

Rich Enterprise Applications

Powered by Oracle Application
Development Framework
(Oracle ADF)



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Developing for Mobile Devices with Oracle ADF

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Oracle Application Development Tools



Agenda

- • Overview
- ADF Mobile Browser
 - Mobile Browser Compatibility and Rendering Support
 - Develop Mobile Optimized User Interface
- ADF Mobile Client
 - Overview and Architecture
 - Developing Mobile ADF Business Components
 - Create Mobile Task Flow and Views
 - Deploy Synchronization Rules and Application
 - Adding Web Services Support
- Fusion Middleware and Applications Integration

Multi-Channel Development

Oracle Application Development Framework



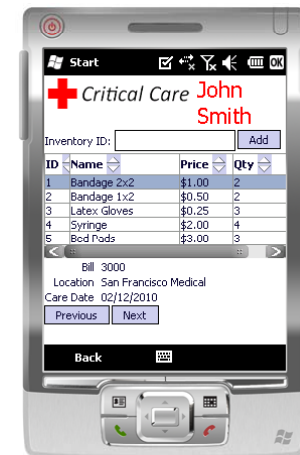
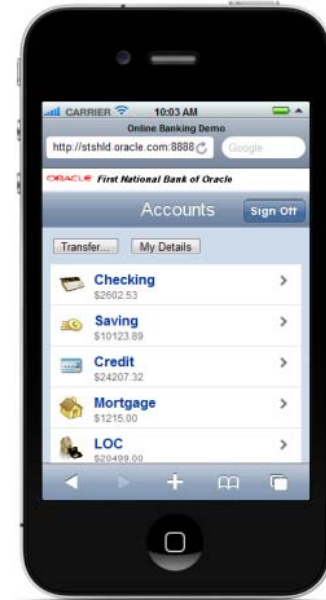
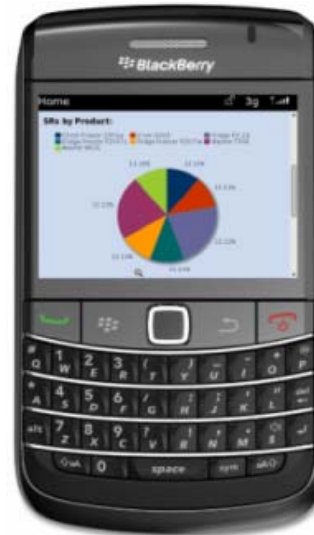
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Oracle ADF Mobile Overview

- Two approaches
 - ADF Mobile Browser
 - ADF Mobile (Native) Client
- Extension to enterprise applications
- Reuse business services
- Reuse developer skills & tooling



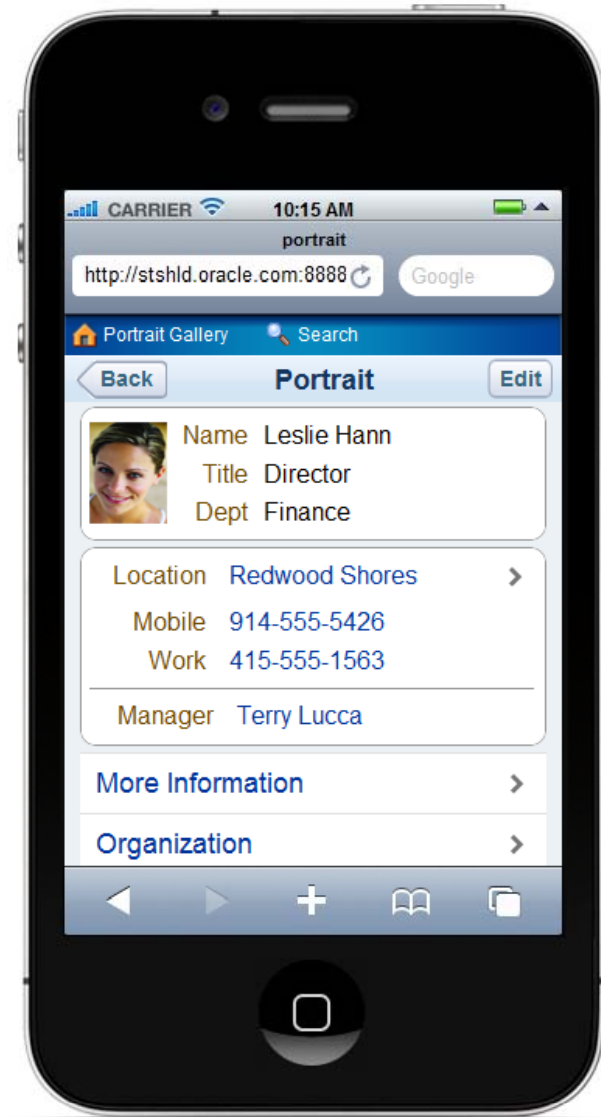


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ADF Mobile Browser

- Delivers mobile-optimized user experience
- Adjusts to device's capabilities automatically
- Supports wide variety of devices
- Supported through JavaServer Faces Trinidad Components and Mobile Optimized CSS





Trinidad JSF Components

- Part of the Apache MyFaces Trinidad project
- Supports over 60 mobile optimized JSF Components
- Detects browser capabilities automatically
- Supports AJAX functionality such as Partial Page Refresh
- Downgrades gracefully to plain HTMLs for consumer phone mobile browsers
 - No special coding or handling needed from developer



Enabled/Supported Mobile Browser Features


Browser	Java Script	CSS	PPR
Android WebKit	Yes	Yes	Yes
iPhone Safari	Yes	Yes	Yes
BlackBerry 4.6 +	Yes	Yes	Yes
BlackBerry 4.5	No	Yes	No
Windows Mobile 5/6	Yes	Yes	Yes
Windows Phone 7	Yes	Yes	Yes
Nokia S40/60 WebKit	Yes	Yes	No
Plain HTML	No	Yes	No

Mobile UI Optimization Through CSS

- Mobile optimized user interface is achieved primarily through Mobile-Optimized Style Sheets
- Latest JDeveloper adds mobile CSS to the project
- See details in ADF Mobile Skinning Guide

Image and Primary Detail with Link

iPhone Screenshot



Source Code

```
<tr:table horizontalGridVisible="false" var="row" width="100%" ...>
  <tr:column>
    <tr:image source="#{row.bindings.TypeIconUrl.inputValue}"/>1
  </tr:column>
  <tr:column inlineStyle="width:100%;">
    <tr:panelGroupLayout layout="vertical">
      <tr:commandLink text="#{row.bindings.DescShort.inputValue}"
        action="detail" styleClass="af_m_listingLink">
    </tr:commandLink>
```



Development Demonstration



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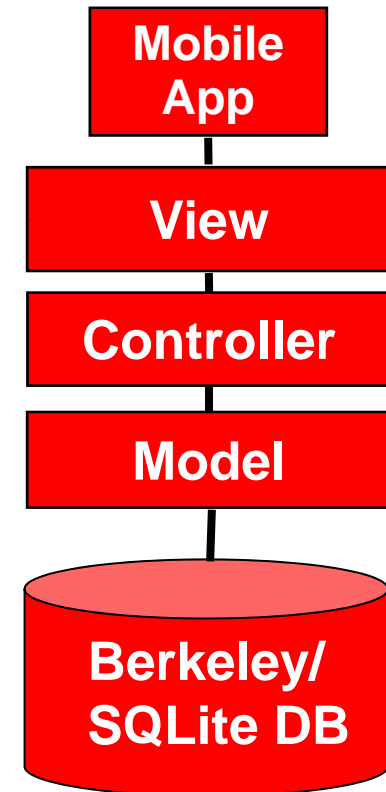
What is ADF Mobile Client?

- Extends Oracle Enterprise Applications to on-device mobile clients
- Develop-once, deploy to multiple platforms
- Deep Integration with device services such as Contact/Calendar Apps, Barcode Scanner, GPS, etc.
- Connectivity Options: Online, Offline, and Store-and-Forward
- Native Application Look-and-Feel and Performance



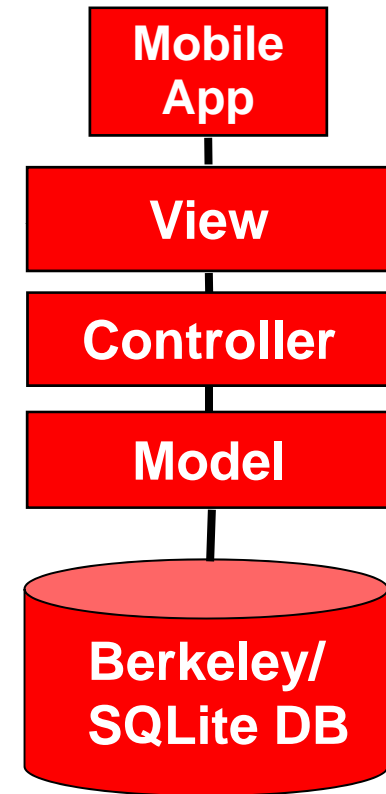
ADF Mobile Client Runtime

- Follows the same MVC architecture as “Big ADF”
- Business Logic:
 - Subset of ADF BC functionality re-implemented on J2ME
 - No Groovy Support
 - Targets Mobile (SQLite DB)
 - Web Services Support (SOAP)
- Model/Binding:
 - Mobile implementation of JSR 227
- Controller:
 - Subset of ADF Task Flow functionality



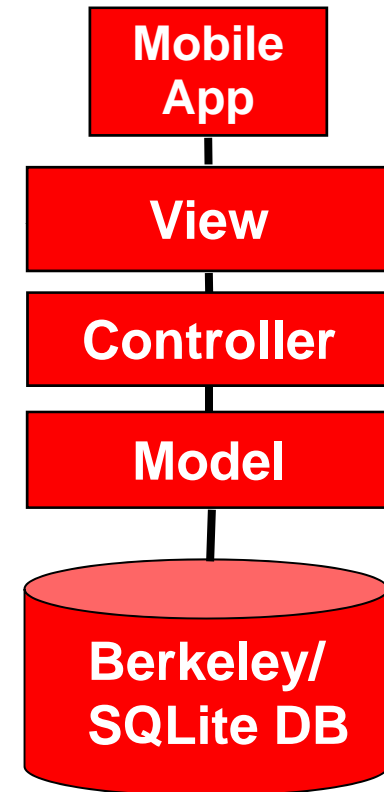
ADF Mobile Client Runtime

- View:
 - Common component set across all mobile platforms
 - Subset of ADF Faces components
 - Rendered using device-native UI controls
- Mobile Application Definition:
 - XML tags similar to web apps
- Mobile Database:
 - SQLite Database (SQL 92 w/ Named Bind Variable)
 - Berkeley Database supported via its SQLite API/Interface
 - Transparent to ADF Mobile Client



ADF Mobile Client Runtime

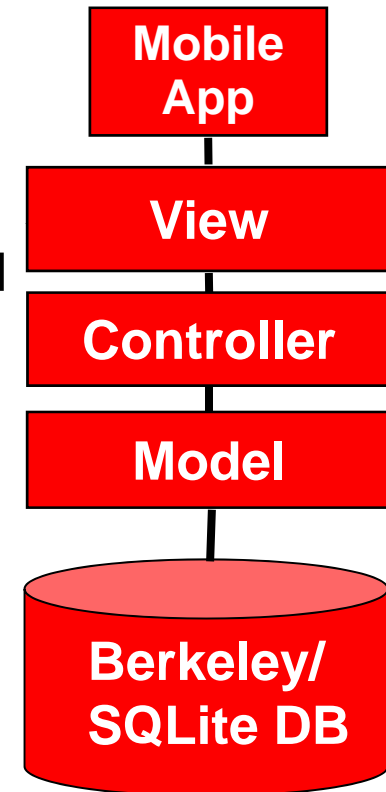
- Device Services Integration
 - Barcode scanner abstracted as Data Control
 - Other services (calendar, GPS, etc) will be abstracted as DC in future releases
- Data-Type Mapping
 - New “ADF Mobile Client” Data Map
 - Similar to “Oracle” Data map
 - Necessary due to difference between JavaME vs. JavaSE vs. Device Platform data type support



ADF Mobile Client Runtime

- **Framework Extension Support**

- Application Module/EO/VO
- Java data type support is a combination of JavaME and ADF Mobile Client implementation
- Managed Bean Support
 - Need extra interface methods to workaround lack of Java reflection support
 - Need to be explicitly declared by developer in custom Java code (invokeMethod method)
 - UI component attributes cannot be explicitly set by Managed Bean
 - Must reference a Managed Bean Method





Mobile Client Platform Support

- Current:

Device	Versions
<ul style="list-style-type: none">• RIM BlackBerry	<ul style="list-style-type: none">• v5, v6
<ul style="list-style-type: none">• Microsoft Windows Mobile	<ul style="list-style-type: none">• v5, v6

- Planned:

- Android
- iOS

*Subject to change



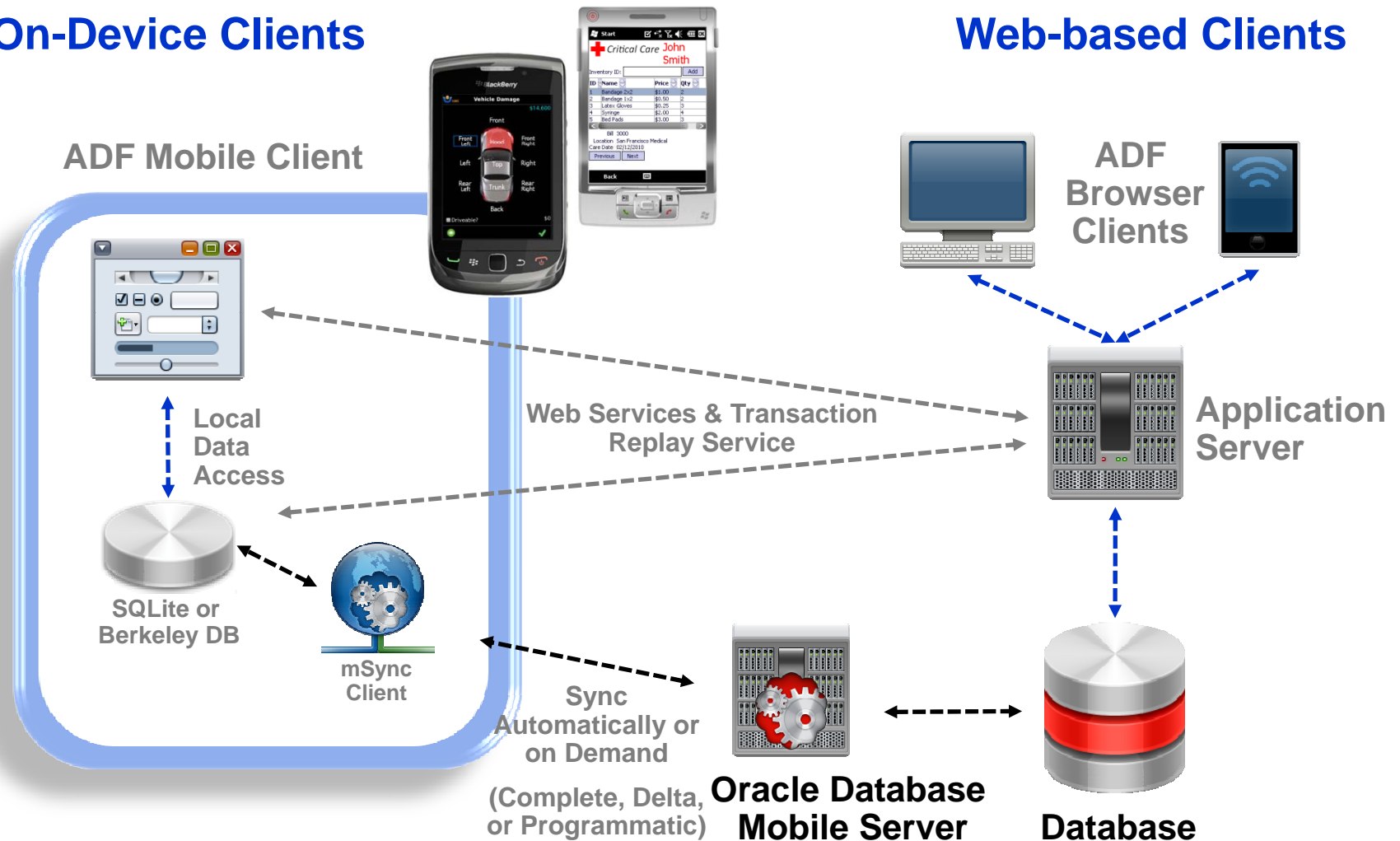
Oracle (Lite) Mobile Server and Sync Client Integration

- Provides Data Synchronization Between Oracle DB and Mobile DB
- Application Management and Provisioning Support
 - For Windows Mobile (Current version) and Android (Planned for 2011)
- Mobile Client integrates with Sync Client on device
 - Sync client is available both as stand-alone client and libraries
 - ADF Mobile Client can invoke the libraries directly from application
 - ADF Mobile Client also has built-in Sync dialog box

ADF Mobile Runtime Architecture

On-Device Clients

Web-based Clients





Mobile Transaction Replay Service

- A server-side component
 - Implemented as a Servlet on the “server” ADF application
- Replays client transactions against server ADF application
- Transactions are delivered through Oracle Lite Mobile Server
 - Synchronized between client and server database tables
- Server side component picks up transaction from DB table and replays them



High Level Development Lifecycle

- Environment setup
- Publish Server/Base ADF App as ADF Lib
 - Needed only for DB Sync with ADF BC based ADF app
- Create ADF Mobile Client App
 - Model Project: ADF BC or Web Services
 - MobileClient Project: Task Flow and Pages
- Create Deployment Profile
 - For Sync rules (optional)
 - For Mobile Client
 - Icons, application names, attributes, etc.
 - Mobile Client database connection and DB init scripts



High Level Development Lifecycle

- Deploy Runtime and Sync Client to Mobile Devices or Simulator
- Deploy for Development testing
 - Deploy Sync rules (Data Publication) from Model Project
 - Optional
 - Deploy Mobile Client app
 - To simulator, device, or “packages” that can be deployed using external management tools
- Synchronize Data
 - Use sync client or Mobile Client sync dialog to init DB



High Level Development Lifecycle

- Debug
 - ADF BC Tester
 - Debug by hooking into mobile device simulator or device
- Deploy to production environment
 - Deploy sync rules from dev to test/prod environments
 - Supported by Oracle Lite Mobile Server
 - Generate Mobile Client package
 - WM: CAB files
 - BlackBerry: CODs (App), JAD (deploy over web), and ALX (using BlackBerry Desktop Manager)
 - Need BlackBerry Signing Key
 - Deploy to Oracle Lite Mobile Server or BlackBerry Enterprise Server



Development Environment

- JDeveloper and ADF Mobile Client Extensions
- BlackBerry Development:
 - BlackBerry Java Development Environment
 - BlackBerry device simulators
- Windows Mobile Development
 - Windows Mobile Emulator and SDK
 - ActiveSync (For Windows XP development machine)
- Database Synchronization (Optional)
 - Oracle Enterprise/standard DB
 - Oracle Database Mobile Server
 - Mobile Workbench
- Configure JDeveloper Preferences
 - Tools-Preferences-Mobile Client tab



Development **Demo**



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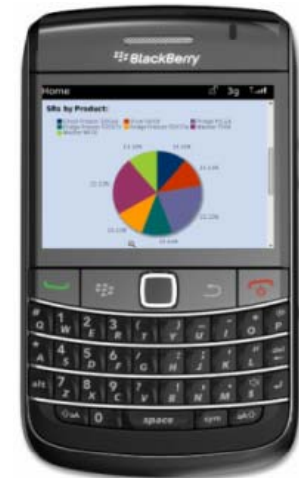
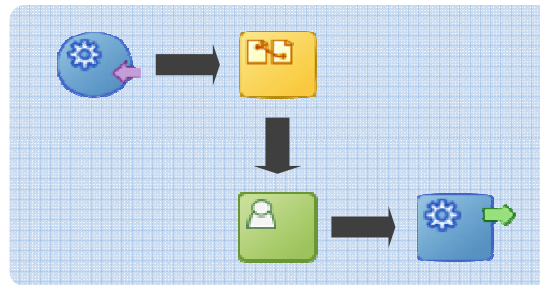
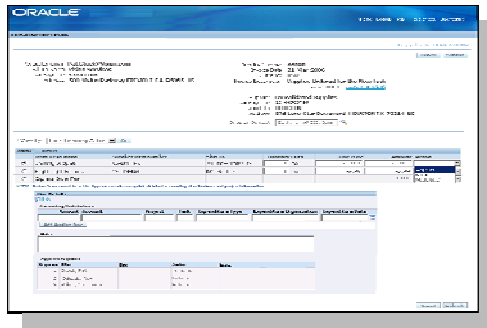
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Extending Enterprise Applications

Support Workers, Customers, Partners On-the-Go

- Extends enterprise applications to mobile clients
- Pre-built connectors between Fusion Middleware and Applications accelerates integration process
- Process orchestration and SOA enablement through Oracle BPM and SOA Suite



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APPLICATIONS



ORACLE
FUSION MIDDLEWARE **11g**

**Mobile
Client**

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For more information

- Oracle Technology Network ADF Mobile Page
 - <http://www.oracle.com/technetwork/developer-tools/adf/overview/adf-mobile-096323.html>
 - Links to developer guides, tutorials, data sheets, white papers, etc.
- ADF Mobile team Blogs
 - <http://blogs.oracle.com/mobile>
- Oracle University Course Under Development
 - Will be available as both self-service course and (ad-hoc) instructor led course
 - Available in mid 2011



For more information

- Sample applications
 - Available in the JDeveloper Installation Directory
 - <JDev Install Folder>\jdev\extensions\oracle.adfnmc.core\Samples\Samples.zip
 - Organized to focus on specific aspects of the application, such as:
 - ADFBC: demonstrating creating AppModule custom Java code, bind variables and view criteria support, etc.
 - Navigation: demonstrating custom navigation rules
 - WebServices: demonstrating consuming SOAP-based web services
 - eSureMobile: demonstrating an example of a complex mobile application
 - Review readme.txt for details

Learn More at ODTUG K-Scope 2011

- <http://kscope11.com/>
- Special Fusion Middleware Track
- 50 dedicated sessions and hands on labs
- Presented by Oracle ACEs, developers and product managers
- ADF, WebCenter, SOA Suite and more



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Conference Tracks

Time	Basics	Advanced	Hands on Lab	Best Practices	Enterprise
8:00 – 8:15	Conference orientation				
8:15 – 9:00	Keynote: Rich Enterprise Applications				
9:00 – 10:00	Rich Web UI made simple - an ADF Faces Overview	Developing for Mobile Devices with Oracle ADF	LAB – Web Applications with ADF Part 1	Starting an Enterprise ADF project	Developing with Oracle WebCenter
10:00 – 11:00	Next Generation Controller for JSF	ADF Binding Internals	LAB – Web Applications with ADF Part 2	The bit every one forgets: Unit testing your ADF applications with JUnit	Build Killer Sites with Oracle WebCenter
11:00 – 12:00	From Forms to ADF - When, Why, How?	Advanced ADF Faces - Skinning & Javascript	LAB - Web Applications with Oracle WebCenter	ADF Security in a Project-Centric Environment - An ADF Case Study	Building Process Centric Applications with ADF and BPM
12:00 – 12:30	Survey & Event checkout				

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