



The Harried Library Developer's Guide to Using OFBiz as an Acquisitions/Serials Module

Version 0.1

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Introduction

This document describes a bit of the inner workings of *OFBiz* <<http://ofbiz.apache.org/>>, an Apache project to create an open source enterprise automation software suite, and a specific modification of the system called *WoodChip*, designed to provide acquisitions/serials support for a library. OFBiz is a very big system, and we have recently ordered the advanced documentation training package from *Undersun Consulting* to help figure out all of its many pieces, but this guide will hopefully help you get started with what has been learned from burrowing into the code and navigating the OFBiz documentation.

Installation and Documentation Issues

OFBiz is the basis of at least two projects where certain functionality has been added but the results are under a slightly different license. The main download site is, in fact, a project which extends OFBiz called *opentaps* <<http://www.opentaps.org/>>. Like Undersun, the providers of opentaps are also consultants, and are among the biggest contributors to the OFBiz project. Their main contribution is a CRM (Customer Relations Management) module, an interesting application, but not one that is not enabled in the WoodChip setup at this point (arguably, libraries could use CRM software, but not necessarily in an acq/ser context).

opentaps uses the *Honest Public License* for their contributions, an extension to the *GPL* that requires hosted providers to contribute code changes back to the base, a "loophole", in some ways, in the original GPL (version 3 will address this). The licensing is not considered a barrier in our implementation.

The opentaps distribution requires the Java 1.4 SDK, but is usable with 1.5+ by changing the *Java Open Transaction Manager* (JOTM) layer. If you want to try out opentaps and have Java 1.5 (OS/X users largely fall into this category), there is a modified source file and some associated jars needed to get it running.

OFBiz uses certificates for security, and the ports 8080 and 8443 must be

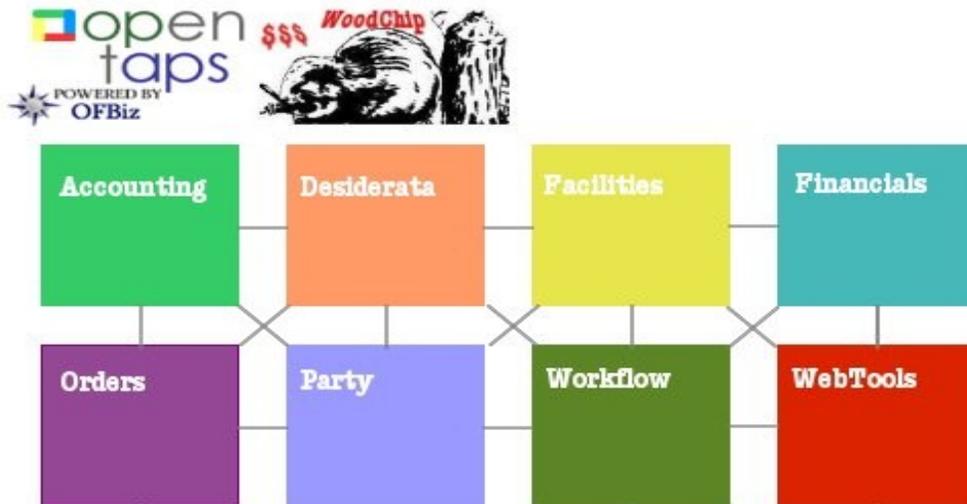
available. A sizeable amount material on the system is available online <<http://docs.ofbiz.org/>>, and the documentation is constantly being updated. The OFBiz mailing lists are also very active, Apache Foundation projects in general almost always need to show evidence of a substantial user and developer base, and OFBiz fares well on this criteria. Still, the available material, like the system itself, can be overwhelming to a first-time user.

One of the key steps to sorting out OFBiz is to understand how the “seed” and “demo” data supplied with the system fits in. For our purposes, the demo data supplies a lot of extraneous content that is not particularly useful, since much of it focuses on ecommerce. The easiest way to deal with this is to use the “run-install-seed” directive with ant when installing the system, i.e.

```
ant run-install-seed
```

When starting from scratch, OFBiz takes a while to assemble itself. The docs suggest editing the seed data for a live implementation, and I have only really stepped outside of this advice to change the Ids from “company” to “library” in some of the database entries. One of the tasks on the list for using OFBiz in a live setting is to go through the seed data in greater detail to see how it might be best set up for libraries, though it is probably easier and more sensible to set up everything interactively online. On the other hand, OFBiz has facilities for batch loading which would be useful for moving legacy financial data between systems.

After OFBiz is compiled, there are associated “startofbiz” scripts for the platform of your choice. Invoking one of these, and then going to <<http://localhost:8080/>>, gets you to something like the following:



**These modules are in a state of flux,
but click on one to poke around...**

Click on box to access any application. For more details, look [here](#).

Don't panic at the lack of a serials option, this will be added as WoodChip becomes better defined.

This is still a somewhat confusing selection, because there are more applications than what is shown here, and in fact, the opentaps folks themselves do not expose *WebTools*, which is the maintenance layer for OFBiz, from the opening screen. But you can jump from one to the other so easily when you embark on any of the starting points that it probably doesn't matter.

By default, a stock installation of OFBiz normally looks like this:

Accounting Manager Application

Gateway Responses

AccountingPaymentGatewayResponseId Ignore Case

AccountingOrderPaymentPreferenceId Ignore Case

AccountingStatus

Payment Gateway Response Id	Payment Service Type Enum Id	Order Payment Preference Id	Payment Method Type Id	Payment Method Id	Trans Code Enum Id	Amount	Currency Uom Id	Reference Num	Alt Reference	Sub Reference	Gatew Code
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For WoodChip, we have changed this layout slightly (reducing the applications while retaining the underlying database tables is one of the first challenges with OFBiz, the trick is to load the associated components without displaying the applications themselves). The applications are as shown in the top list of tabs:

Accounting | Desiderata | Content | Facility | Financials | Orders | Party | Shark | WebTools | WorkEffort

Accounting Manager Application

Main | Agreements | Billing Accounts | Invoices | Payments | Transactions | Chart of Accounts | Fixed Assets | Tax Authorities | Companies | Logout

Accounting Manager Main Page

Agreements

- List Available Agreements

Billing Accounts

- Show Customer Billing Accounts

Fixed Assets

- Show all Fixed Assets

Invoices

- Show All Invoices
- Show Commission Invoices
- Show Customer Return Invoices
- Show Finance Charge Invoices
- Show Purchase Invoice Invoices
- Show Sales Invoice Invoices
- Show Approved Invoices
- Show Cancelled Invoices
- Show In-Process Invoices
- Show Paid Invoices
- Show Ready for Posting Invoices
- Show Received Invoices
- Show Sent Invoices
- Show Write Off Invoices

Payments

- Show all Payments
- Show Commission Payment Payments
- Show Customer Deposit Payments
- Show Customer Payment Payments
- Show Customer Refund Payments
- Show Certified Check Payments
- Show Chèque certifié Payments
- Show Company Account Payments
- Show Company Check Payments
- Show Cancelled Payments
- Show Confirmed Payments

OFBiz can greatly customized within an application, both for display and for underlying functions. Much of the functionality for “customers” is probably not needed, since the “customer” for a library would most often be a patron, and not a direct purchaser of goods/services. Several of the customer payment options will probably be removed, and marked for inclusion where libraries might find this useful (for an internal fund raising process for example, or when the library really does sell items, such as USB drives).

Every person or organization within OFBiz is a *party*, and a vendor will normally be designated as a party group. Every party/party group has a role, which can be customized. Security is also assigned to a party, this is a fairly intricate part of OFBiz, but for now, we will do everything as the default *Admin* user. Note though that working through the system usually involves an early visit to the *Party* application to define the participants in a financial process.

Working with Purchase Orders

Like most ERP systems, OFBiz supports the concept of an *agreement*, where an external organization has certain arrangements with the library that are significant for the services provided. We create an agreement with the vendor that we want to order materials from, as shown:

Accounting Manager Application

Agreements

[Create Agreement]

Agreement Id Ignore Case
 Product Id
 Party Id From
 Party Id To
 Agreement Type Id
 From Date Equals
 Less Than

Edit	Product Id	Party Id From	Party Id To	Role Type Id To	Agreement Type Id	From Date	Thru Date	Description	
<input type="button" value="10000"/>		10010	BigSupplier	Supplier	Purchase	2007-04-11 14:37:44.605		Purchasing Agreement	<input type="button" value="[Cancel]"/>

Agreements can have terms (based on date, for example, late fees associated with shipping timetables), and items (for example, the currency used to purchase from the supplier). These can all be custom defined, some examples of terms can be seen below:

Accounting | Desiderata | Content | Facility | Financials | Orders | Party | Shark | WebTools | WorkEffort

Accounting Manager Application

Main | Agreements | Billing Accounts | Invoices | Payments | Transactions | Chart of Accounts | Fixed Assets | Tax Authorities | Companies | Logout

Agreement | **Agreement Terms** | Agreement Items

[ID:10000] Purchasing Agreement

[Create Agreement Term]

Agreement Term Id

Term Type Id Agreement Termination

From Date Clause For Renewal

Thru Date Exclusive Relationship

Term Value Financial

Term Days Penalty For Collection Agency

Late Fee (percent)

Non-Returnable Sales Item

Payment (discounted if paid within specified days)

Payment (due on specified day of month)

Payment (net days)

Incentive

Indemnification

Legal

Non-Compete

Other

Threshold

openta

POWERFORGE.net

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project - www.ofbiz.org

Agreements can be based on a specific product supplied by the vendor, and a vendor can have multiple agreements for multiple products.

With an agreement in place, we go to the *Order Manager* application (Orders) to actually place an order based on our agreement. OFBiz also allows orders to be created directly against the system itself (using Sales Orders), this pane will probably will be dropped and only purchase orders will be displayed, but both options have been left in place for now:

Order Manager Application

Purchase Order

Internal Organization

Supplier

User Login Id

Sales Order

Product Store

Sales Channel

User Login Id

Party ID



We choose the supplier, and have the option of using our previously defined agreement.

Order Manager Application

Enter Order Currency, Agreements, and Ship Dates

Select an agreement for this order

Or set a currency for this order

Default Ship After Date

Default Ship Before Date



OFBiz has a lot of child windows that open and are used for scrolling through options to populate a form. One example is below, where the product to be ordered is accessed through a *Quick Lookup*:

Order Manager Application

Order Header Info

Party: Big Supplier

Currency: USD

Agreement: 1000

Total: US\$12.99

Shortcuts

-
-
-
-
-
-

Choose Catalog

Search Catalog

Create Purchase Order

Product ID:

Quantity:

Desired Delivery Date: Use as default desired delivery date for next entry

Ship After Date:

Ship Before Date:

Comment: Use as default comment for next entry

Item: Type: Category:

Description: Quantity: Price:

Add Order Items to Shopping List

When the item is identified, it is possible to override the pricing at that point. OFBiz also supports the concept of shopping lists, where you keep a collection of order items in a list for reuse. If we choose to "Finalize" the order, we can use, change, or remove agreement terms:

Order Manager Application

Purchase Order : Order Entry Order Terms Order Items Order Terms Shipping Options Parties Review Order Continue

Term Type	Term Value	Term Days		
Payment (net days)		30	<input type="button" value="update"/>	<input type="button" value="remove"/>
Payment (discounted if paid within specified days)	2	10	<input type="button" value="update"/>	<input type="button" value="remove"/>



We "continue" through several options, where we can change the shipping address and add notes to the order:

Order Manager Application

Ship all at once, or 'as available'?

- Please wait until the entire order is ready before shipping.
- Please ship items I ordered as they become available (you may incur additional shipping charges).

Special Instructions



Orders then get to the point where they can be “approved”. OFBiz has a PDF writer to produce the order for printing in addition to gateways for digital transmission:

Order Manager Application

Order #WS10010 Information [PDF] Approve Order

Status History Current Status: Created
Created - 2007-04-12 01:58:36.970

Date Ordered 2007-04-12 01:58:36.97

Currency USD

Sales Channel Unknown Channel

Product Store

Origin Facility N/A

Created by

Order Terms

Term Type	Term Value	Term Days
Payment (discounted if paid within specified days)	2	10

Contact Information

Name Big_Supplier ()

Shipping Destination Address To: XYZ
Attn: ZJAA
2003 Open Blvd
Orem, UT 84058
USA

Shipment Information - 00001

Address

Method

Splitting Preference Please wait until the entire order is ready before shipping.

Gift? This order is not a gift

At this point, a reader can be forgiven for wondering where the book or whatever product is being ordered has been defined. This is where the *Desiderata* application comes in, WoodChip will use this as a rolling catalogue of materials that are either on order and/or represent potential items to be ordered. The Desiderata module is linked to an external ILS for pulling in repeat orders and sharing descriptions, but also allows for a fairly sophisticated selection tool, with shopping lists and subject-based arrangements of materials.

[Accounting](#) | [Desiderata](#) | [Content](#) | [Facility](#) | [Financials](#) | [Orders](#) | [Party](#) | [Shark](#) | [WebTools](#) | [WorkEffort](#)

Catalog Manager Application

[Main](#) | [Features](#) | [Promos](#) | [PriceRules](#) | [Stores](#) | [Thesaurus](#) | [Reviews](#) | [Configurations](#) | [Logout](#)

Search Products

Keywords:

Category ID:

No Contains Any All

Category ID:

Advanced Search

-Select Category-

-Product Jump

Browse Catalogs

[Catalog Detail List](#)

- Demo Catalog
- Rental Catalog
- Test Catalog

Browse Categories

[Choose Top Category](#)

- Demo Browse Root [CATALOG1]
- Gift Cards [GC-100]

Catalog Administration Main Page

Edit Catalog with Catalog ID:

OR:

Edit Category with Category ID:

OR:

Edit Product with Product ID:

OR:

OR:

Find Product with ID Value:

Multiple catalogues can be supported, and there seems to be support for calculating the impact of various selections against an underlying budget (need to check this again).

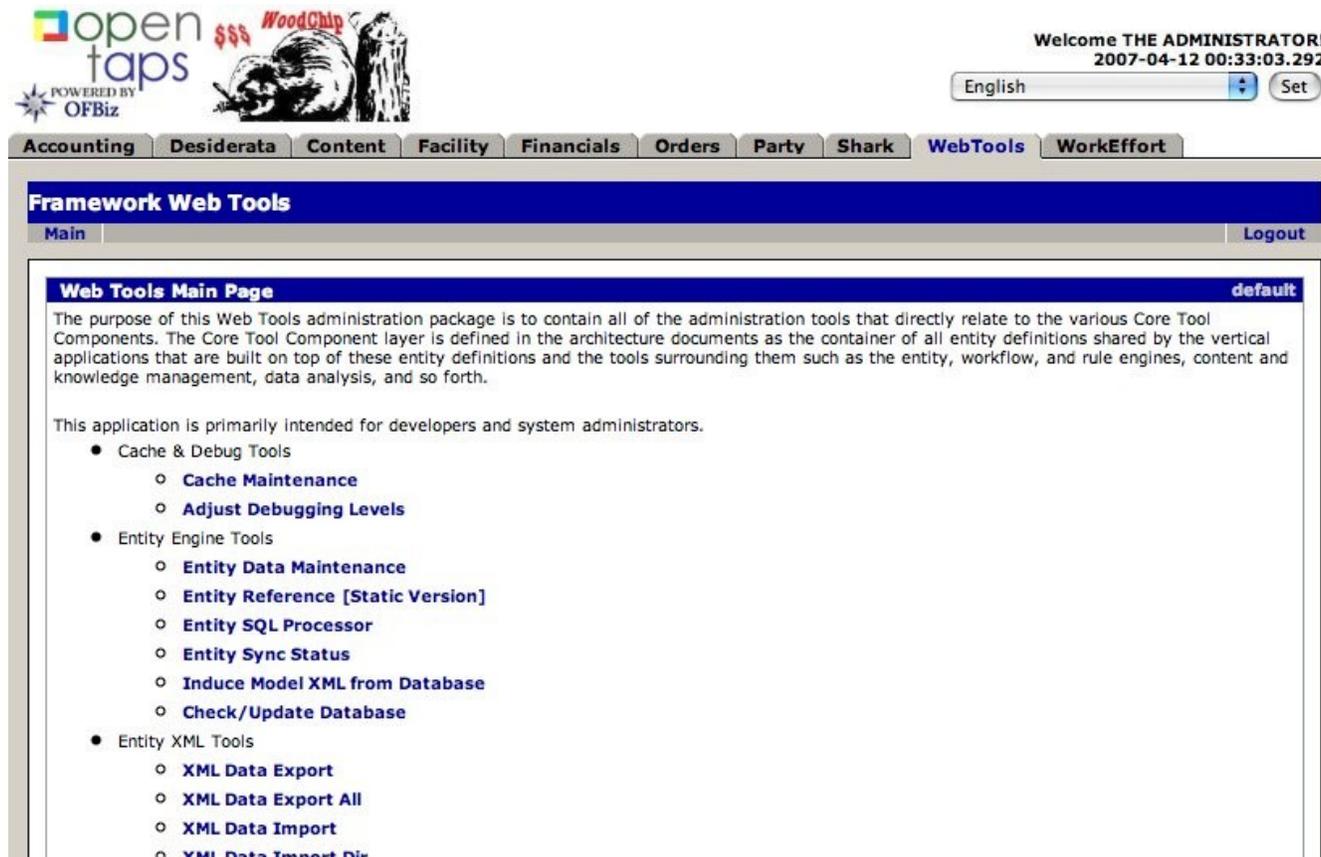
Other Applications

At the other end of the spectrum from the Desiderata/catalogue, the *Content* application is an extremely simple creation tool. This is used, for example, for creating a survey in the Desiderata/catalogue that could be used for Faculty in a campus environment where the selection process involves more than library staff.

An organization can define facilities in the *Facility* application. This would be used for multiple shipping points and offsite storage locations.

The *Shark* and *WorkEffort* applications are closely related, both are tools for workflows. Shark is a workflow engine, and wires in XPD L workflow descriptions <http://www.wfmc.org/standards/xpdl.htm/>, which are then associated with the underlying calendar and used for defining tasks in WorkEffort. For example, if there was a constant procedure for dealing with a specific vendor based on certain situations (such as shipping the wrong material), the procedure can be codified in an XPD L file, processed by Shark, and then the tasks are listed in WorkEffort and reflected in other parts of the system.

WebTools provides the maintenance support for OFBiz, and there are options for manipulating the database engine as well as utilities for fine-tuning the overall system:



The heart of OFBiz can be found in its data mappings, which can be viewed in the *Entity Data Maintenance* link. Hundreds of standard business models are included in OFBiz, and these can be reused for new applications:

Framework Web Tools

Main

Logout

Entity Data Maintenance

Entity Name					Entity Name					Entity Name
AcctgTrans	Crt	ReIn	Fnd	All	InvoiceTermAttribute	Crt	ReIn	Fnd	All	ProductVirtualAndAssocPrices
AcctgTransAndEntries	View Entity				InvoiceType	Crt	ReIn	Fnd	All	ProductVirtualAndVariantInfo
AcctgTransAttribute	Crt	ReIn	Fnd	All	InvoiceTypeAttr	Crt	ReIn	Fnd	All	ProtocolType
AcctgTransEntry	Crt	ReIn	Fnd	All	ItemIssuance	Crt	ReIn	Fnd	All	QuantityBreak
AcctgTransEntryAccountSum	View Entity				ItemIssuanceRole	Crt	ReIn	Fnd	All	QuantityBreakType
AcctgTransEntryPartySum	View Entity				JobSandbox	Crt	ReIn	Fnd	All	Quote
AcctgTransEntryProdSum	View Entity				KeywordThesaurus	Crt	ReIn	Fnd	All	QuoteAdjustment
AcctgTransEntryProdSums	View Entity				Lot	Crt	ReIn	Fnd	All	QuoteAttribute
AcctgTransEntryType	Crt	ReIn	Fnd	All	MarketInterest	Crt	ReIn	Fnd	All	QuoteCoefficient
AcctgTransType	Crt	ReIn	Fnd	All	MarketingCampaign	Crt	ReIn	Fnd	All	QuoteItem
AcctgTransTypeAttr	Crt	ReIn	Fnd	All	MarketingCampaignAndOrderHeader	View Entity				QuoteRole
Addendum	Crt	ReIn	Fnd	All	MarketingCampaignAndVisit	View Entity				QuoteTerm
Affiliate	Crt	ReIn	Fnd	All	MarketingCampaignNote	Crt	ReIn	Fnd	All	QuoteTermAttribute
Agreement	Crt	ReIn	Fnd	All	MarketingCampaignPrice	Crt	ReIn	Fnd	All	QuoteType
AgreementAttribute	Crt	ReIn	Fnd	All	MarketingCampaignPromo	Crt	ReIn	Fnd	All	QuoteTypeAttr
AgreementGeographicalApplic	Crt	ReIn	Fnd	All	MarketingCampaignRole	Crt	ReIn	Fnd	All	QuoteWorkEffort
AgreementItem	Crt	ReIn	Fnd	All	MaxContentApprovalView	View Entity				RateType
AgreementItemAttribute	Crt	ReIn	Fnd	All	MaxRevisionItemView	View Entity				RecurrenceInfo
AgreementItemType	Crt	ReIn	Fnd	All	MetaDataPredicate	Crt	ReIn	Fnd	All	RecurrenceRule
AgreementItemTypeAttr	Crt	ReIn	Fnd	All	MimeType	Crt	ReIn	Fnd	All	RejectionReason

Finally, *Financials* gives an overview of receivables, payables, and supplies, as well as several reports, as shown:

Accounting Desiderata Content Facility Financials Orders Party Shark WebTools WorkEffort

Financials

Dashboard Receivables Payables Transactions Reports Configuration Logout

Reports

Accounting

- [Trial Balance](#)
- [Transaction Summary](#)

Financials

- [Income Statement](#)
- [Comparative Income Statement](#)
- [Balance Sheet](#)
- [Comparative Balance Sheet](#)
- [Cash Flow Statement](#)
- [Comparative Cash Flow Statement](#)
- [Statement of Equity](#)

Inventory

- [Inventory Valuation Report](#)
- [Inventory Value Detail Report](#)
- [Sales, Inventory, Profitability Analysis](#)

Tax

- [Tax Summary Report](#)

There are numerous options for producing reports from OFBiz, and the use of BIRT, in particular, has been shown to be an effective means of pulling information out of the underlying database, but the *Financials* application is an easy way to get an overview of the fiscal activities of the organization.

Serials

It is almost certain that serials support will be its own application within WoodChip, like *Accounting*. There will be hooks to the XPDL layer in OFBiz for enabling publication patterns and defining appropriate workflows. The *Manufacturing* application, which is not shown here or utilized in WoodChip, provides a good base for understanding the underlying OFBiz scheduler, essential for time-based activities.

ERM?

It seems silly to not include ERM functionality in any new acq/serials system. OFBiz already has a deep notion of digital goods, this could be leveraged effectively for ERM support within WoodChip.