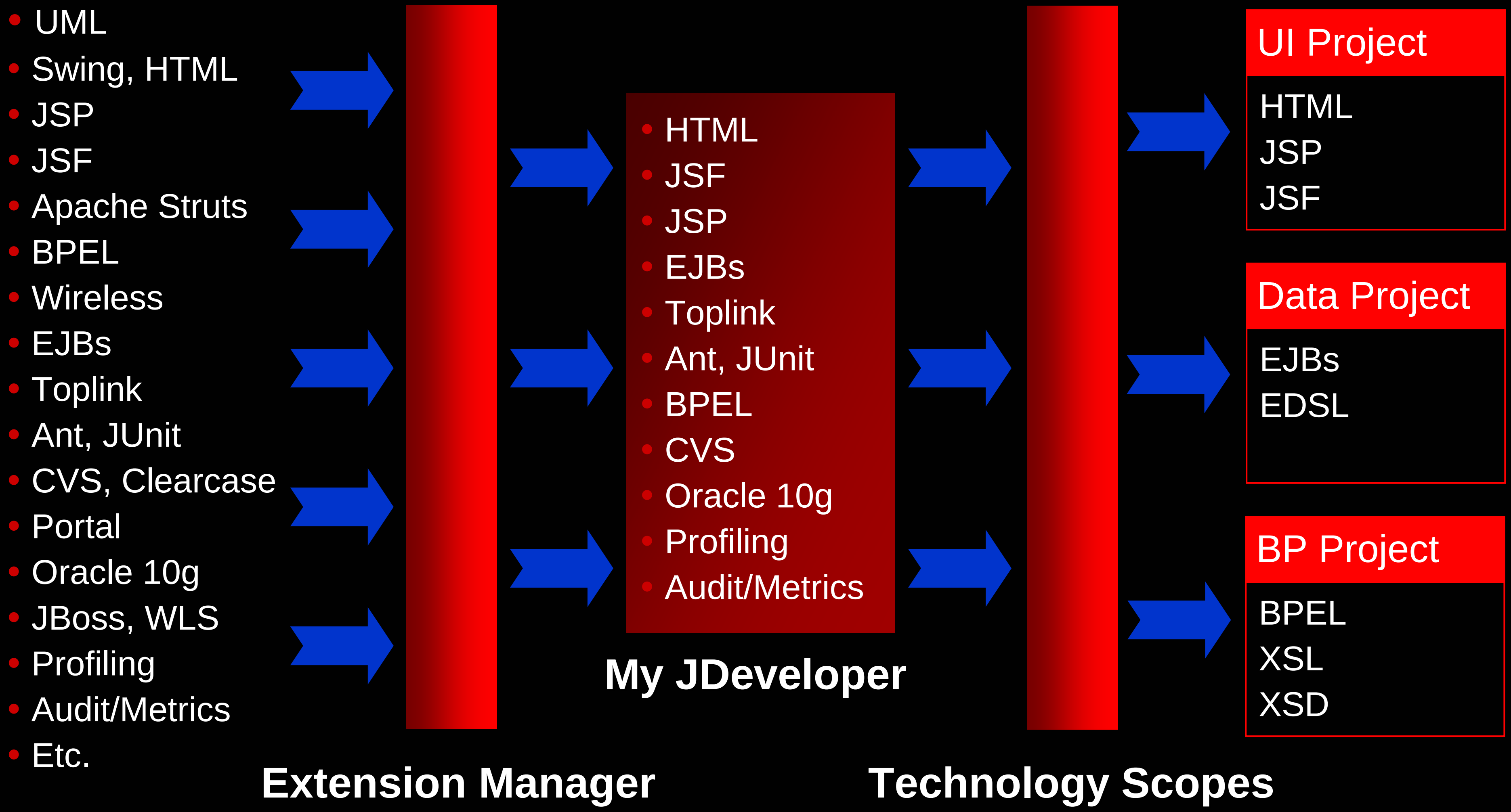
- Standards-based IDE
- Single stack for all development
  - J2EE & XML Development
  - Portal, BPEL, BI & Wireless Development
  - Service-Oriented Development
  - Event-Driven Development
- Productivity With Choice
  - Supports choice of technologies
  - Supports choice of development styles
  - Supports choice of Application Servers
- Adapts to Environment
  - Not the other way around







More Choices – Less Complexity



- UML
- Swing, HTML
- JSP
- JSF
- Apache Struts
- BPEL
- Wireless
- EJBs
- Toplink
- Ant, JUnit
- CVS, Clearcase
- Portal
- Oracle 10g
- JBoss, WLS
- Profiling
- Audit/Metrics
- Etc.

Extension Manager

- HTML
- JSF
- JSP
- EJBs
- Toplink
- Ant, JUnit
- BPEL
- CVS
- Oracle 10g
- Profiling
- Audit/Metrics

My JDeveloper

Technology Scopes

UI Project

HTML
JSP
JSF

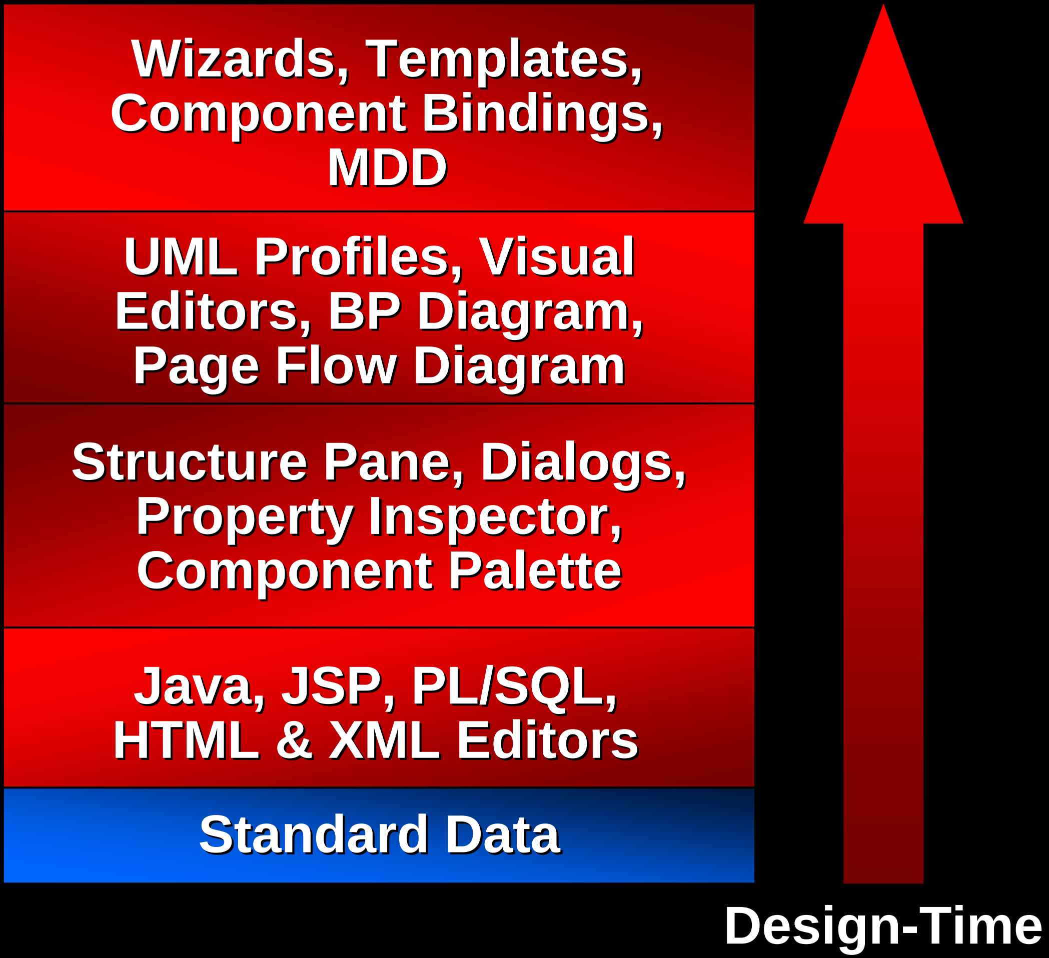
Data Project

EJBs
EDSL

BP Project

BPEL
XSL
XSD

Choice of Development Styles



Wizards, Templates, Component Bindings, MDD

UML Profiles, Visual Editors, BP Diagram, Page Flow Diagram

Structure Pane, Dialogs, Property Inspector, Component Palette

Java, JSP, PL/SQL, HTML & XML Editors

Standard Data

Design-Time

QUESTIONS
&
ANSWERS

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