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Developing Cross Device Mobile Applications

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What is Mobile?

Understand your goal

- Which devices
 - laptop, tablet, smart-phone, feature phone
- What network
 - Wifi, mobile (4gl,3gl), disconnected
- What functionality
 - Data and process access
 - Phone features (camera, address book, GPS)

Mobile Enterprise Challenges

In pursuit of productivity and connectivity

- Technology evolving at Consumer pace
 - iOS, Android, ...
 - Different tools, languages, platforms, etc.
- User expectations are high
 - Biased by Consumer experiences
- IT optimized for Java EE Enterprise Applications
 - Primary expertise in Java and web-based technologies
 - Now must meet demand for mobile
 - Multiple platforms and form factors

Oracle Mobile Development Strategy

- Extend enterprise applications and data to mobile clients
- Support multiple channels and platforms
- Provide one common platform for both desktop-based and mobile enterprise applications (ADF)
- Reuse your development skills and tools
- Minimize development cycle and cost

Access Desktop Application from Tablets

- Technology distinctions
 - Similar resolution to desktop
 - Decent network connectivity bandwidth
- Solution – Oracle ADF Faces Components

ADF Faces for Tablets

Special Features

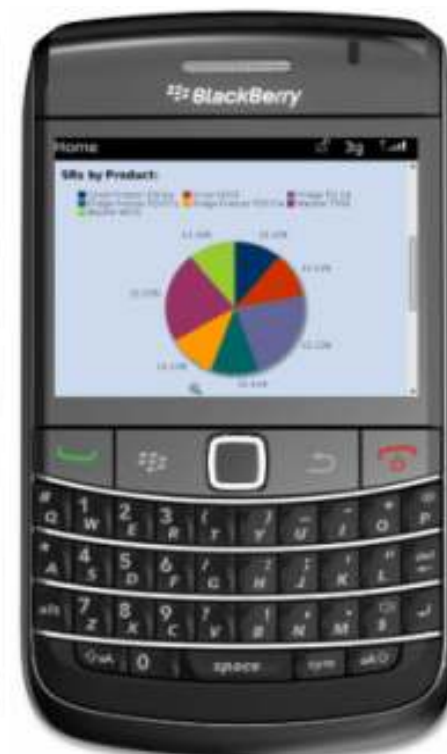
- Handle touch gestures
- Adaptive for device
- Adjust layout (stretch/flow, zoom in)
- Adjust components behavior
 - HTML5, special table, etc...
- Can condition based on client device
- Already in 11.1.1.6 – more features to come in upcoming patches

Access Data and Processes from Mobile Phones

- Technology distinctions
 - Smaller screen size
 - Variety of devices
 - Mobile network connection (could be slow bandwidth)
- Solution – Oracle ADF Mobile Browser

ADF Mobile browser

- Compatibility with virtually any mobile browser
- Delivers mobile optimized user experience
 - Touch screen and touch pad support
 - Special iOS native UI optimization



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Trinidad JSF Components

Mobile Browser Support

- 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
Webkit Based Browsers	Yes	Yes	Yes
BlackBerry 4.6/5.x	Yes	Yes	Yes
BlackBerry 4.5 or below	No	Yes	No
Windows Mobile/Phone	Yes	Yes	Yes
Nokia S40/60 WebKit	Yes	Yes	No
Plain HTML	No	Yes	No

Mobile Web UI Optimization Through CSS

- Mobile optimized user interface through CSS
- Pre-built CSS added to project

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>
```

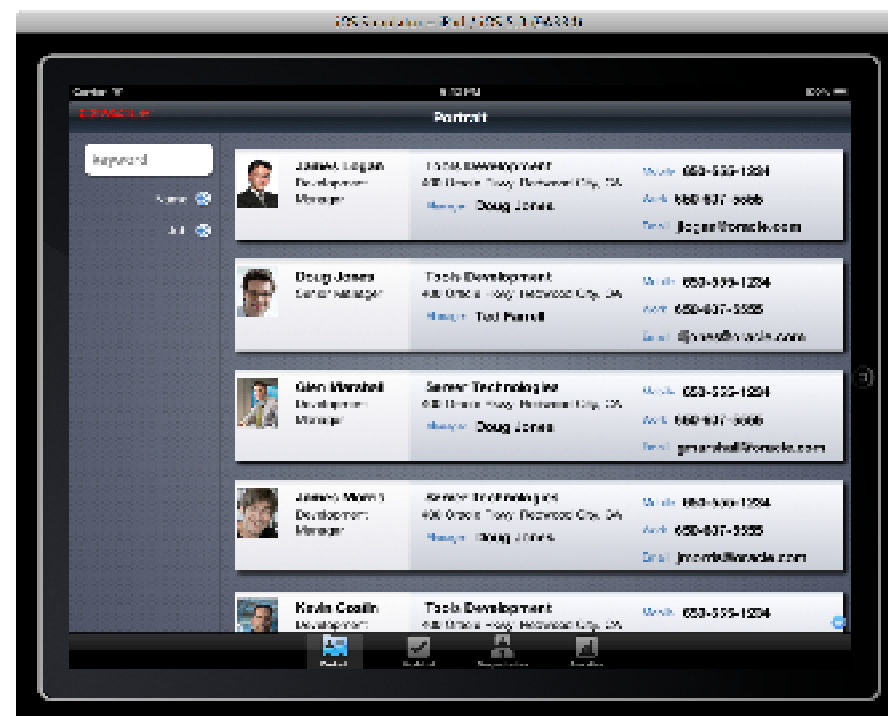
On Device Applications with Access to Device Services and Disconnected Option

- Technology distinctions
 - Various screen sizes
 - Need device services access (camera, contacts, sms...)
 - iOS and Android
 - With or without network connection
- Solution – Oracle ADF Mobile – Coming in 2012

ADF Mobile

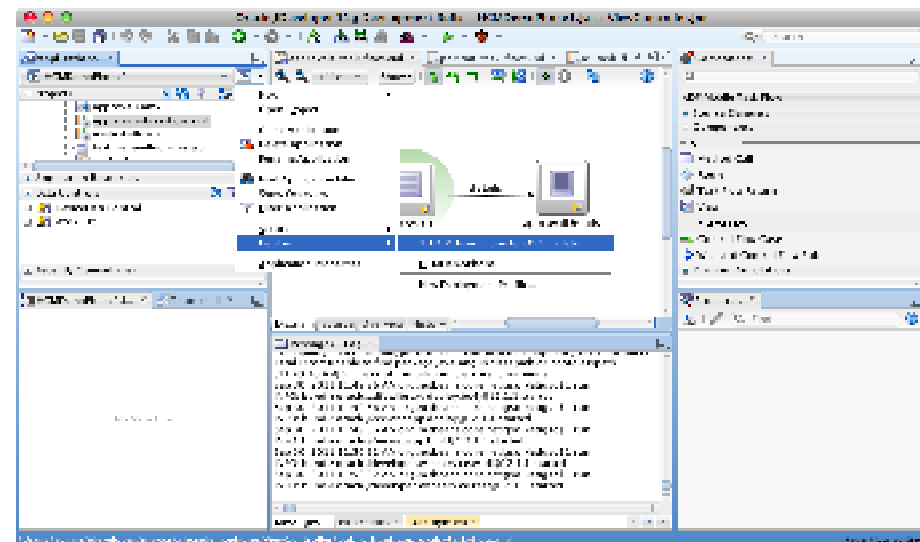
Rich, On-device Mobile Apps

- Declaratively develop hybrid on-device apps with HTML5 UI
- Access local storage and device services
- Build once for multiple platforms
- Reuse existing ADF/Web/Java development skills
- Minimize development cycle for supporting new mobile platforms



Build Once and Deploy Locally to Multiple Mobile Platforms

- Common and meta-data based application definition
- Device specific deployment options and packages
- Support app store based and third party app provisioning solutions
- Support for market leading mobile platforms such as iOS



Native Mobile User Experience

- Device native user experience
- Spring board and tab bar for feature navigation
- Advanced HTML5-based UI
 - Full animation, gesture, and touch interaction support
- Interactive Data Visualization Components



Access and Security

- Authentication:
 - SSO Integration across Features
 - OAM/OID support
 - Offline authentication capable
- Access Control:
 - Role based access
- Encryption:
 - Credential store
 - Local data
 - Communication channels



ADF Mobile Architecture Summary

- Thin Native Framework on each platform
 - Allows for native application install
- Allows for device interaction
 - Uses PhoneGap
- HTML5/JavaScript Frontend
- Java Backend
 - Embeds a light-weight, headless JVM
- Content packaged as features
 - Name, icon, images, constraints
 - Packaged in .far file. Assembled into applications

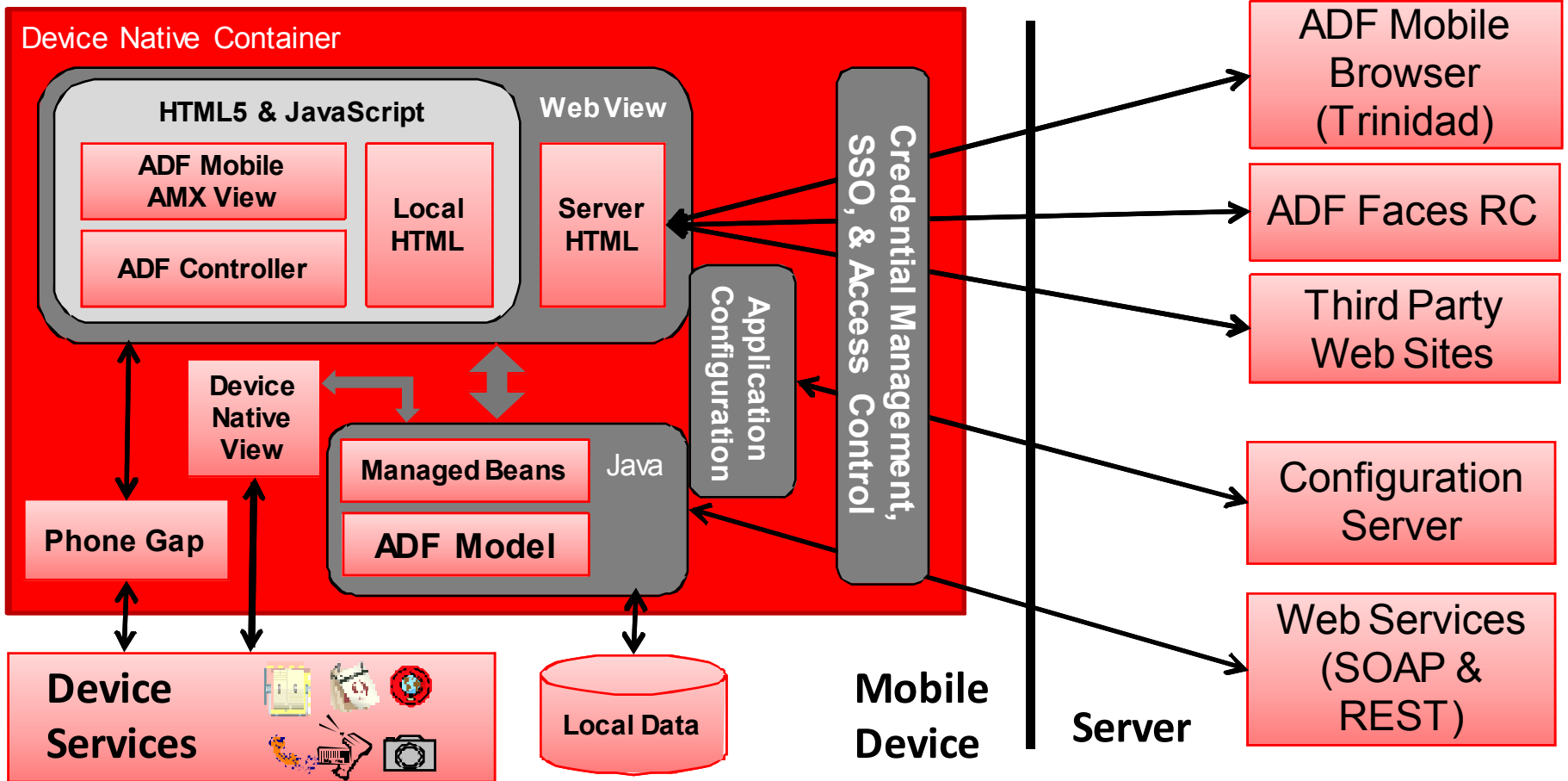


ADF Mobile – UI Content options

- Local AMX File
 - JSF-like file built visually in JDeveloper
 - Generated into HTML/JS on device at RT
 - Based on HTML5
- Remote URL
 - ADF Trinidad for Smartphones
 - ADF Faces on Tablets
 - Any third-party site
- Local HTML File
 - Hand-coded HTML5 pages



ADF Mobile Architecture



Summary

- Oracle ADF covers your mobile development needs
- Visual and declarative development
- Single framework and tool to learn
- Develop once – deploy on multiple devices

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