Going *Digitally Native* in the Enterprise

Extending your Oracle ADF Applications to Mobile and Cloud

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Safe Harbor Statement

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Spot the Difference.
Digital Native

• Born with the Internet
• Finished school thanks to Google
• Smartphone and tablet addict
• Socially connected on the Internet
• Many devices, many locations, always online
• Reads no manuals – just does it
• Wouldn't find way home without a GPS
• Smart
Digital Immigrant

- Learned from books in public libraries
- Knows typewriters
- Probably owned a Commodore 64
- Reads printed manuals
- Witnessed Mainframe, Client-Server and Web
- Knows how to operate a phone and tablet
- Not thoroughly virtualized - still reads books
- A social network "Maybe"
- Smart
Who Is Your Next Customer, Colleague, Employee?
Mobile is a Game Changer
in enterprise application development
What is the Impact?
Will there be a day after tomorrow?
Do you understand Mobile?
Mobile is a Cloud enabler

Cloud is a Mobile enabler
How does ADF fit into Mobile and Cloud?
Oracle ADF : Mobile and Cloud Touch Points

1. Mobile Integration
2. Data Visualization
3. Oracle Alta UI
4. Rest Service Integration
5. Cloud Integration
Oracle ADF : Mobile and Cloud Touch Points

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2. Data Visualization
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4. Rest Service Integration
5. Cloud Integration
Oracle ADF Mobile Integration

- Mobile Browser
  Oracle ADF applications run in mobile browsers on device

- Mobile Application Framework (MAF)
  Oracle ADF are referenced from Oracle MAF Remote URL Feature

- Data Model Sharing
  Exposing ADF Business Components as Web Service for use with Mobile

- Data Sharing
  Build ADF business services and data controls from Web Services used with Mobile
Oracle ADF: Mobile and Cloud Touch Points

1. Mobile Integration
2. Data Visualization
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Infographics

Don't make me think!
Infographic Example

GSMA Mobile World Congress 2014, Attendees by Region

src: http://www.intuitive-design.co.uk/clients/GSM/MWC14Report/index.html
Data Visualization Tools (DVT)

• 50+ chart types
  – Oracle ADF and MAF
• Mobile first design
  – Responsive client-side layout
  – Animation, Touch
• Internationalization
• Accessibility
Thematic Map

- Basemaps
  - Built-in, Custom
- Animation
- Drilling
- Selection
- Markers
ADF DVT components render in **HTML 5**, will run on both, **Mobile** and Desktop.
Oracle ADF : Mobile and Cloud Touch Points

1. Mobile Integration
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5. Cloud Integration
Modern User Interface Design Principles

• "Mobile Optimized" is the new beautiful.
• Design with the user in mind
  – Focus on key tasks and goals
  – Only show "need-to-know" details for given context
• Think 10/90/90
  – 10% of features used by 90% of users at 90% of their time
• Reduce complexity
  – Organize information to the essential
  – Remove features that don't support primary user tasks
Oracle Alta UI

- Modern layout and a fresh looking design for Web and Mobile applications
- User Interface Design Guidelines
- Best practices, Patterns and Styles
- UI conducive to responsive design techniques
- UI components available in Oracle ADF, Mobile and Cloud
Responsive Layout Example
Oracle Alta UI
A modern mobile & browser application design system

http://altaui.com
No pricelist attached: Its Free.
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SOAP vs. REST

SOAP is a formal, verbose, heavy and strictly documented contract as made by two lawyers.
SOAP vs. REST

REST is a relaxed, lightweight and often poorly documented contract as made by two drunk people at a party.

Image courtesy of "Patou" at FreeDigitalPhotos.net
No one can reliably predict the future.

As it stands now however,

REST is the Future in Web Service Development
Create Enterprise grade REST services

New in Oracle JDeveloper 12.2.1

using ADF Business Components
How it Works

Data Model

Application Module

View Object Instance Departments

View Object Instance Employees

REST Interface

REST Resource Departments

REST URI – GET, PUT, POST, Delete, PATCH

{host:port}/{path}/rest/{version}/Departments

/{deptId}

/{dept name via row finder}

/{deptId}/children

/{deptId}/child/Employees/{empId}

/{...}? {query condition}
How it Works

Data Model

Application Module

View Object Instance
Departments

View Object Instance
Employees

View Object Instance
Employees

REST Interface

REST Resource
Departments

Collection / Object
Custom Java
Row Finder / VC
REST filtering

REST URI – GET, PUT, POST, Delete, PATCH

{host:port}/{path}/rest/{version}/Departments

/{deptId}
/{dept name via row finder}
/{deptId}/children
/{deptId}/child/Employees/{emplId}
/{...}? {query condition}

REST Clients

Mobile: MAF, iOS, Android, Cordova, ...
Web: Browsers, JS, Java, .Net, ADF, ...
Cloud: Mobile Cloud Service (MCS), Integration Cloud Service, ...

JSON Payload

{ "Resources" : {
 "Departments" : {
 "attributes" : [ { ... } ],
 "collection" : { ... },
 "links" : [ { ... } ]
 "actions" : [ { ... } ],
 "item" : {
 "links" : [ { ... } ]
 "children" : [ "Employees" ... ]
 },

}
}
Instant Demo.

Click the add icon to create REST web service resources. Click a resource link to edit or delete the resource.
Instant Demo.

Click the add icon to create REST web service resources. Click a resource link to edit or delete the resource.
Instant Demo.
The development experience when building ADF REST services is ADF BC, not REST!
Is this all?  
No.
Consuming Rest Services in Oracle ADF

"Vanilla" REST – GET, PUT, POST, Delete, PATCH

Manually Model REST URI on top of REST Connection

- /{resource}
- /{resource1}/{resource2}
- /some_path/{resource}

Http methods manually mapped to REST URI

JSON payload structure provided by example
Consuming Rest Services in Oracle ADF

Web Service DC
- REST Service
- SOAP
- ADF BC REST Service

"Vanilla" REST – GET, PUT, POST, Delete, PATCH
Manually Model REST URI on top of REST Connection

ADF BC REST – GET, PUT, POST, Delete, PATCH
REST Resources and URIs discovered from REST Connection

/Departments
/Departments/child/employees
/employees/10

REST resource discovery
Http methods automatically mapped to ADF BC REST resources
JSON payload structure known
Consuming Rest Services in Oracle ADF

Web Service DC
- REST Service
- SOAP
- ADF BC REST Service

REST Connection
- WS Endpoint URL

"Vanilla" REST – GET, PUT, POST, Delete, PATCH
Manually Model REST URI on top of REST Connection

ADF BC REST – GET, PUT, POST, Delete, PATCH
REST Resources and URIs discovered from REST Connection

Data Control Panel
Exposes resources for declarative UI development
Exposes ADF BC Rest operations
Shows resource hierarchies
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ADF Cloud Integration #1

Cloud as a Development Platform
Oracle Developer Cloud Service

- Hosted development platform
- Requirements tracking
- Source management
- Code review
- Build automation
- Continuous integration
- Deployment services

cloud.oracle.com/developer
ADF Cloud Integration #2

Oracle ADF in Oracle Java Cloud Service

- ADF 11g R1 and 12c Support
- Deployment
  - JDeveloper
  - OEPE
  - Cloud Console
  - Developer Cloud Service
- Leverage Database Clouse Services
Oracle ADF business service can be exposed as REST service and deployed to the cloud.

Oracle ADF data controls can be built from cloud web services.
Oracle ADF is used in many of Oracle's Software as a Service (SaaS) Solutions
All good?

No.
But, at Oracle Open World you did announce the JavaScript Extension Toolkit (JET). And now you tell me that ADF is not dead?
I never understood the psychology behind the 'will it replace?' question that comes up each time Oracle releases a new product.

A toolbox deserves more than a *Hammer* unless all problems look like nails.
Oracle Development Tools - Quick Positioning

**ADF Faces**
- Desktop- and Mobile Browser Applications
- Declarative Development
- "Owns" the page
- Insulates applications from technology shifts
- Rich set of UI components
- Declarative binding with ADF
- Supports Oracle Alta UI

**JET**
- Desktop- and Mobile Browser Applications
- Code level JS, HTML5, and CSS
- Requires code changes to adjust to technology shifts
- Rich set of UI component sets based on JQuery UI
- Supports Oracle Alta UI
- License is restricted to the us with Oracle Cloud Service

**MAF**
- On-device mobile applications that looks like a native apps
- Single code base for iOS and Android
- Declarative and component based development in Java
- Insulates applications from technology shifts
- Rich set of UI components
- Supports Oracle Alta UI
Oracle Development Tools - Quick Positioning

ADF Faces
Java

JET
Scripting

MAF
Mobile & Java
How Your ADF Developer Skills Need to Evolve

• ADF Skills
  – Mobile First, Oracle Alta UI

• Data-to-Information transformation
  – Data is what you have, information is what you want

• Mobile skills
  – REST, Scripting, Mobile Cloud Service (MbaaS), MAF

• Cloud skills
  – Cloud application architecture & deployment
  – Service Integration
DOAG 2016 DevCamp
mit ADF Fitness Center

wann + wo

Kameha Grand Hotel
Bonn

was

- Internet of Things (IoT)
- Mobile
- ADF Development
- ...

wie

- Vorträge im Barcamp-Format
- Diskussionen
- Hands-On Sessions
- ...

ORACLE

ADF

Community DE
Integrated Cloud
Applications & Platform Services