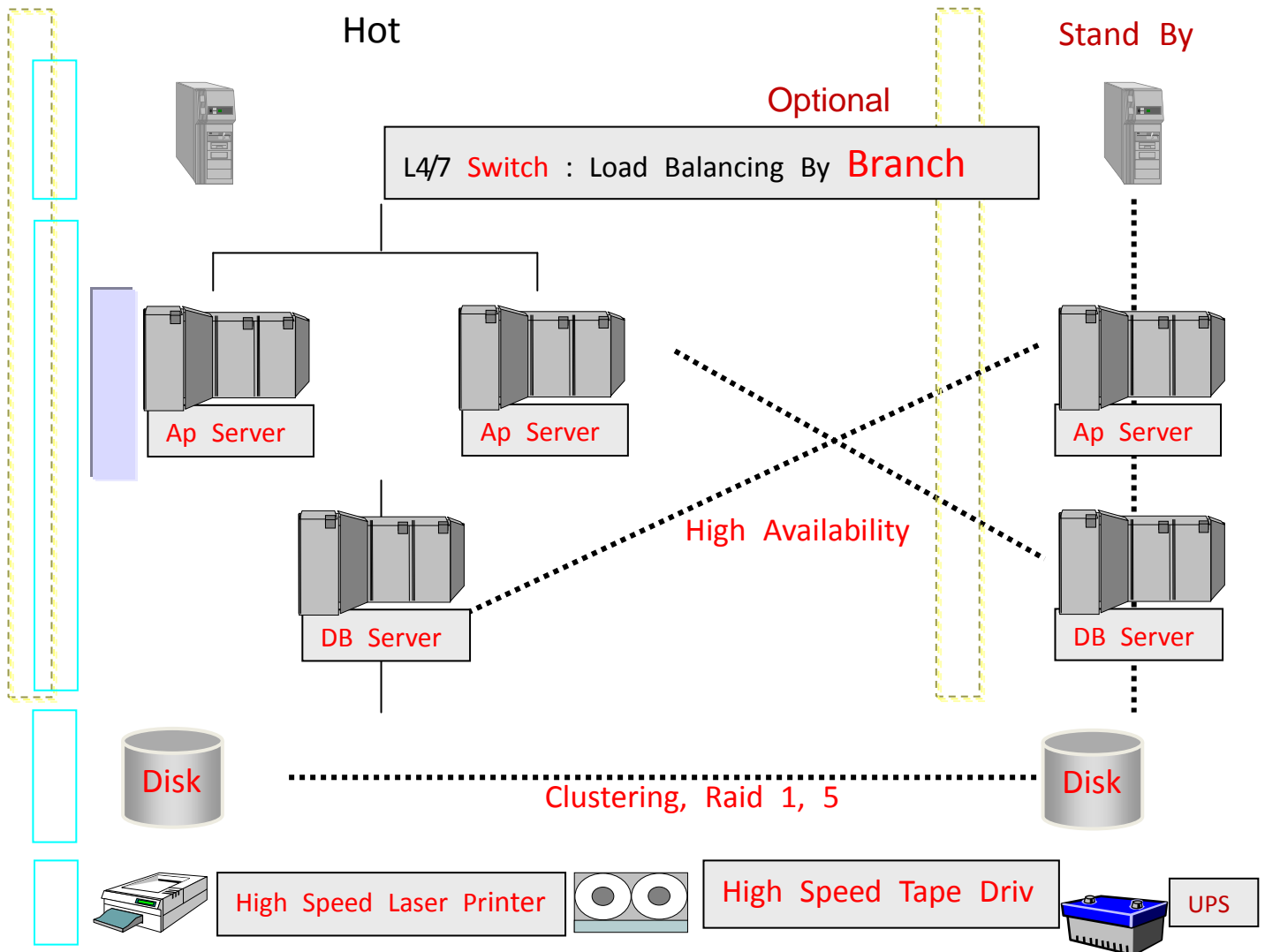
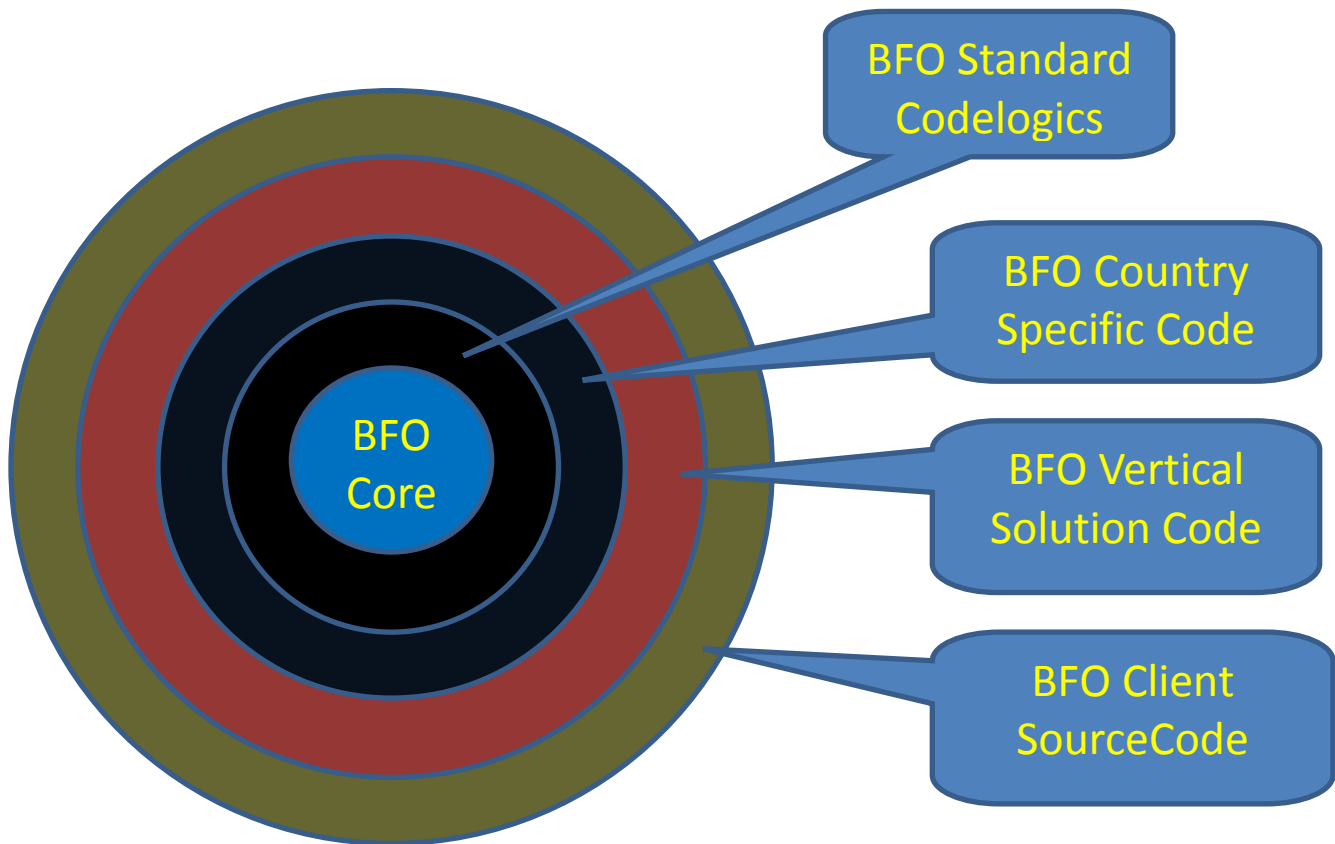


# BFO BUSINESS FRAMEWORK (BFW) TECHNOLOGY

## Architecture Overview



## Business Framework (BFW) for Customization On The Fly



Customization GUI in the minute, Auto form, or automatic form layout is a form type generated by BFO each time it is opened by user or module. An action will be added to enable the user to edit update the form follow business logic constrains. A number of predefined properties are available in business entities let developers change visual and behavioral aspects of such a logic form. This feature let BFO system quickly adapt when changing in physical database and data structure logic such as modifying tables, field, data type ... All business logic are binding together with form element like Lookup, Formula, Drilldown, Format/Lock Record, Filter condition make BFO solution stronger than other system. The philosophy of BFO is quick time development and all business are based on Business Definition Language not Programming language that can usually generate bugs and resource wasted in a large enterprise system and is not scalable.

BFO full integrated Web base technologies which helps businesses run their operations efficiently and cost effectively. The BFO ERM solution is defined as a series of web services call modules each of which can be tailored to meet a company's specific system requirements. With BFO a client effectively gets a specific bespoke system for an off the shelf software price which delivers a rapid return on investment with typically short development and implementation times. As a web services system, BFO builds on

traditional ERM solutions to make the whole business process globally visible bringing together information, customers, suppliers and logistics partners to deliver improved customer service, inventory control and accurate financial and forecasting data all based on real time data availability as well as expanding your business worldwide through Internet.

## Advanced Report Script Generation

BFO Reporter is designed to improve the speed and accuracy of reporting processes such as analysis, data drill-down and ad-hoc reporting tasks, without diminishing the complexity of information required. It works with Microsoft Office and Open Office as well as Crystal Report Decision and is the only full-fledged, Excel-based report writer and budgeting tool as well as less time wasted for other ERP/ERM systems.

## BFO Web RIA Edition

BFO core technology enables executives, analysts and educators to turn complex and confusing data into clear, easy data-mining. Its award-winning product, BFO, is a point-and-click Windows application and Web RIA. The BFO Web RIA edition adds the power to produce enterprise-wide, real-time e-commerce by connecting to corporate databases via XML, Web services and AJAX.

## Summary Features

1. Paging technology supports large volume of data;
2. Multi-sites: suitable for company with many branches, points of sales, or multi locations. BFO enables enterprises with 100 to 10,000 agencies connecting to the system from over the globe;
3. Multi-tiers: Server side, all business logic executed from Application Server, clients only connects to the application server to get the results and submit the input;
4. Multi threads executed from application server, ensures that multiuser concurrent connect consistency;
5. Web Service: Data and business logic are 100% Web Service accessed Internet protocol compatible with http, https. Web based application full integrated;
6. Security: Filter Security, Record Level Security, Interface Security, Module Security;
7. Large Enterprise Application with multilevel user access;
8. Report Service Server side;
9. Multi-database: SQL Server, Oracle, DB2;
10. Multi-interface: multy themes;

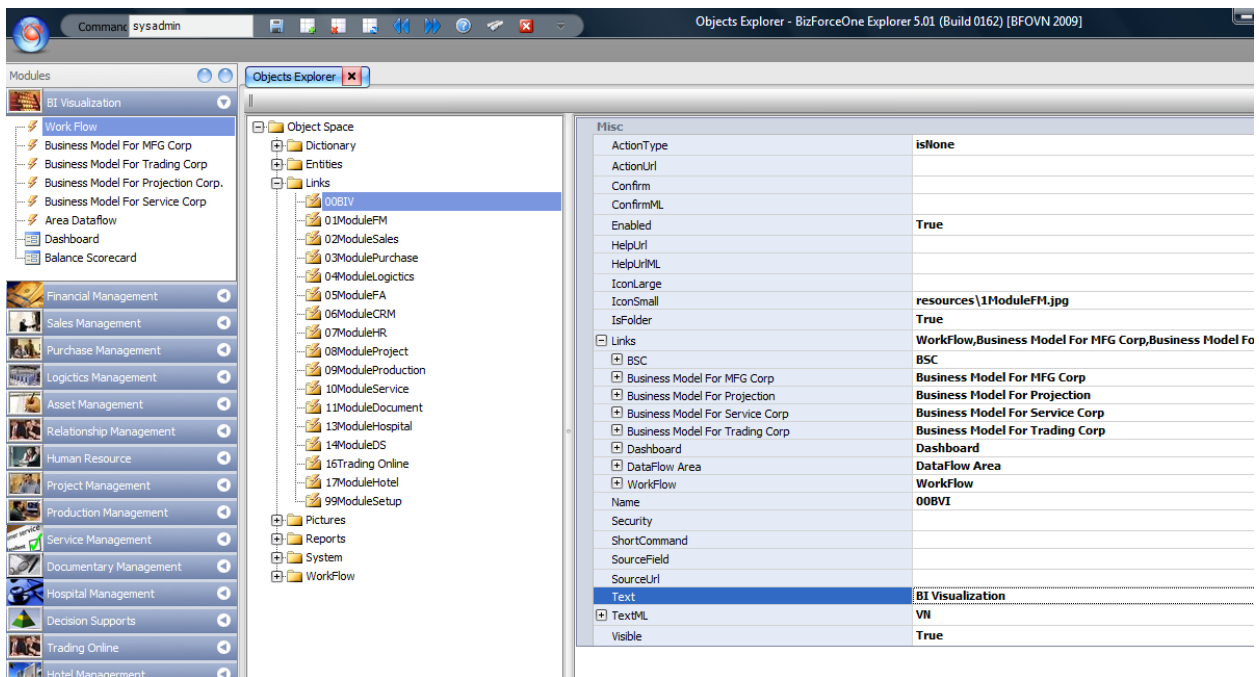
11. Multi-Add-on;
12. Objects Administrator: with n-tiers objects like Entities Objects, Reports Objects, Module Objects, Security Object ...;
13. Portable: Application Server easy configured (Backup, Restore Application Server Objects);
14. Scalable: Application Server with Database Centralized or De- Centralized.

# BFO Framework Overview

1. BFO Link
2. BFO Entity
3. BFO Report
4. BFO Security
5. BFO Dictionary

## BFO Link

BFO Link is used to assign feature or functions (group of features) so that end users can click to have business information. We call bfo modules or submodules.

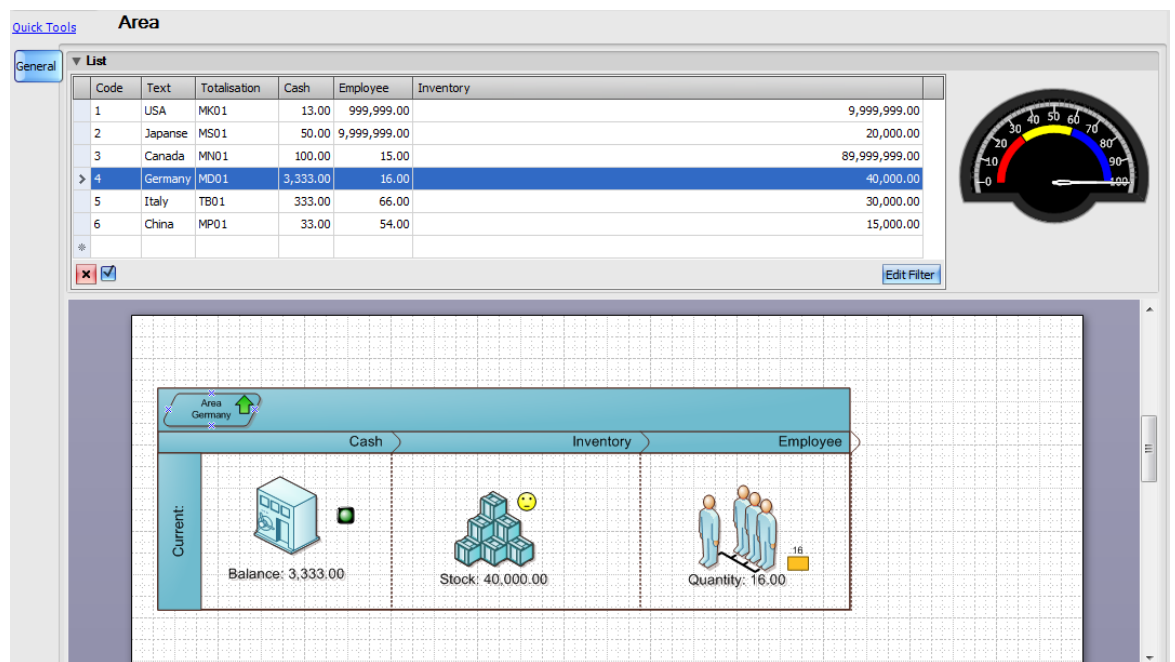


# BFO Entity

## Definition

BFO Entity is business object or Information Cube consists of:

1. Data Layout (Screen)
2. Implemented forms (Most popular reports/auto report see quick tool)
3. Business intelligence (BI) with KPI and/or Business Intelligence Visualization
4. Business Logics



Typically, BFO defines 4 kinds of entities:

DBTable: Link to database table

DBView: Link to database view

DBStoredProc: Link to Stored Procedure in database

DataSource: Used as datasource for users to define as report parameter froms

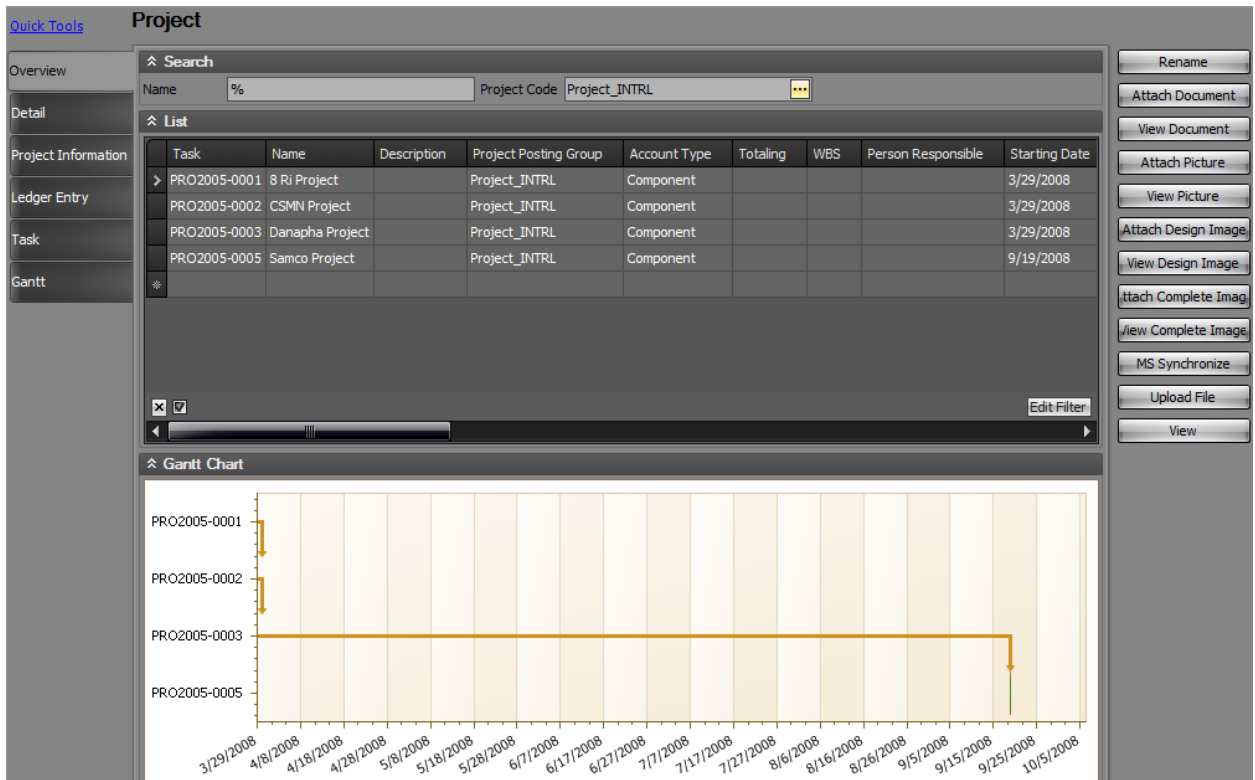
Area		
Asset Department History		
Asset Journal Line		
Asset Journals		
Asset Ledger Entry		
Asset Template		
Asset		
AssetDashboard		
Bank Account Ledger Entry Settlement		
Bank Account Ledger Entry		
Bank Account Ledger Receipt Settlement		
Bank Account Posting Group		
Bank Account Statement Line		
Bank Account Statement		
Bank Account		
Bank Acc_Reconciliation Line		
Bank Analysis View Budget Entry		
Bank Analytics		
Bank Budget Entry		
Bank Budget Name		
Bank Dimension Ledger Entry		
Bank Ledger for Reconciliation		
BAO_CHI		
BAO_PHANANH		
FormSize		0, 0
GroupBy		
HasCheckbox		False
HelpUrl		
HelpUrlML		
KeyField		RowID
Layout		Tab1
LayoutTabLocation		isTop
LayoutTabVisible		True
Name		Area
OrderBy		
PageSize		50
ReadOnly		False
Relations		
Security		
SmartSearchField		
SmartSearchValue		
SourceType		isDbTable
TableName		isDbTable
Text		isDbView
TextML		isDbStoredProc
Title		isDataSource
TR-M		isNone

## Entity layout

Generally, BFO entity contains of layout (tab information) and each layout can consist of many groups as followed:

Currency Exchange Rate	keyfield	RowID
Currency	Layout	TabList,TabDetail
Customer Analytics	TabDetail	TabDetail
Customer Bank Account	TabList	TabList
Customer Budget Entry	Dock	Fill
Customer Budget Name	Fields	
Customer Dimension Ledger...	GroupOption	
Customer Discount Group	Groups	GroupList,GroupRelation
Customer Group	GroupList	GroupList
Customer Invoice Settlement	GroupRelation	GroupRelation
Customer Location Ledger	GroupStyle	isTabPage
Customer Payment Settlm...	Links	
Customer Posting Group	Name	TabList
Customer Price Group	Readonly	False
Customer Refund Journals	Security	
Customer Sub Group	Sizable	False
Customer Template	Size	0, 0

There are two kinds of layout: one for holding group that contain datafield information, the other is group contained link to action (execution function in source code).

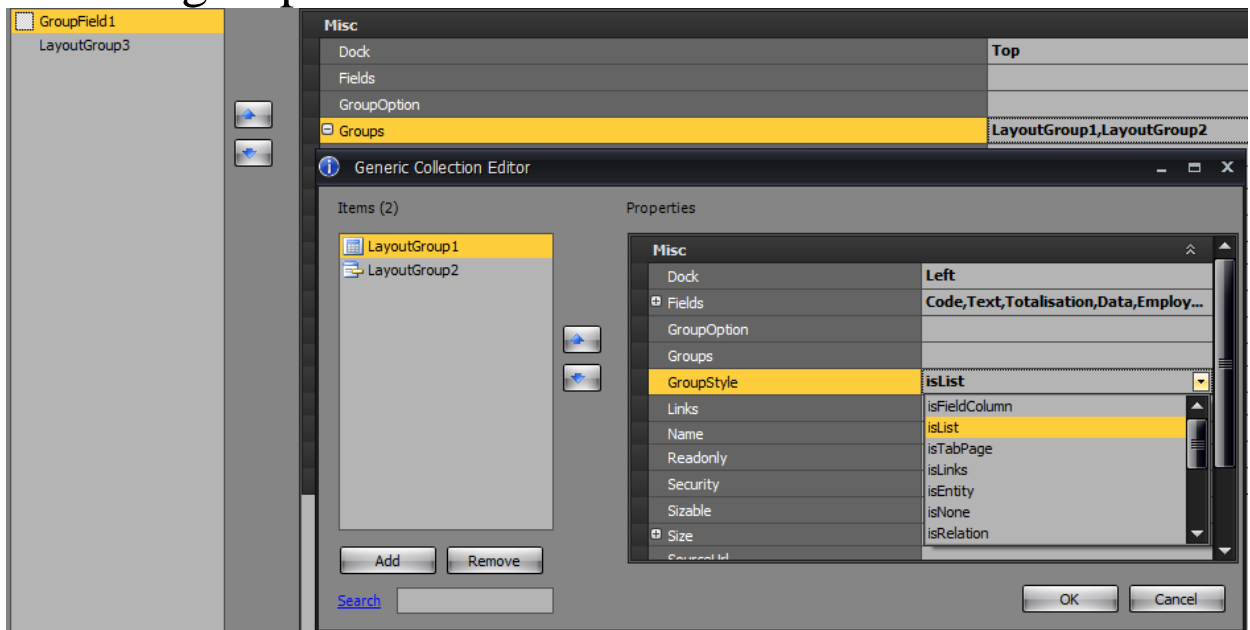


(Figure 5.2.2: Project entity)

## Entity Group

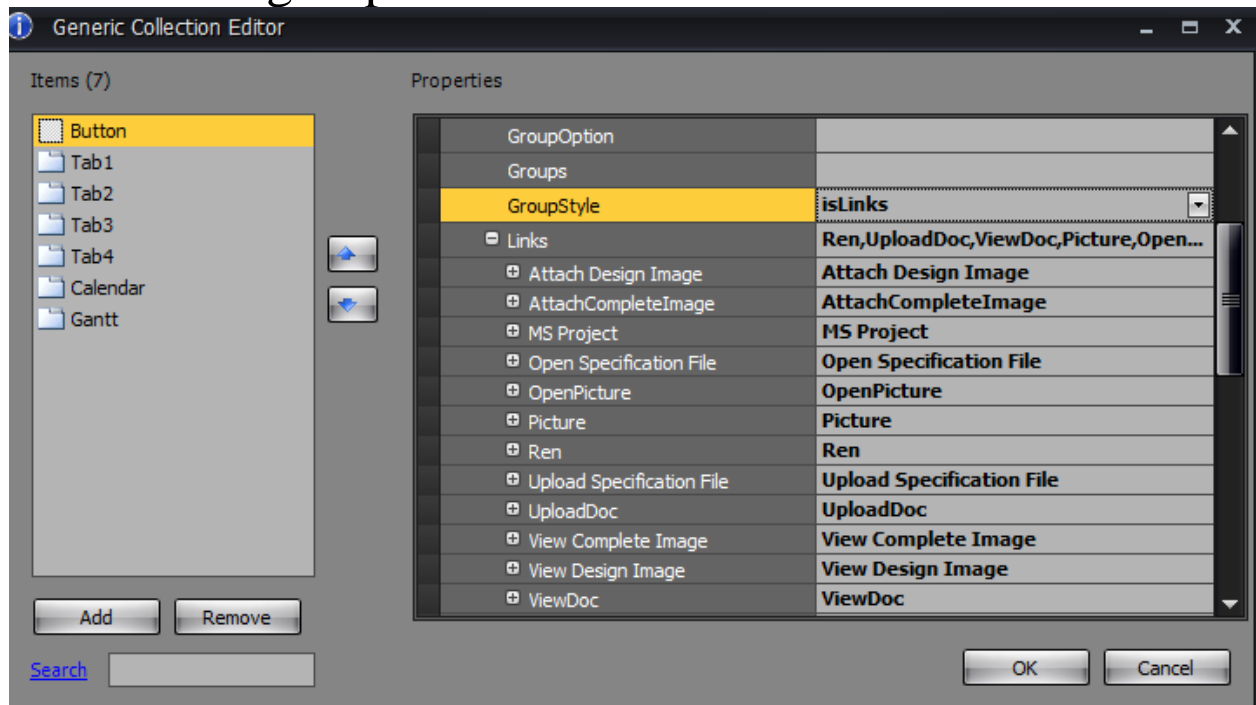
There are seven kinds of group in BFO:

**Normal group:** contains datafield information



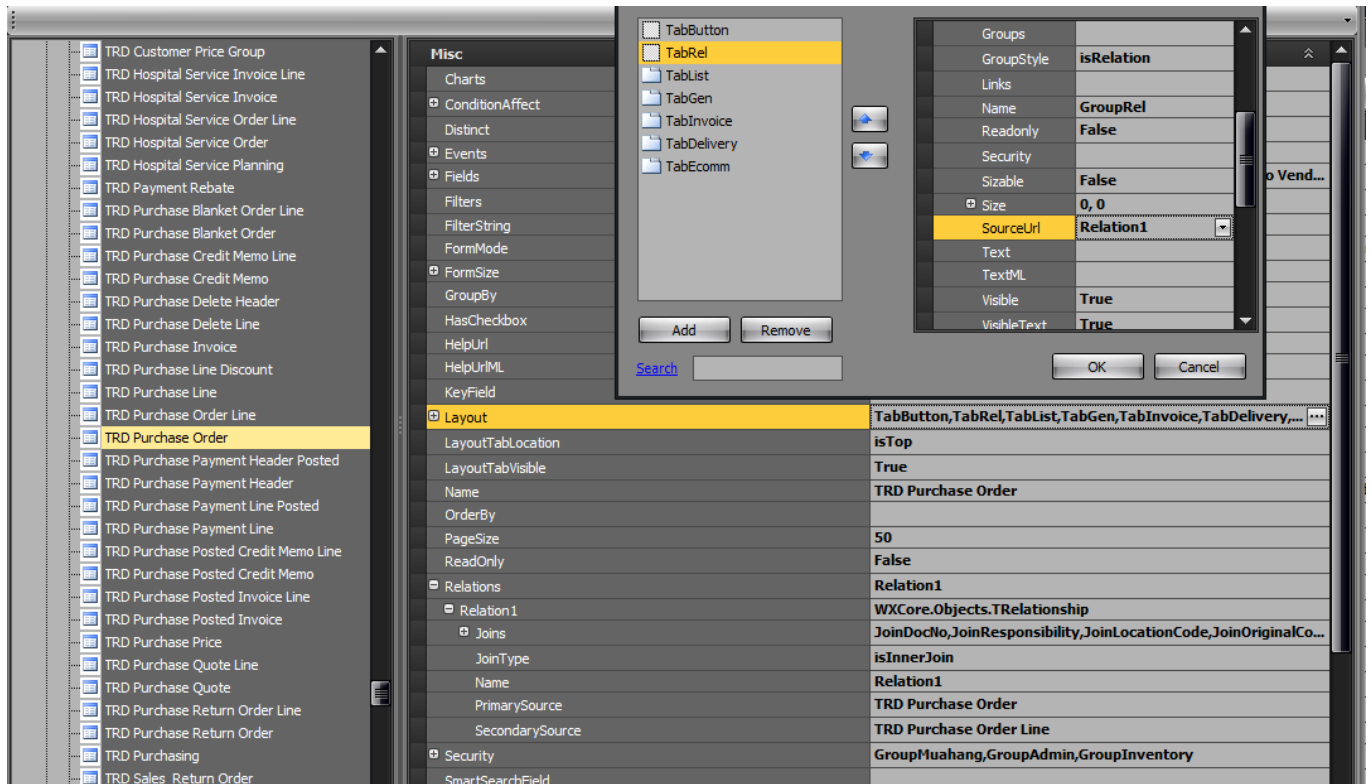
Groupstyle can be: IsList, IsFieldColumn, IsFieldRow or IsCard (see figure 5.2.2 Group List)

## Link action group: contain link action



See figure 5.2.2 Group Button as right dock.

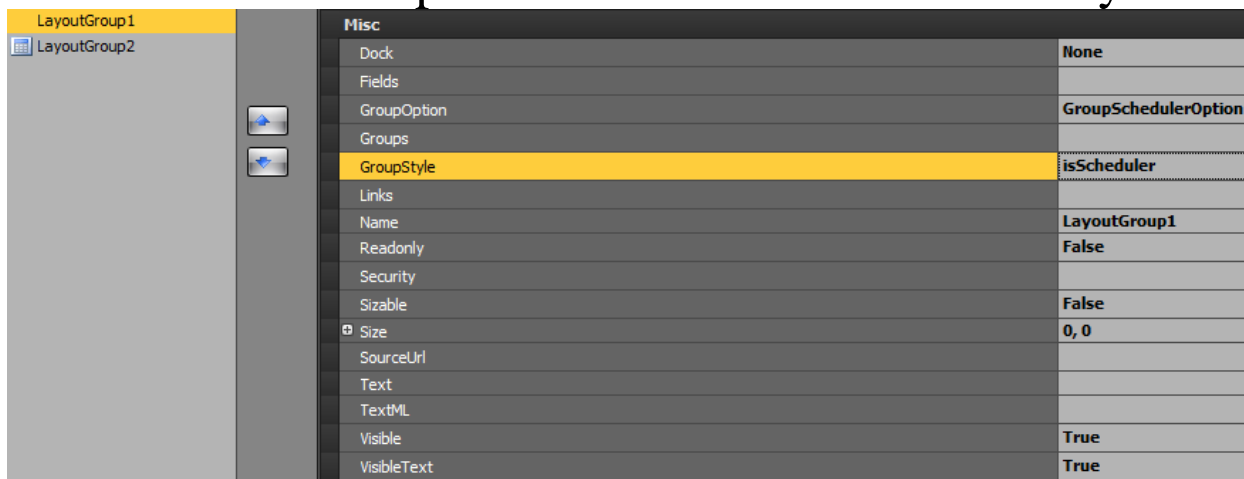
## Relation group: to link to other relation entity



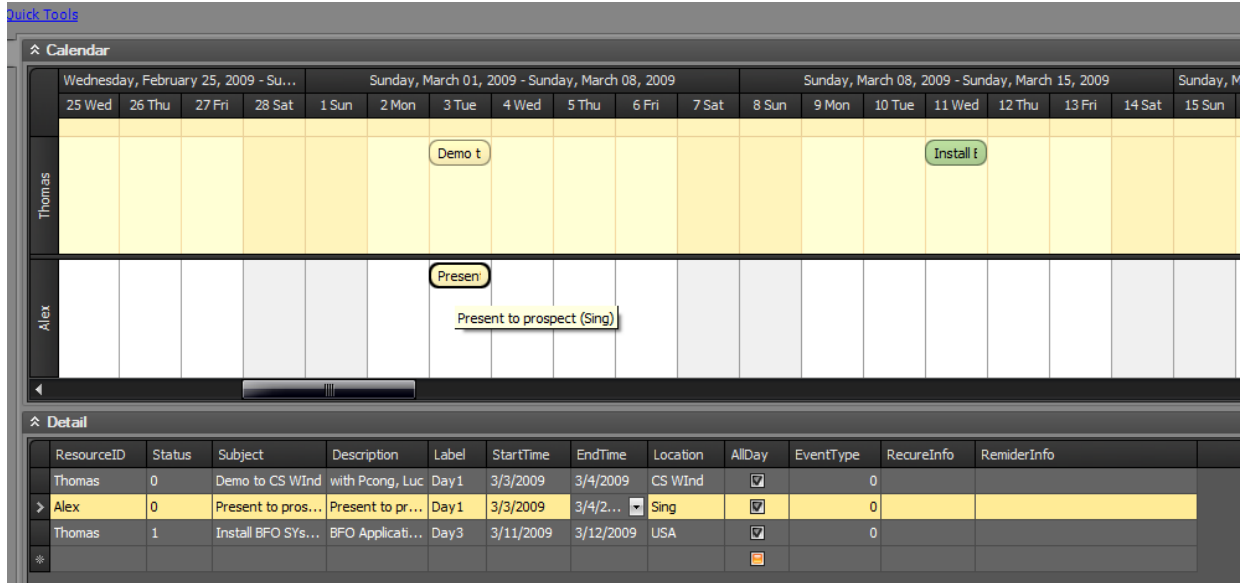
We can see that entity TRD Purchase Order is link to TRD Purchase Order Line Entity.

Group Relation "GroupRel" has groupStyle is IsRelation with SourceURL = Relation1 (defines IsInnerJoin).

## Scheduler Group: to use for calendar and alert system

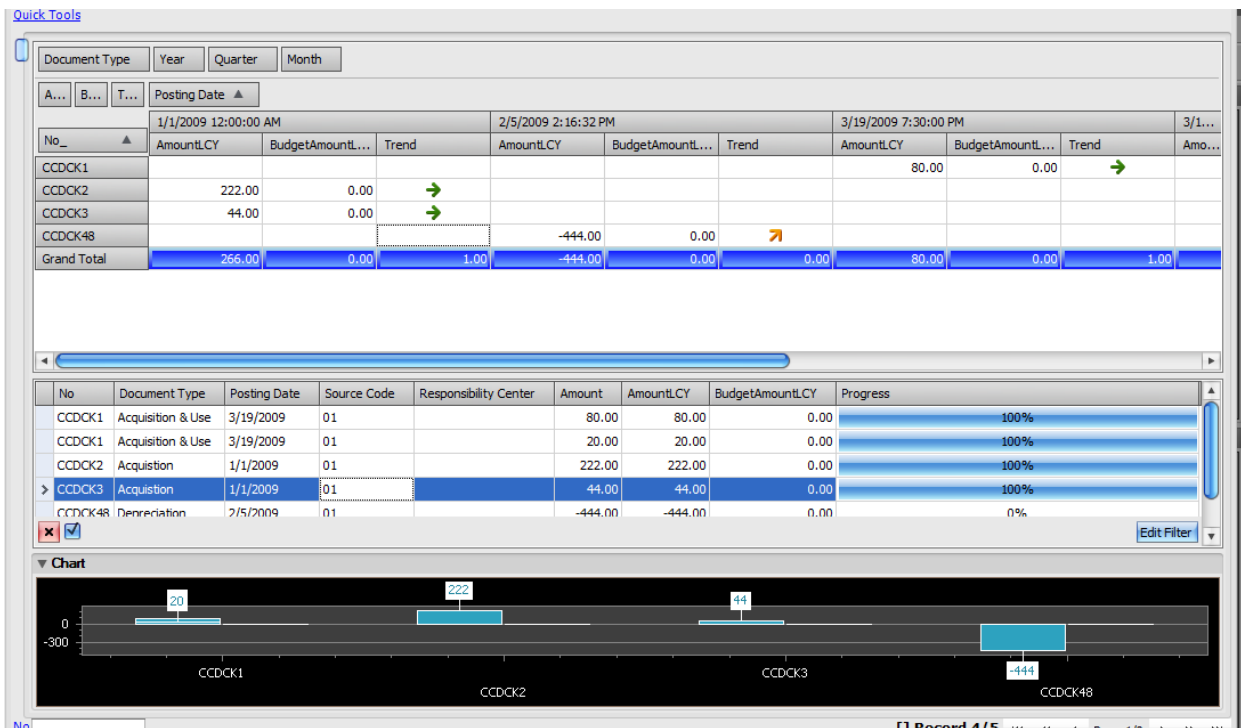


Result as follow:



## Chart Group: Use to present data in chart or Business Intelligence

Select GroupStyle as IsChart



## Gantt chart group: see figure 5.2.2 Group Gantt chart

Similar to Chart Group with Gantt option in GroupStyle

## Business view: view data in pivot table

Quick Tools CRM Opportunity

List: Closed Opportunity Code, Probability %, Revenue (LCY), Complete %

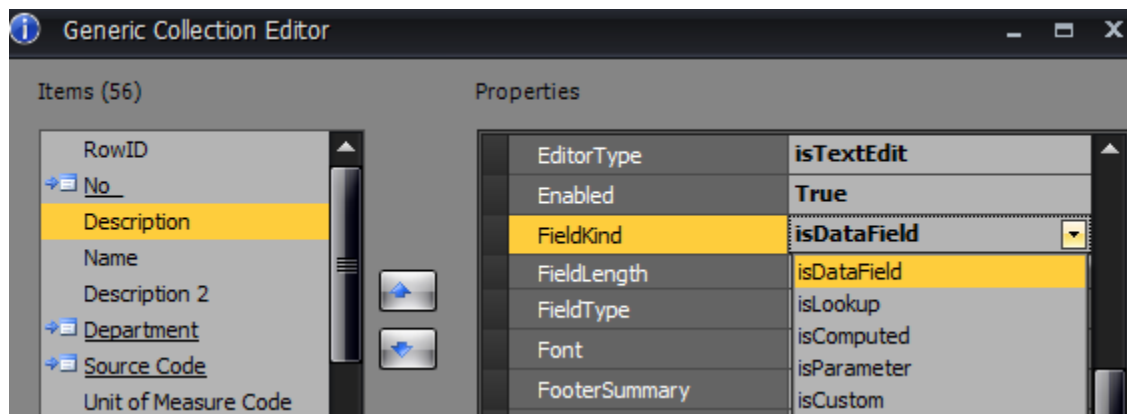
Detail: Estimated Value (LCY), Salesperson Code, Chances of Success %

		0	0001	0002	0003	Grand Total
Campaign ...	Contact No_	0	0	0	20	
	CN0007			0.00		0.00
	CN0009	0.00				0.00
	DT001		0.00			0.00
	DT007				260,000,000.00	260,000,000.00
	DT008			0.00		0.00
Total		0.00	0.00	0.00	260,000,000.00	260,000,000.00
ERP4Lease	CN0003				0.00	0.00
Grand Total		0.00	0.00	0.00	260,000,000.00	260,000,000.00

## Entity Data Field

There are four kinds of datafield in BFO: Normal Field, Lookup Field, Computed field and parameter field.

Normal field: this is database field



Lookup field: same with Normal field above, the most important thing in Lookup field is that, data is Lookup from other entity that we specify in Lookup information.

RowID	
➤ No_	
Description	
Name	
Description 2	
➤ Department	
➤ Source Code	
Unit of Measure Code	
Fixed Asset	
➤ Location Code	
➤ Asset Location Code	
➤ Vendor No_	
Budgeted Asset	
Warranty Date	
➤ Responsible Employee	
Serial No_	
Last Date Modified	
Blocked	
Picture	
Maintenance Vendor No_	
Under Maintenance	
Next Service Date	
Inactive	
FieldKind	<b>isLookup</b>
FieldLength	<b>10</b>
FieldType	<b>String</b>
Font	<b>(none)</b>
FooterSummary	
ForeColor	<b>Black</b>
Format	
HelpUrl	
HelpUrlML	
IndentField	
IsPassword	<b>False</b>
LabelAlign	<b>None</b>
Location	<b>0, 0</b>
Lookup	<b>Lookup</b>
CheckExist	<b>False</b>
DataSource	<b>(none)</b>
DisplayMode	<b>isCode</b>
EnableEdit	<b>False</b>
EntityUrl	Source Code
Expression	
Filters	
InputMode	<b>isEditable</b>

Computed Field: Data is computed from other entity that we specify in Computed information. This field does not exist in database and it is computed serverside and clientside:

Under Maintenance	
Next Service Date	
Inactive	
➤ No_ Series	
➤ Asset Posting Group	
DefFACode	
Σ FFAcquire	
Σ FFDepre	
Σ FFValue	
Dept	
➤ Depreciation Method	
Depreciation Starting Dat	
BackColor	<b>White</b>
ColumnWidth	<b>141</b>
Computed	<b>Computed</b>
ComputeSide	isServerSide
EntityUrl	<b>Asset Ledger Entry</b>
Expression	
Field	<b>Amount (LCY)</b>
Filters	<b>Filter1</b>
Formula	<b>SUM</b>
Security	
ShowFields	
DefaultValue	

Parameter Field: this is for report filter parameter and entity filter parameter.

Under Maintenance	BackColor	White
Next Service Date	ColumnWidth	0
Inactive	Computed	Computed
No Series	DefaultValue	Select top 1 [Department] from [Asset S...
Asset Posting Group	DefaultValueType	isSql
DeffACode	Editor	
FFAcquire	EditorType	isTextEdit
FFDepr	Enabled	True
FFValue	FieldKind	isParameter
Dept	FieldLength	0
Depreciation Method		

## BFO Report

To develop a customized report, generally, it needs three things as Parameter Form, Report Datasource and Report Template.

**1. Parameter Form :** This is a datasource entity for user to filter data for report.

**2. Report Datasource:** Datasource is a dataset we query by coding in vb.net.

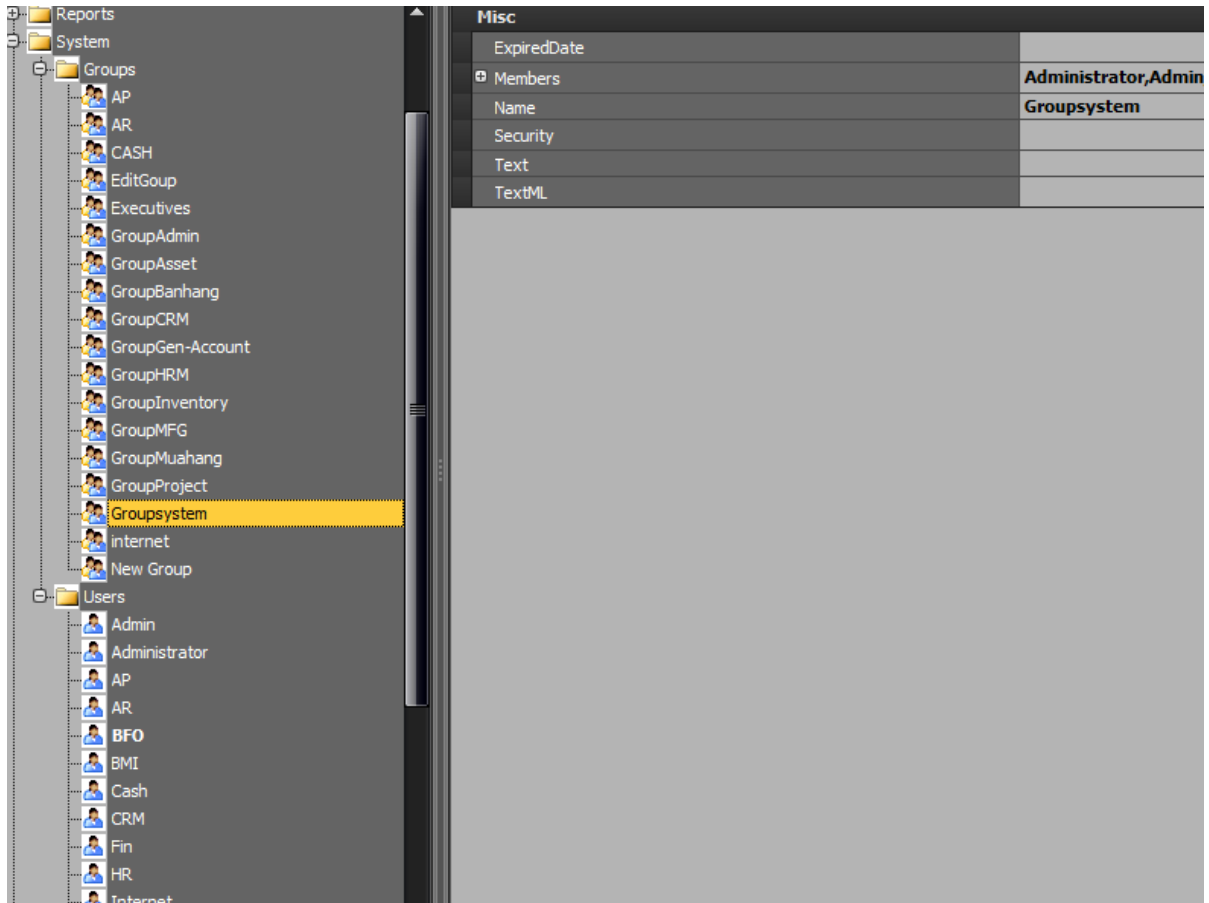
**3. Report Template :** This is a design of report and scriping with standard XML.

Object Space	Misc	
Dictionary	Class	Code.Reports.AA003
Entities	EntityUrl	Business Reporter
Links	Language	
Pictures	Name	AA003
Reports	Security	
Templates	SourceType	isScript
AA001	Template	AA003
AA002	Text	AA003-Financial Statement
AA003	TextML	VN
AA004		

Report AA003 has:      Parameter entity: Business Reporter  
 Report Datasource: from VB.net Class Code.Reports.AA003  
 Report Template: AA003

## BFO Security

For BFO security, we define User and Group and assign user belonged to one or more group as follow:



After that:

- + We assign security for group in link/Module -> we have Module security
- + We assign security for group in entity (Layout, group, Field or action link) -> we have entity, Layout, Group, field or action link security.
- + We assign security for group in filter (entity filter, Lookup filter, Relation Filter, Computed Filter -> we have record level security.

## BFO Dictionary

BFO dictionary is used for multi language purpose. We can select dictionary for EN (English) to Fr (France), EN to CH (China), EN to JP (Japanses), EN to KR (Koria).

