ORACLE APPLICATION DEVELOPMENT FRAMEWORK (ORACLE ADF)

Oracle ADF is an end-to-end development framework, built on top of the Enterprise Java platform, offering unparalleled productivity to application developers. The framework provides integrated infrastructure solutions for the various layers of the application and an easy way to develop on top of them.

Integrated and Pluggable Model-View-Controller Framework

Oracle ADF is based on the model view controller design pattern that promotes loose coupling and easier application development and maintenance. Oracle ADF provides a solution for each of the MVC layers and supports easy integration of the various layers together with integrated security and customization solution.

Rich Web Based Interfaces

Oracle ADF includes a library of more than 150 standards-based Java Server Faces (JSF) components with built-in HTML5 and Ajax functionality. With these components, web deployed user interfaces can be developed with a level of functionality and interactivity previously reserved for thick-client applications. The components offer data interaction, data visualization, and encapsulated browser side operations in a set of easy to use components that makes rich client application development easier than ever. The ADF Faces components adapt to support user interfaces on both regular browsers and tablet based browser including support for touch gestures and adaptive layouts.

Advanced Page Flow

Oracle ADF extends the basic JSF controller to provide the ADF Controller. The ADF Controller provides: enhanced page and operations flow control, comprehensive state management, and reusability of flows as components in other flows and inside JSF pages and portals.

Drag and Drop Data Binding

ADF provides a data-binding framework that simplifies binding UI to business services through a simple drag and drop operations in the IDE. This is done while still keeping the independence of the business service from consuming interfaces. With the framework, the UI developer is insulated from the underlying implementation of the business service layer. This makes the process of building the UI truly decoupled from the implementation of the business service layer, better positioning the application for implementation in a service-oriented architecture.

ADF Business Components

ADF Business Components simplifies the task of business service development and object relational mapping by virtue of its highly declarative metadata based development style. These powerful components are visually designed and customized to allow declarative access to relational databases. The business components can implement custom business functionality, declarative validation, security, and advanced object-relational functionality.

ADF Business Components is just one of the possible business service implementations within the ADF meta-framework. Developers can also use EJB/JPA, Web Services (REST or

SOAP), POJOs and other implementations for the service layer.

Multi-channel Clients

ADF applications can be developed with an eye towards a variety of delivery methods. The framework supports direct implementation of web-based interfaces, mobile delivery, and desktop applications, including integration with Microsoft Excel. Due to the loose coupling architecture that Oracle ADF supports, developers can leverage the same business services with multiple user interfaces thereby increasing the reusability of their code.

Mobile Device Development

Oracle ADF provides specific features to enable web applications developed with Oracle ADF Faces to run on mobile touch-based devices. These capabilities include support for touch gesture interactions, adaptive rendering to match mobile browsers capabilities, and certification on common mobile browsers.

For developers who are looking for on-device mobile development, the new Oracle Mobile Application Framework (Oracle MAF) extends the Oracle ADF development concepts to mobile application development. Oracle MAF development experience uses common concepts - such as component based UI definition, MVC architecture, and declarative data binding – to simplify the transition of Oracle ADF developers to on-device mobile development.

Integrated Security

ADF provides a robust permission based security implementation that integrates into an ADF based application in a declarative fashion. Security can be implemented at various layers within the application to achieve the desired level of security granularity. ADF Security is based on Oracle Platform Security Services (OPSS), the security foundation for Oracle Fusion Middleware and is fully integrated with enterprise identity & access management components.

Existing investments can be reused such as Oracle Access Manager for Single Sign-on or Oracle Internet Directory and Microsft Active Directory for LDAP Services.

Declarative Application Customization

ADF provides out-of-the-box declarative application customization, using the capabilities of Oracle's metadata repository. Any ADF application can be customized by layering on changes to an application without modifying the base source code. Customization can be done for each of the layers of the framework achieving a customized application fitting the needs of specific users.

Enhanced Reusability

Along with the superior reusability features already described, ADF provides additional support for reusability through ADF Libraries and the Business Resource Catalog. These allow you to package up and share various framework artifacts and business components into simple distributable archives.

Free Option – Oracle ADF Essentials

Oracle ADF Essentials is a free packaging of key technologies from the Oracle Application Development Framework that can be used to develop and deploy applications without licensing costs. Oracle ADF Essentials includes: Oracle ADF Faces Rich Client Components, Oracle ADF Controller, Oracle ADF Binding, and Oracle ADF Business Components. With the ability to deploy applications that are based on Oracle ADF Essentials to various servers – such as GlassFish, a free open-source application server, without paying a license fee, more developers can leverage the powerful Oracle Application Development Framework to speed up the creation of cutting edge applications.

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Extensive IDEs Support

Oracle JDeveloper offers a comprehensive visual and declarative experience for Oracle ADF applications development. This means that wherever possible the developer has the capability to design an application utilizing visual editors and diagrams and then customize that design through integrated dialogs and property inspectors.

JDeveloper also provides the ability for the developer to choose to directly manipulate source code at any time. This provides the option to switch between development styles at will to suit the type of application or preferences of the developer. Oracle JDeveloper contains a unique debugger that enables developers to set break points on the declarative aspects of Oracle ADF.

For development shops standardized on the **Eclipse** platform, Oracle ADF development is supported through the **Oracle Enterprise Pack for Eclipse** tooling. This includes support for development with Oracle ADF Faces, Oracle ADF Controller and the Oracle ADF Binding layer. Oracle Enterprise Pack for Eclipse also offers support for ADF specific debugging and analysis of code dependencies.

Conclusion

Oracle's Application Development Framework offers an unparalleled level of productivity for application developers looking to build enterprise applications based on industry standards. Leveraging a sound architecture, open standards, and a plethora of built-in features Oracle ADF accelerates the development of cutting edge enterprise applications.

Contact Us

For more information about Oracle JDeveloper visit http://oracle.com/adf or call +1.800.ORACLE1 to speak to an Oracle representative.

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