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DEVELOP MOBILE APPLICATIONS WITH ORACLE ADF MOBILE

KEY FEATURES AND BENEFITS

EXTEND YOUR APPLICATION REACH TO MOBILE DEVICES THE FUSION WAY.

FEATURES

- Visual and declarative development
- Mobile applications for rich, on-device clients for multiple mobile platforms such as iOS
- Extends the power of Fusion Middleware to mobile applications

BENEFITS

- Develop once, and deploy to many devices and channels
- Single IDE for mobile and non-mobile development
- Single framework for mobile and desktop enterprise applications
- Complete security features
- Dramatically lower the learning curve of developing mobile applications

Oracle JDeveloper 11g R2 enables developers to rapidly develop applications that run on multiple mobile devices. With the powerful Oracle Application Development Framework (Oracle ADF) Mobile, developers can quickly develop applications for multiple mobile platforms such as iOS. This simplifies the path forward as mobile platforms evolve and delivers compelling mobile applications for users.

Mobile Enterprise Challenges

Mobile access to enterprise applications is fast becoming a standard part of corporate life. Such applications increase organizational efficiency because mobile devices are more readily at hand than their desktop counterparts.

However, the speed with which mobile platforms are evolving creates challenges as enterprises define their mobile strategies. Smart phones such as iPhone are powerful platforms, but different mobile platforms offers different tools and languages for developers. Developing mobile applications for each platform from the ground-up typically means maintaining multiple code paths.

To simplify development and maintenance many enterprises pursue a browser-based mobile application strategy. Online Web applications that end users access from browsers on mobile devices offer less device service integration in exchange for easier application development, management, and portability. But as browsers evolve and new mobile platforms emerge, ensuring that online Web applications render well to the proliferation of new smart devices creates further challenges to corporate IT.

Oracle ADF Mobile

Oracle Application Development Framework (ADF) Mobile provides a natural extension of enterprise/internet applications to mobile clients by providing tools, services, and infrastructure to protect against technology shifts. An application built with ADF Mobile framework installs on a smart device, renders user interface via HTML5, and has access to device services. This means the programming model is primarily web-based, which offers consistency with other enterprise applications as well as easier migration to new platforms. But the application has access to device services, enabling a richer experience for users than a browser alone can offer.

ADF Mobile Features and Benefits

ADF Mobile enables rapid and declarative development of rich, on-device mobile applications. Developers only need to write an application once and then they can deploy the same application across multiple leading smart phone platforms such as Apple iOS. ADF Mobile-based applications are built using the ADF Mobile extension in Oracle JDeveloper.

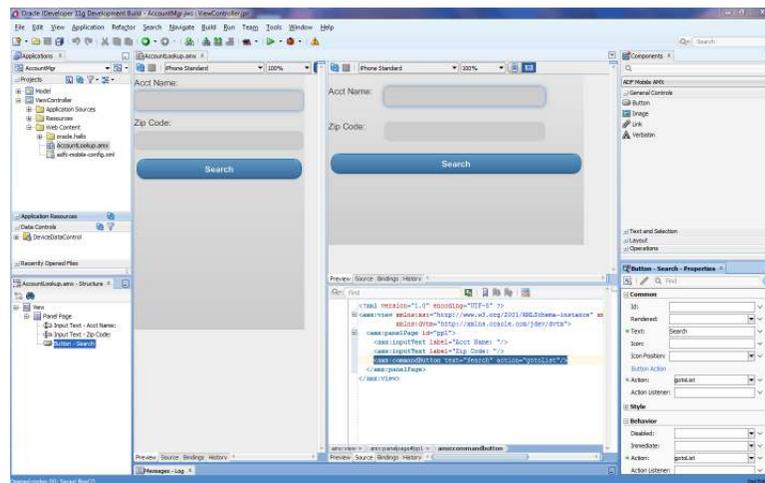
Key benefits of ADF Mobile for on-device mobile application development are:

Rapid Development of Rich Mobile Applications

Using ADF Mobile, developers can extend their server application to a mobile client by picking a subset of business components from their enterprise application and enabling them to run on the mobile device.

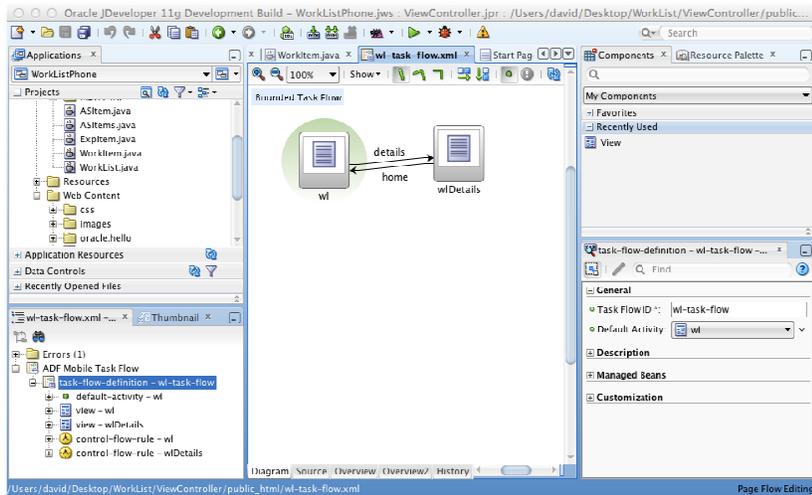
The ADF Mobile extension in JDeveloper makes it easy to create a mobile application that includes an icon, a tab bar and springboard for navigating between features in the application, and preferences that work when the application is deployed to multiple platforms.

To construct application screens, developers use JDeveloper's visual editors that provide instant feedback on the look and feel of the application.



Visual application design in Oracle JDeveloper

Developers also use visual task flow editors to declaratively define screen navigation logic for the controller layer.

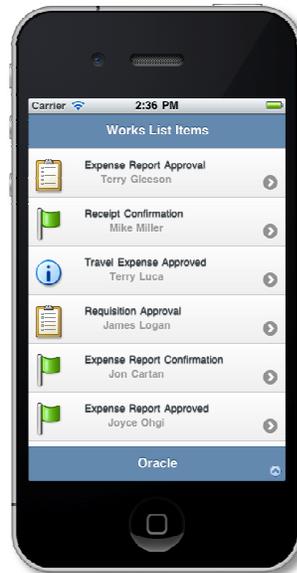


Defining application flow in Oracle JDeveloper

Flexible Runtime Architecture

ADF Mobile applications are deployed and run locally on-device, which ensures consistent application performance regardless of network conditions. But to support wide variety of mobile user scenarios, ADF Mobile provides a flexible runtime architecture and enables developers to construct user interfaces using the technology that most suits their needs:

- **Local HTML5/JavaScript:** Local HTML5 and JavaScript can be rendered from AMX (ADF Mobile XML) code. JavaBeans, as well as SOAP/REST web services are invoked through a Java virtual machine (VM) providing integration with enterprise backend services at runtime. This Java VM is packaged inside the mobile application automatically during the build/deployment process. Data can also be stored through a local SQLite database, enabling offline data access and cache where needed. It's worth noting, that directly displaying local HTML5/JavaScript is also supported, though AMX is the primary programming model most ADF Mobile developers will use.
- **Remote HTML5/JavaScript:** Remote web content may be rendered in an ADF Mobile application. Such content may consist of Apache Myfaces Trinidad JSF components that were originally optimized for mobile browsers, as well as other remote web content.
- **Native code:** For functionality that can only be delivered through device-native code, ADF Mobile also delivers user interface and functionality that's developed using device-native language and code, such as XCode/Objective C for Apple iOS devices.



AMX-based ADF Mobile application at runtime

Mobile-optimized User Experience

Whether a user interface is rendered locally on the device or remotely on a server, ADF Mobile delivers mobile-optimized user experience across multiple platforms and channels. Mobile users expect a consistent user experience across multiple applications, which significantly reduces any learning curve and training needs when using a new mobile application. ADF Mobile applications look like and behave like any other native application on the device, which enables mobile users to quickly access application functionality while on the go.

Mobile device form factors are also constantly evolving. Tablets introduce a new form factor that requires a different page layout and interaction model than traditional laptops. Mobile device vendors are also introducing smart phones of varying sizes. To support different device form factors, ADF Mobile leverages flow-based layout extensively, which allows UI components on a page to flow dynamically based on available screen real estate. Furthermore, ADF Mobile also allows developers to create sophisticated page layouts that fully leverage the large screens on tablets such as iPads. Developers need not compromise on user interfaces in order to support different types of mobile devices.

Complete Security Features

Mobile devices are by nature, easy to lose, and therefore security is a top priority for the ADF Mobile. Three key aspects of security that ADF Mobile addresses are:

- **Encryption:** The native mobile client credential store is used, and is encrypted. The communication channels between the device and servers are encrypted using HTTPS. And if a mobile database such as SQLite is used, this too may be encrypted.



Integration with device services

Conclusion

Oracle JDeveloper and Oracle ADF Mobile enables developers to extend the reach of their enterprise applications to mobile devices. By supporting a visual and declarative development paradigm similar to web development, JDeveloper and ADF dramatically lower the learning curve typically associated with mobile application development and extend the power of Oracle Fusion Middleware to mobile users.

Next Steps

Going forward, Oracle will offer two ways to enable mobile application development with ADF:

- **Oracle ADF Mobile** – For applications built with the ADF Mobile framework, running on-device, and integrating with enterprise web services (and covered in this data sheet). This is a new product targeting release in calendar year 2012.
- **Oracle ADF Mobile browser** – For Online Web applications where user interface implemented with Apache Trinidad JavaServer Faces (JSF) components is rendered to each mobile device's native browser – optimized for each particular browser (and *not* covered in this data sheet). ADF Mobile browser is already available today.

For information see links to ADF Mobile at www.oracle.com/technetwork/developer-tools/adf



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