Open For Business in a Nutshell

*Open Source Foundations for Enterprise Applications*

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What is OFBiz?

- Open Source Project for Enterprise Applications (ERP/CRM/MRP)
  - Applications Development Framework
  - Data Model
  - Applications
More about OFBiz

- www.ofbiz.org
- Began in 2001
- International Developer Community
- Enterprise-Class Features
Is OFBiz for me?

- Applications & Capabilities
- Underlying Technologies
- Developing and Deploying OFBiz
OFBiz Applications
Products and Stores

- POS
- Product Store
- Website
- Catalogs
- Categories
- Products
- Product Variants
- Product Features

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eCommerce Highlights

- Multiple stores
- Custom catalogs and pricing
- Price and Promotion Rules
- Associations: upsell/cross-sell/substitution
- Site search and product reviews
Order Manager

- Create and manage orders
- Quotes: create quotes, get bids, convert to orders
- Returns: create, approve, receive returns
- Purchasing: multi-vendor, multi-currency
Inventory and Warehouse

- Multiple facilities
  - Receive inventory
  - Track locations
  - Serialized vs. non-serialized inventory

- Shipments
  - Create shipments
  - Pick & Pack
  - Carrier Integration
Point Of Sales (POS)

- Based on JavaPOS
- Independent POS station
- Web-enabled synchronization with store and corporate servers

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Other Applications

- Blogs, wikis, surveys in Content
- Billing accounts, payment gateways in Accounting
- Material resource planning in Manufacturing
- Affiliate, PPC campaigns in Marketing
- People and Security in Party Manager
The OFBiz Framework

Presentation
- Model-View-Controller
- Decorator pattern
- Templates vs actions
- Meta-programming
  - Tomcat, Jetty
  - Freemarker, FOP
  - JasperReports
  - JavaPOS, XUI
  - beanshell

Business Logic
- Service Oriented Architecture
- Web Services (SOAP/XML)
- Scripting languages
- Meta-programming
  - Axis
  - BSF
  - beanshell

Data
- XML Data Modeling
- Persistence
- Database Independence
- Meta-programming
  - JOTM
  - XAPool
  - Minerva
  - Derby
  - JDBC

Framework
- Xerces
- Lucene
- Xalan
- Log4j
- ORO
- Jakarta Commons
- Xerces Commons
- Javolution
- POI

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Framework Highlights

- Platform and DB Independent
- Highly Versatile Development Style
- Plug-In Architecture: add new apps easily
- Mutually Aware Tiers
In the Beginning...

OFBiz (~ 2002)

- Followed *Core J2EE Patterns* book
- Lots of repetitive code in Events and Helpers
• Much better code re-use with Service Oriented Architecture
Architectural Comparison: PHP/Perl

User

$x =$_POST["X"];

SELECT ... FROM ... WHERE ...;

person["firstName"] = ...;

UPDATE ... SET ... WHERE ....;

echo "<TABLE><TR><TD>...";
Architectural Comparison: Java
Architectural Comparison: OFBiz

**Screens**
- generic screens
- generic forms
- HTML, XSL:FO, XUI
- controller

**Entities**
- data model defined in XML
- GenericDelegator API
- GenericValue API
- Database Independent

**Services**
- generic business logic
- define in XML
- Java, scripting languages
- SOAP, RMI
- Dispatcher API

**Workflow**
- SECA
- XPDL

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Java Persistence Frameworks

- Model data as classes with fields and accessors
- Map fields from Java to SQL
- Auto-generate Java and SQL code
OFBiz Persistence Framework

Entity: small unit of data model

- Key/value pairs
- Related to other entities
- Declared in XML file
- Found by delegator
- Generic class with get, set, store methods
Using the Entity Engine

- Modeling the Data:
  - Entitymodel.xml, entitygroup.xml

- Interfacing the Database:
  - Entityengine.xml, fieldtype.xml, cache properties

- Accessing the Data:
  - Generic Delegator
  - Generic Entity / Generic Value

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Business Logic: The Service Engine

- **Service**: small unit of business logic
- Central clearinghouse of business logic. “API layer”

![Diagram](image)

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Service Engine Highlights

- Defined in services.xml
- Accessed via Generic Dispatcher
- Map in, Map out
- Built-in transactions
- Exception handling using Map fields
Services Maximize Code Reuse

- Linked together in SECA or XPDL workflow
- Directly plugs into controller: no parsing needed
- Automated form generation
Presentation Layer

**View**
- JSP
- Freemarker/
  Beanshell/
  JPublish
- Screen/Form/
  Menu/Widgets

**Controller**
- Handlers
- Requests
- Views

**Model**
- Events & Helpers
- Services
- Servlets

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Developing with OFBiz

- Data Model → Entities
- Business Logic → Services, SECAs, Workflow
- User Interface → FTL, Form Widget, Screen Widget, Controller

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Developing *Efficiently* with OFBiz

- Use existing data model, business logic
- Use services
- Prototype with beanshell
Deployment Possibilities

Single Instance

<table>
<thead>
<tr>
<th>Tomcat</th>
<th>Jetty</th>
<th>Apache</th>
</tr>
</thead>
</table>

OFBiz

DB

OS

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Deployment Possibilities

Failover

synch
Deployment Possibilities

Load Balancing

Apache

OFBiz

Apache

DB

DB
Deployment Possibilities

- **Multi-Store**

  - Built-in synch allows scaling out or up

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Why We Chose OFBiz

• Flexible
• Scalable
• Strong development model
• Growing community
Next Step

- Try it out
- Developers' InstallFests
- Read the tutorials

www.opensourcestrategies.com/ofbiz
Bringing Open Source to the Enterprise

Logos properties of their respective owners

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