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

Version 0.1
Last Revised: April 13, 2007
By: Art Rhyno <http://librarycog.uwindsor.ca/>

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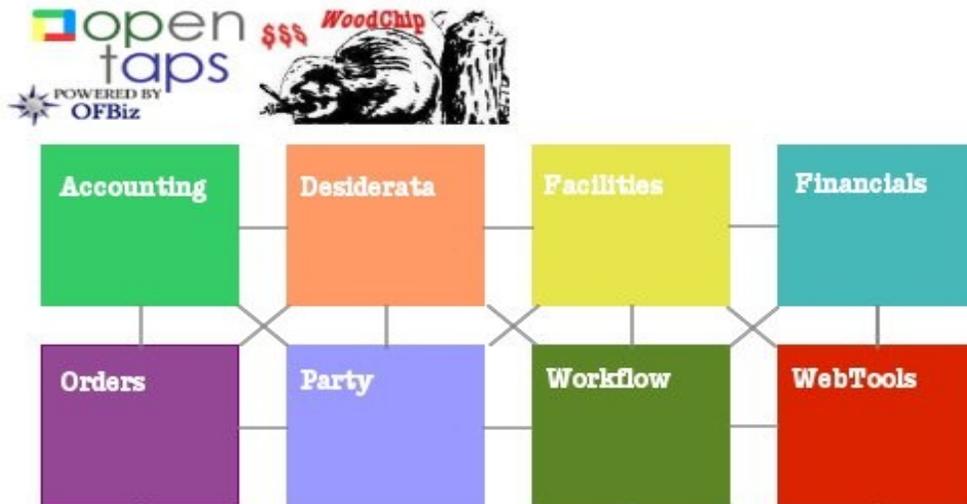
Don't panic at the lack of a serials option, this will be added as WoodChip becomes better defined.

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:

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:

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:

opentaps $$$ **WoodChip**
POWERED BY OFBiz

| 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

Agreements
[Create Agreement]

Agreement Id   [Begins With ⬍] [_____]   ☑ Ignore Case

Product Id   [_____]

Party Id From   [_____]

Party Id To   [_____]

Agreement Type Id [_____⬍]

From Date   [_____] [Equals ⬍]
                [_____] [Less Than ⬍]

                [Find]

Edit	Product Id	Party Id From	Party Id To	Role Type Id To	Agreement Type Id	From Date	Thru Date	Description	
[10000]		10010	BigSupplier	Supplier	Purchase	2007-04-11 14:37:44.605		Purchasing Agreement	[Cancel]

[W3C CSS ✓] [W3C XHTML 1.0 ✓] [SOURCEFORGE .net]

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:

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:

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

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*:

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:

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

Order Manager Application

Requests | **Quotes** | **Order List** | **Find Orders** | **Order Entry** | **Returns** | **Requirements** | **Order Tasks** | **Reports** | **Logout** **Stats**

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

Create New

Term Type	Term Value	Term Days		
Payment (net days)		30	update	remove
Payment (discounted if paid within specified days)	2	10	update	remove

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

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:

Welcome THE ADMINISTRATOR!
2007-04-12 00:33:03.292
English Set

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

Order Manager Application

Requests | Quotes | Order List | Find Orders | Order Entry | Returns | Requirements | Order Tasks | Reports | Logout Stats

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	9000
Origin Facility	N/A
Created by	admin

Order Terms

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

Contact Information

Name: Big Supplier (BigSupplier) New Order Other Orders

Shipping Destination Address: To: XYZ Attn: ZJAA 2003 Open Blvd Orem, UT 84058 USA (lookup:whitepages.com)

2003 Open Blvd – Orem Update

Shipment Information – 00001

Address: 2003 Open Blvd – Orem

Method: No Shipping

Update

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

Gift? This order is not a gift

View/Edit Delivery Schedule Info

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.

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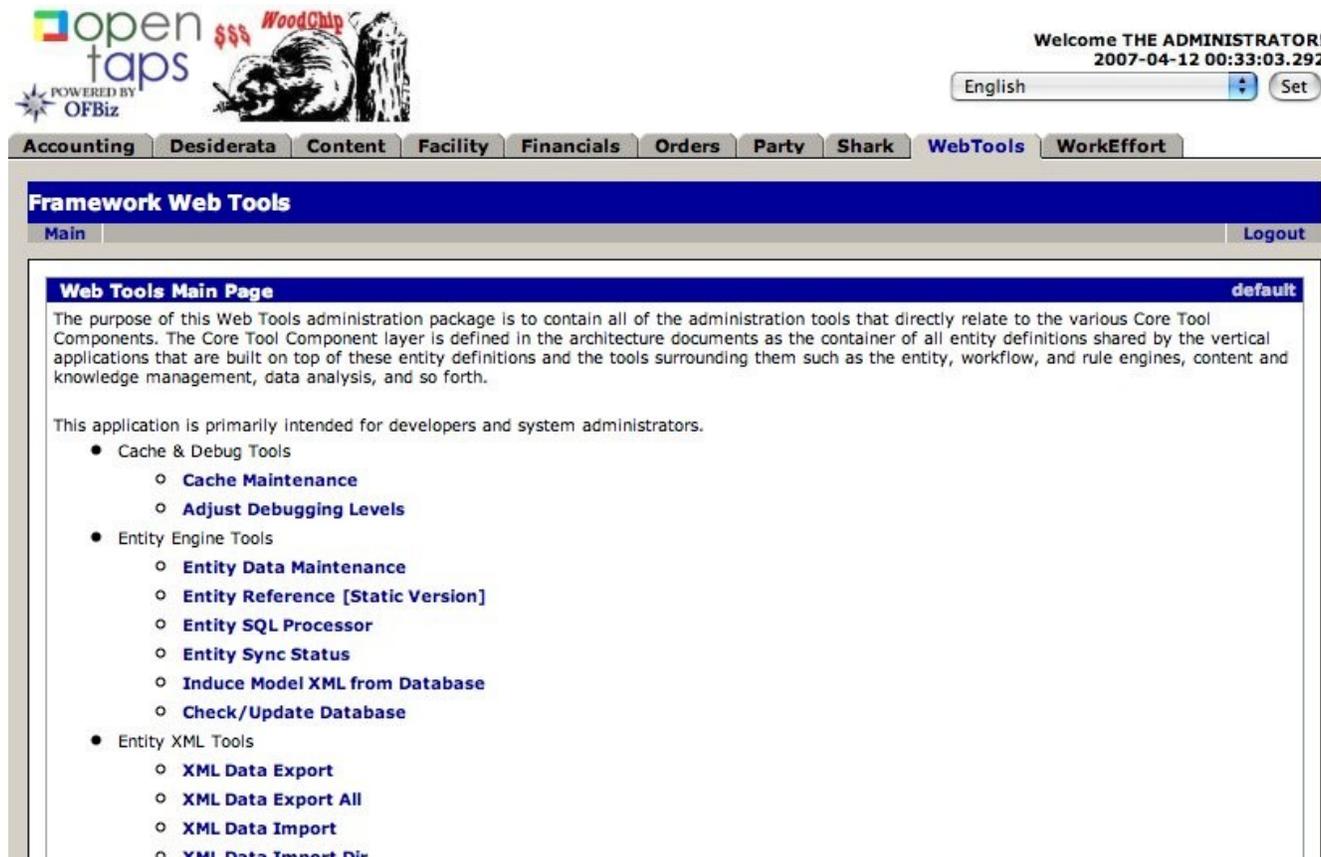
The heart of OFBiz can be found in its data mappings, which can be viewed in the *Entity Data Maintenance* link. Hundreds of standard business models are included in OFBiz, and these can be reused for new applications:

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

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 *Manufactoring* 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.