

This document describes the key concepts for setting up products and catalogs and the important functions of the Catalog Manager application.

**Change Log** 

July 31, 2006	Updated note about pro-rate shipping and reserve inventory for product stores
May 9 2006	Updated for opentaps 0.9



# **Basic Concepts**

<u>Products</u> are items which are available for sale. They can have names, descriptions, pictures, and prices associated with them. The important types of products include:

- Physical items, such as books or medium white shirts, that could require inventory.
- Virtual items, such as a shirt. A shirt is not a physical item in the sense that one does not actually buy or sell a shirt—one buys medium shirts in white, large shirts in blue, and so forth. Virtual items such as a shirt point to any number of physical items that are bought and sold and make it easier to organize products for sale. For example, instead of showing the customer a laundry list of all possible sizes and colors of shirts, we can show the customer a shirt item and ask her to choose the size and color she wants. Then we add that particular shirt to her order. Virtual items do not have any inventory associated with them.
- Digital goods, such as downloadable music or gift cards, which do not require inventory.

**IMPORTANT**: Do not confuse virtual and digital products. A virtual product is the parent of other products which are similar except for features differences, such as size and color variations. The "child" products of a virtual product could be physical (ie, shirts) or digital (ie, downloadable music or gift cards.) Digital products are a special type of product which can be fulfilled electronically and do not require inventory.

<u>Features</u> describe the features or characteristics of products. Typical features include size and color. The Catalog Manager allows you to define any feature set you wish for your products. Features are associated, or *applied*, to products. Currently, the system uses primarily the following types of product-feature relationships:

- Selectable features are features where the customer selects one from many available choices. For example, a shirt may be available in White, Blue, Green, Yellow, Pink.
   These colors would be selectable features of the variant product shirt, and the customer would be prompted to choose a color.
- Each color would be a standard feature of the physical product. Thus, White would be a selectable feature of the virtual product "shirt" but a standard feature of "white shirt."

<u>Categories</u> are groups of products which are presented together for the customer's convenience. A category can have both products and other sub categories and can have its own descriptions and images.

<u>Catalogs</u> are an added layer of grouping which useful for grouping many categories together. Catalogs are composed of many categories.

A <u>Product Store</u> mirrors a physical store and represents a collection of products, grouped by catalog and categories, and sold under a set of common shipping, fulfillment, and tax policies. Stores can have many catalogs, which are composed of product categories and products. Each store can have its own shipping, fulfillment, notification, promotions, payment processing, and tax calculation policies. The system supports as many stores as you need.

A <u>website</u> contains all the information for turning a product store into an ecommerce website. For example, it defines the URLs and ports for standard and secured http protocols, as well as the locale (language and currency format.) The web site is in turn mounted on a web application.

A product store can be associated with several different websites, allowing the same products to be sold on multiple hosted sites or domains. Alternatively, multiple stores, each with their own website, can be set up to allow different pricing and fulfillment procedures for, say, different



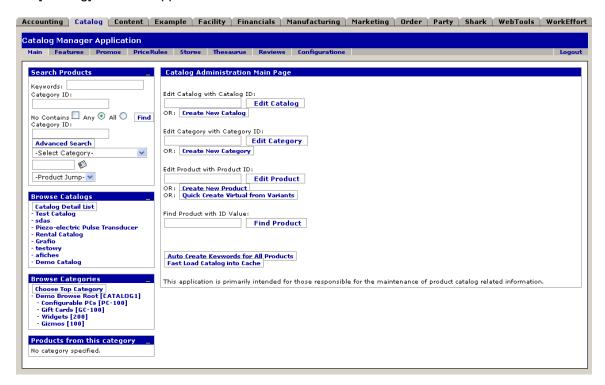
countries or different market segments (wholesale versus retail.)

Product Pricing is based on a combination of price rules and price data, thus allowing you to define any pricing scheme you need. The most basic information is maintained under the [Price] tab for a product. Here, one can enter Default Price, List Price, Promotional Price, Average Cost of a product. Then, in the [Price Rules] tab in the Catalog Manager, you can create very complex pricing structures based on basic price data and variables such as the customer, product, or quantity involved. For example, it would be possible to specify quantity discounts, special discounts for a particular group of products, for a particular group of customers, or pricing based on average cost rather than list pricing if certain conditions are met.

Promotions are similar to price rules but are used to record special promotional offers which apply to the entire order, rather than prices for a particular product. For example, you can set up rules to give customers free shipping or a percentage discount if they purchase a minimum quantity, or to create a coupon code.

### **Navigating the Catalog Manager**

Now that you are familiar with the general concepts, log into the Catalog Manager by clicking on the [Catalog] tab in the applications header bar. You will see a screen like this:



Under "Catalog Manager Application", there are seven tabs for different functions of the catalog manager:

- Main create or edit catalog, category, product
- Features manage product features
- Promos promotional rules
- Price rules for managing price rules
- Stores for managing product stores



- Thesaurus for creating a thesaurus of keyword aliases for searching
- Reviews a new tab for managing product reviews

On the left hand of the screen, there are four menus for navigation:

- Search products: allows searching of products with keywords
- Browse catalogs, categories, and products: for browsing through the product catalogs. Click on a catalog under "Browse Catalogs," and a list of categories will open up underneath it, and categories will open in the "Brose Categories" menu as well. Click on a category, and its child categories will show in "Browse Categories" and its products will show in "Category Products." At any time, you can click on a catalog, category, or product to start editing it.

# The Catalog Administration Main Page

The catalog administration main page has several small menus for finding catalogs, categories, or products. The first three menus allow you to edit catalogs, categories, or products by their respective ids, or create new catalogs, categories, or products. The last one allows you to look for a product using an id other than its product id, such as UPC or ISBN number (see below.)

Under these menus are two more links. Auto create keywords for all products will create keywords for all products. The keywords are based on product descriptions and are used for searching for products.

Fast load catalog into cache will load all products and product categories into the cache, for improved application performance. Note that only basic product and category information from the first Product and Category tabs is loaded, so additional information such as content, associations, and pricing will still have to be retrieved from the database and cached later by the applications.

### **Working with Product Features**

Click on the [Features] tab on the top of the screen, and the catalog manager will take you to the Product Features screen. These screens are for creating and maintaining product features, which are features or characteristics that are available for products. Here you will define what features can be available for products. Later, when working with the products, you will have a chance to define what features a particular product may have.

The first tab under [Features] is [Feature Types] and allows you to create and view different types of features (size, color, etc.) You will also see tabs for "Feature Categories" and "Feature Groups." These are both used to help you organize your product features. Product features can be organized into "feature categories" and "feature groups." Each feature can only belong to one category but as many groups as you need. For example, you can have a colors category that has colors White, Blue, Grey, Green, Yellow, Pink, Red, and Orange and a sizes category that has sizes XXS, XS, S, M, L, XL, XXL. Then, you can have one group for shirts that would have colors White, Blue, Grey and sizes S, M, L, XL, XXL, and another group for dresses that have colors Yellow, Pink, Red, Orange and sizes XXS, XS, S, M, and L.

Product features are created first from the "Feature Categories" screen, and then they are added to feature groups in the "Feature Groups" screen. Currently, most catalog manager functions all utilize "feature categories."

Click on "Feature Categories" (this is the default screen when you clicked on "Features" above), and you will see a menu for editing a particular feature, if you remember its feature id. (If not, you



can edit it from the feature categories below.) Next, you will see a list of feature categories and their parent categories. The categories' id codes are highlighted, and you can click on one to go to the feature category. At the very bottom is a menu for creating a new feature category. Here, you would enter the new feature category's name and specify a parent category for it (if it has one.) The category id is automatically created for you. Note that parent feature category is for information purposes only at this point.

Once you have created a feature category, you can click on it to add features to it. There is a link "Create new feature" which takes you to a screen to create a new product feature. Below this link is a list of product features already in this category. Important fields for product features are:

- Description this is text for describing this particular feature
- Feature type what kind of a feature is it? A color? A size?
- Category remember, a feature can only belong to one category at a time.
- Unit of measure and quantity can be used to create features such as length and width that have a default unit of measure but a different quantity for each product.
- ID Seq num set the defaulst sequence number for this feature. For example, if you create a feature "Small" and set its Seq Num to "1" here, then "Small" will by default show up as the first choice on lists of size features later.
- ID code if you put an item code, a variant item with this feature will by default have this id code at the end of its product (see product variants below.) Very useful for creating lots of variant products.

Click on "Feature Groups," and you will see a screen showing a list of available feature groups, and an option to create a new feature group at the bottom. Click on the id of the feature group, and you will be taken to a screen which shows all the features in this group (if there are any) and a menu to add more features to this group. Like feature categories, the ids of feature groups are automatically created.

# **Working with Products**

Once you have selected a product to edit or have selected to create a new product, you will see a series of tabs: Product, Prices, Content, IDs, Categories, Keywords, Associations, Attributes, Features, Facilities, Locations, Inventory, Suppliers, Accounts.

Product Tab. This is the main product editing tab and is used primarily for general product settings that controls how the product will be handled by various applications:

- Is Virtual Product? A virtual product, as described above, is a product which has several selectable features, each of which resolves to an actual product. A virtual product cannot be added to a shopping cart or order.
- Is Variant Product? If a product is defined as a variant, services such as those for calculating product pricing, will look to the parent product.
- Product type. Product types include finished goods, Digital goods, Services, Subassemblies, Fixed Asset Usage. Most physical products should be set up as "Finished Good." Digital goods and services do not have inventory; finished goods do. Fixed asset usage is for products or items which track the use or rental of a fixed asset, such as hotel rooms or airline seats.
- Primary category. A product can belong to multiple product categories. This one can be used to defined the primary one. So far, no standard application really uses this.
- Introduction, Sale discontinuation, Support thru date. If set, product will only be offered for sale between introduction and discontinuation dates.
- Require inventory, Inventory Message If set, item must have inventory items available, or it cannot be added to shopping carts or orders.
- Require Amount, Amount Uom Type Id An amount is a varying quantity for the item



which can be different each time the item is ordered. For example, consider fabric: each time it is sold, it is sold in yards or meters. This would be represented using the amount. By requiring an amount, the person ordering this item must supply a quantity and an amount, equivalent to saying I wish to buy 1 piece of 5 meters or 2 pieces of 3 yards.

- Returnable, Include in Promotions, Taxable, Charge Shipping determines how the product would be handled in orders.
- Auto Create Keywords if yes, a service will run every time the product is updated and automatically re-create search keywords for the product.

Duplicating Products. At the bottom of the main Product tab is a small menu for duplicating products. This is a very useful feature when creating a lot of products with similar characteristics. Enter a new product id here, and the catalog manager would take the current product and create a copy of it with the new product id. There are two rows of options below the product id, one starting with "Duplicate" and one with "Remove." Click on the boxes next to the options will cause these characteristics of products to be duplicated as well. For example, if you click on the box to the right of "Prices," the product will be duplicated with all the same price data as the original. If you click on a box next to an option in the "Remove" row, the characteristics will be removed from the original product after the new product is created. Be careful about duplicating inventory item: it would actually create new inventory in the warehouse and can cause problems for inventory valuation.

Prices. This tab is for maintaining price information about the product. A list shows all the prices information known about the product. A menu below allows you to enter another price for the product.

Each piece of price information specifies what type of price it is (List Price, Promotional Price, Average Cost); the currency it is in; the product store group it belongs to; and the from and through dates of this price. Once all the price information for a product is available, it will use a service called calculateProductPrice to determine the actual price of a particular product.

Pricing is very flexible and much more robust than simpler systems that function off one or two price inputs. Instead, the price of an item is a function of:

- Price information input on this page
- Pricing rules for this product store
- Promotions currently active for this store

Generally, here are some tips on how price is calculated:

- If multiple product store groups are defined, the price returned will be for the product store group of the current product store. This make it possible to create different prices for different stores, such as one targeted to retail consumers and one targeted to wholesale business-to-business (b2b) customers.
- If there is a list price, then price rules are used for this product. Price rules are based on all the price information available, including default price, list price, promotional price, and average cost. The system will run through all the price rules available to look for applicable rules and use them to determine the price of the item. If no price rules are applicable, it will first try to use a default price as the final price. If there is no default price, it will try to use the list price. If neither default nor list price is available and there are no applicable price rules, it will return a price of zero.
- If there is no list price, then no price rules will be run for the product. The default price will be returned as the price for the product. In addition, competitive price and average cost will be returned as additional available information, in case the calling application
- In all cases, the price will be constrained by the maximum and minimum price.
- If there are duplicate prices which are applicable at any time, such as two list prices, the



first one fetched from the database will be used. This may lead to unintended effects.

Price rules create a tremendous amount of flexibility in defining prices, but they have a performance cost. On a 2.4 GHz single CPU Pentium machine, using price rules takes approximately 0.05 seconds longer for the same product. Thus, a page which has twenty products will take one second longer.

Finally, it is not necessary for a product variant to have prices entered. The system will automatically look up the price of the parent virtual item if the variant product does not have product prices.

**IMPORTANT NOTE**: The "average cost" entered here is **NOT** the average cost used for accounting purposes, but rather a variable for pricing rules only.

Product Content. This tab is for creating and maintaining content information about a product, such as product name, descriptions, and images. The first menu is used to create a new content of a certain type for the product. The second menu is for adding an existing content (using a content id) to this product. Both of these use the content management system for creating and maintaining content information.

Below these two menus is a section called "override simple fields." This is where you can still enter content information that is stored directly with the product, rather than maintained by the content manager. If there is product content information in these fields, they will take precedence over what is available from the content manager.

IDs. Product id codes can be used to associate additional identification numbers to a product, such as UPC codes or ISBN codes. A product can then be found using these identification numbers as well as the system-generated productld.

Categories. This tab allows you to add a product to different product categories. The sequence number is used to order the products in the category.

Keywords. This tab shows what keywords are associated with this product. Keywords are used for search functions in the catalog manager and in order and ecommerce functions. Each keyword has a weight associated with it. You can use it to add or remove keywords.

Associations. This tab shows the products associated with the current one and provides a menu for adding additional product associations. Typical product associations include the following:

- Product variant one product is a variant of another, based on features selected.
   Usually, the variant product (product id to) is a physical manifestation of a virtual product (product id from.)
- Complementary, upgrade, or replacement Define products which are, respectively, cross-sells, up-sells, or replacements for another product.
- Marketing package component one product (product id to) is used to create a
  marketing package (product id from.) An example of a marketing package is a gift
  basket, composed of different products which may themselves be saleable.
- Bill of Materials defines a relationship where one product is used to manufacture another one (more on this in the manufacturing component.)

Attributes. Miscellaneous attributes for a product can be defined here.

Features. Shows what product features are associated with this product, and the form of their association. A feature can be applied in the following manners: standard, selectable (choose one from many features of this type), distinguishing, optional, required. Each feature has a sequence



number and an amount field. You can use this page to add features from feature categories, using their id codes, or their feature ids.

Facilities. A facility is analogous to a warehouse and is used to store inventory. This tab specifies the physical warehouse locations where this product will be kept, what the minimum reorder quantities are at this warehouse location, and how many days it takes to ship from this warehouse.

Locations. Locations are used to define stock moves between bulk and primary locations in each warehouse or facility. For each warehouse, enter the location identifier, the minimum stock to trigger a stock move, and the quantity to move each time.

Inventory. This tab gives a breakdown of actual inventory for the product. The top portion will show a summary of how much inventory in total is available for this product, including both total quantity on hand (QOH), available to promise (ATP), and inventory on incoming shipments. QOH includes inventory which is still in the warehouse but has already been sold and is awaiting shipment. ATP is only inventory which is still available for future orders. The system will list the actual lots of inventory and their quantities. If there are outstanding purchase orders for the product, they would be listed at the bottom.

The bottom portion of this screen will show actual line items of inventory associated with this product, such as individual orders, shipments, and receipts.

Suppliers. This tab specifies basic information for ordering the product from suppliers. The party id is a drop-down menu of available suppliers for this product. (For a supplier to show up in this menu, it needs to be created in the Party Manager and have a role of "Supplier.") For each supplier, you can specify the minimum order quantity, order increment, lead time, price (last price), a name, and a product id.

Accounts. Specifies what General Ledger (GL accounts) should be used for this Sales, Cost of Goods Sold, and Inventory accounts. This allows different GL accounts to be used for different products, breaking out financial accounting as needed.

Variants. If the product is a virtual product, there should also be a "Variants" tab. This page is laid out in columns, with each product feature type (ie, size, color) taking up a separate column and each feature value taking up a row. It will show all possible combinations of product features for this virtual product. For each combination, it will show the product variants which exist for this combination of features. If you click on the small box to the far right, it will auto-generate a product id for this particular variant, using the idCode field of each product feature.

**WARNING:** If a product has more than one variant product for a particular feature combination, an order-taking or ecommerce applications may not be able to resolve which product it should use when a user selects that particular combination and thus cause an exception.

#### Working with Categories

Once you click on a category on the left navigation menus, or enter a category id to edit or create a new category, you will be first taken to the main category page. This page shows the categoryld which identifies this particular category, the type of the category, some content information associated with the category, and a primary parent category for this category.

The category type is used to define what actions are available for the category. Most categories should be defined as "Catalog".



The detail template is used to define the path of a freemarker template, relative to the ecommerce application component, used for displaying this category's information to visitors. This allows different product categories to have completely different presentations and is a very helpful feature.

The primary parent category defines the primary parent of a category. Note that this will not automatically add the current category as a child of the parent category—that has to be done in the "Rollup" tab

Content. The content tab is used to associate content created and managed by the content management application with product categories. The page is intentionally very similar to the content tab for products.

Rollup. Category "rollups" are used to define parent/child relationships between product categories. This screen is split between "parent" and "child" categories. For example, if you have categories of Clothing, Men's Clothing, and Suits, then Clothing would be in the parent section of Men's Clothing, and Suits would be in the child section. The "sequence" field is a sequence number which can be used to order the child categories for display.

Products. This tab will show all the products which are members of this category. Each product is identified by its product id, and you can click on the product id to go to this product. The sequence number is used for ordering the products for display.

Catalogs. This tab shows what product catalogs this category is related to. For most product categories, this page should be blank, as only a few categories should be related to product catalogs. For more information, see section on "Working with Catalogs."

Features. This tab allows associating product features with product categories. Not really used by any standard application.

Parties. This tab allows associating specific parties with product categories.

# **Working with Catalogs**

A product catalog is used to group many product categories together and forms an intermediate step in the organization between products, categories, and stores. The product catalog can be used to define a common look and feel for all categories in this catalog and specify the way different categories will behave. For example, it is very useful for stores which sell products from different manufacturer or completely different product types that require differing presentations to the customer.

The main "Catalog" tab for a product catalog is mostly for specifying the look and feel. Each catalog can have its own style sheet (CSS), its own logo, and its own content repository (the content path prefix) and templates prefix (where its freemarker templates are located.)

The "stores" tab shows a list of stores that this catalog is currently featured in. Note that stores and catalogs do not have a one-to-one relationship: the same store can feature multiple catalogs, and the same catalog could be featured in many stores.

The "parties" tab shows parties which are associated with this catalog. << What does associating a party with a catalog do? >>

The "categories" tab shows the different product categories and their roles for this catalog. Specifically:



- Catalog standard product catalog category, with descriptive information and products.
- Quick Add products on these categories can be added all at once
- Promotions for the default ecommerce store, the products in the promotions category will be shown on the first page to all visitors
- Browse Root root category for browsing through the ecommerce store
- Default Search product searches by default are done in this category.

If you want only a subset of your products to show up on your online stores' search option, then you should create a category, add those products to it, and then make it the "Default Search" category for your catalog. Otherwise, your stores' search feature will return all products, including those which should not be viewed.

There are also other categories such as "What's New" and "Most Popular" whose function is self-explanatory.

### **Configuring Product Stores**

The "Stores" tab in the catalog manager is used to define all the properties of a working store, is a group of products sold together under the same policies. It is possible for a company to set up multiple stores, each with its warehouses, fulfillment policies, currencies, languages, promotions, and look-and-feel. These stores can web-based b2b or consumer ecommerce stores or to internal order entry and POS applications. They could even be in different countries with different shipping and taxation rules.

When you click on "Stores," you will see a list of product stores that have been defined. Click on one and you will see several tabs for administering different aspects of that store.

Store. The main product store tab is used for defining general store properties:

- Primary store group id. What group this store belongs to. As mentioned in the section above on pricing, stores can be grouped together with a price for each store group. It can be left blank if there are no store groups set up. Store groups cannot be set up in the catalog manager and must be inserted directly into the database.
- Store name, company name, title, subtitle. Used for display on the product store's website.
- Pay to partyld. A party (see Party Manager) where store payments will be credited to.
- Days to Cancel Non Pay. There is an automated service that can be scheduled (see Job Scheduler in Webtools) nightly to cancel orders which have not been paid. This defines how many days an order can be outstanding and unpaid before it is canceled. A value of zero here will leave all orders open indefinitely.
- Prorate Shipping. Controls whether shipping charges from an order are billed to first invoice of an invoice, or whether it is pro-rated on each invoice.
- View cart on add. Controls whether the user get taken to the shopping cart immediately after adding a product to his cart.
- Auto approve reviews. If the site allows users to enter product reviews, this controls
  whether the reviews must be approved (see "Product reviews" below), or whether they
  are automatically shown on the site.
- Inventory Facility Id. The facility (see Facility Manager) where the products sold on the store are kept. Used for knowing where to change product inventory as items are sold.
- Check Inventory. Once an order is placed, this causes the store to check for inventory availability.
- Reserve Inventory. Causes inventory to be reserved for items ordered in the store. The
  inventory may still be on hand but will no longer be available for other orders. If there is
  no inventory, new inventory items with negative quantities will be created. If you do not



reserve inventory, then you will not be able to create Shipments and assign order items to shipments later.

- Reserve order enum id. Choose how inventory should be reserved. The options are:
  - FIFO Received (default) Inventory items are reserved based on the date time received flag of Inventory Item. The earliest received item is reserved first.
  - FIFO Expire InventoryItem with earliest expireDate is reserved first.
  - LIFO Received InventoryItem with latest date time received flag is reserved first.
  - LIFO Expire InventoryItem with the latest expireDate is reserved first.
  - Greater Unit Cost InventoryItem with the highest unitCost is reserved first.
  - Lesser Unit Cost InventoryItem with the lowest unitCost is reserved first.

Note that the unit cost reservation methods do not do currency conversions.

- Requirement method enum. Used to specify a default type of inventory requirements when the product does not itself have one specified.
- Default sales channel. Used to specify the sales channel for the store's orders.
- Require inventory. If set to "Y," products will automatically become unavailable when there is no inventory in the facility.
- Order number prefix. All orders will be prefixed by this. Useful for grouping orders from multiple stores.
- Default locale string. Default locale, for language, number, and currency formats.
- Default currency uom id. Currency for the store's products.
- Check gc balance.
- Retry failed auths.
- Header and item status. What to set order header and order items when orders are approved, declined, or canceled. Based on the standard defined status codes in Open for Business. By default, the codes used are ORDER\_APPROVED and ITEM APPROVED and are set in OrderChangeHelper.approveOrder.
- Messages. What messages to sent to the user when their order has been declined or viewed as fraudulent.
- Style sheet, logos, and background. For controlling the look and feel and a web-based store. You can define the stylesheet (CSS) and images for the store here.
- Show Prices with VAT. Useful in countries where the price includes VAT. Set to N in the United States, where prices exclude sales tax.

Roles. Defines parties with specific roles for this store. For an employee to be able to take orders using the internal order manager application, he must be defined as a "Sales Representative" here.

Promos. Shows a list of active promotions for this store.

Catalogs. Catalogs which are available for the current store and the sequence in which they are to be shown to the user in a navigation menu.

Web Sites. Websites which are related to this store. This is directly used to link a store to a web application. Each web application has a configuration file called web.xml, and it is defined to reference a particular web site. The web site in turn is defined to relate to a product store. Thus, by setting a store on a web site, it becomes "live" on that web application.

It is possible for a web application to have more than one store associated with it, as long as it knows how to use the correct one.

The WebSite screen in Content Manager can be used to configure the static http and https content URLs and ports, so you can have your static content, such as images, served up by the Apache httpd server instead of the embedded Tomcat server.



Shipping. This page shows the shipping options available to store customers. A list of shipping options and their pricing is shown. Click on "View" for a shipping option shows all the settings for this shipping option. At this point, this tab can only view shipping options available and not be used to define them.

Payment. This is used to set up payment processing for the store. The payment processing interfaces are defined as services. Each payment method will have a series of service types available to it, such as for authorizing, capturing, and refunding payment. This page links the payment types and the services together by their purpose. Thus, one service would be used for credit card authorizations, another for credit card capture, and so forth.

Emails. This defines emails which the store would send to customers. The actual email services are either mounted in the controller, such as the order confirmation email, or from scheduled services, such as back order notifications. This page defines where the template for the email is located on the file system, the addresses and subject of each email, and a content type (which can be left blank.)

Surveys. This page is for adding surveys to the store. Surveys can be associated with certain events or with products and categories.

### **Setting Up Multiple Stores**

It is possible to set up multiple stores in the system which sell the same products on different websites. (This is different than setting up completely separate companies with their own products and customers—opentaps is not a mall like Yahoo stores.) To set up multiple stores, you would need to:

- 1. Create multiple Product Stores in the Catalog Manager
- 2. Create catalogs and associate them with your stores
- Create WebSites in the content manager, and associate those Websites with your ProductStores.
- 4. Copy the online store in applications/ecommerce/ to separate directories to your hotdeploy directory, one for each store
- 5. For each of your stores, edit its webapp/WEB-INF/web.xml file and change the webSiteId to point to one of the WebSites you defined for your ProductStore.
- 6. You can edit base/config/ofbiz-containers.xml to set up different Tomcat servers or AJP13 listeners on different ports, and then configure each of your stores to use a different server in its ofbiz-component.xml file. At this point, each store can be configured to its own IP address or web URL.

# The Thesaurus

The thesaurus is a tool for defining word substitutions for the search function. For example, you may want users who search for "lapptop" to see the same results as those who search for "laptop." To do this, click on "Thesaurus," put in "lapptop" in the box to the right of Keyword and "laptop" in the box next to "laptop." Select the relationship of "correct spelling" and click on "add." Now, when someone searches for "lapptop," the Open for business search function will automatically substitute it for "laptop" before conducting the search. You can also add "computer" as another alternative for "lapptop," using the relationship "broader term." Now searches for "lapptop" will return results for both "laptop" and "computer."

Below the menu for defining keyword relationships, you will see a series of letters, each of which will show you keywords which begin with those letters, if you have a large collection of keywords that need to be separated out into multiple pages. Each keyword will show a list of keywords for which it is a substitute and their relationships to the original keyword. Thus, if "lapptop" is a



substitute for both "computer" and "laptop," both words will be listed to the right of "lapptop" with their respective purposes.

### Reviews

The reviews page is used to approve product reviews before they are shown to customers. Once a customer enters a product review in the ecommerce module, it would show up here, with the name of the customer (even if the customer wishes the review to be anonymous), customer rating, and customer comments. As the administrator, you can modify the customer's rating or comments. You can then select to change the status of the review from "Pending Approval" to either "Approved" or "Denied." Once approved, the review would become "live" and viewable by others on the site.