



Initial Administration Training Development in Openbravo ERP

12 February 2018



Advanced Development

Reporting features

Development environment

Deployment scenarios

http://wiki.openbravo.com/wiki/ERP/2.50/Developers_Guide/HowTos

- **Datasets**
- **Alerts**
- **Widgets**
- **Store procedures**
- **Processes**
- **Background processes**
- **REST Web services**

Development in Openbravo ERP

Dataset

Datasets allow to export the sets of data from different tables in one step. This is especially useful to manage and distribute the module along with reference data, for instance tax rates, regions or default data in a new table(s) added by a module.

The screenshot shows the 'Dataset - Document types' configuration window in Openbravo ERP. The interface includes a toolbar with icons for file operations and a table of datasets. Below the table, there is a detailed configuration section for a specific dataset.

Active	Module	Search Key ▲	Name	Description	Data Access Level ▲
Yes	Advanced Payables and Receivables	APRM_Docu	Document types	Set of document types for advance receivables and payables	Client/Organization

Table - C_DocType

Set of document types for advance receivables and payables

Table *
C_DocType ☒ Active

Module *
Receivables Mngmt - 3.0.12174 - English (USA)

HQL/SQL Where clause
documentCategory in ('FAT', 'REC', 'BSF', 'APPP')

☒ Include All Columns ☒ Exclude Audit Info ☐ IsBusinessObject

Development in Openbravo ERP

Alerts

Alerts are non-intrusive informational messages to individual users or groups (roles) about anything within the system. One can define unlimited number of alerts for various statuses, errors, informative purposes, reminder etc. Some examples are:

- Errors in the application dictionary that the System Administrator needs to be alerted about (e.g. a table without a an identifier)
- Errors in master data (e.g. a Business partner without an address)
- Notifications about critical situations (e.g. overdue payments)

The screenshot shows the 'Alert - Customers with exceded...' configuration window. It features a toolbar with icons for file operations and a main configuration area. The 'Client' is set to 'System' and the 'Organization' is set to '*'. The 'Name' field contains 'Customers with exceded credit' and the 'Active' checkbox is checked. The 'Sql' field contains the query: `from c_bpartner
where SO_CreditLimit<SO_CreditUsed
and iscustomer='Y'
and SO_CreditLimit!=0`. The 'Filter Clause' field is empty. The 'Tab' is set to 'Business Partner - Business Partner'.

Development in Openbravo ERP

Widgets

Widgets are the elements which create the My Openbravo main screen.

There are three types depending on the superclass inherited

- HTML Widget
- URL Widget
- Query/List Widget

HQL clause determines the information shown.

Planned delive	Document	Supplier	Product	Total	Received
02-07-2010	PW1	Restaurantes Luna Lien	Zumo de Piña Bio 0,33L	25	0
02-07-2010	PW1	Restaurantes Luna Lien	Descuento 5%	1	0
02-07-2010	PW1	Restaurantes Luna Lien	Vino Rosado 0,75L	15	0
02-07-2010	SO/50000	Healthy Food Supermarl	Diet Soda 0,5L	18	0
02-07-2010	SO/50000	Healthy Food Supermarl	Lager Beer 0,5L	17	0
02-07-2010	SO/50000	Healthy Food Supermarl	Discount 10%	1	0
02-07-2010	SO/50000	Healthy Food Supermarl	Orange Juice 0,5L	25	0
08-07-2010	PW2	Hoteles Buenas Noches	Vino Blanco 0,75L	5	0
08-07-2010	PW2	Hoteles Buenas Noches	Zumo de Pera Bio 0,33L	25	0
08-07-2010	SO/50001	Moon Light Restaurants	Sparkling Water 1L	25	0

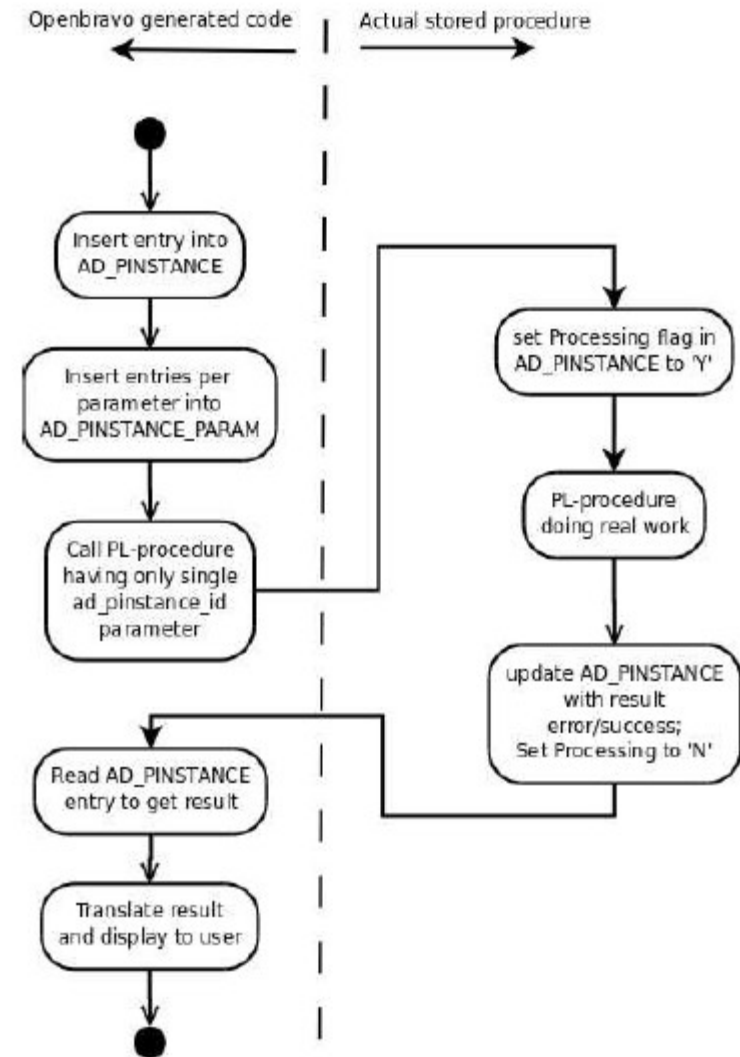
The screenshot shows the Openbravo development environment. At the top, there's a menu bar with 'Application', 'Alerts (0)', 'Help', and 'Openbravo'. Below it, a toolbar contains various icons for development actions. The main workspace is titled 'Widget' and shows the configuration for a widget class named 'Pending goods receipt'. The 'Widget Class' dropdown is set to 'Pending goods receipt'. The 'Active' checkbox is checked. The 'HQL' field contains the following query: `select ol.salesOrder.id as orderId, ol.salesOrder.orderDate as dateOrdered, ol.salesOrder.scheduledDeliveryDate as plannedDeliveryDate, ol.salesOrder.documentNo as salesOrder, ol.salesOrder.businessPartner.name as partner, ol.productname as productname, ol.attributeSet.value.description as attribute, ol.uom.name as uom`. The 'Query' tab is selected in the configuration panel.

Development in Openbravo ERP

Store Procedures

Stored procedures are blocks of code that form some of the business logic of Openbravo ERP. They are stored directly within the database which makes them database engine specific and dependent. Openbravo ERP currently only supports Oracle and PostgreSQL databases which have a very similar Procedural Language syntax.

AD_PINSTANCE and AD_PINSTANCE_PARAM tables store data when executing a store procedure.



The Java class implementing the process must extend the interface

`org.openbravo.scheduling.Process`

This interface just defines a method:

```
public void execute(ProcessBundle bundle) throws Exception;
```

This method receives a `ProcessBundle`, this bundle contains all the parameters for the process.

```
final String myParam = (String) bundle.getParams().get("myParam");
```

When the process finishes it must add a result to this bundle, this result is an `OError` instance that will be shown in the UI.

```
final OError msg = new OError();  
msg.setType("Success");  
msg.setTitle("Done");  
msg.setMessage("Process finished correctly");  
bundle.setResult(msg);
```


Development in Openbravo ERP

Background processes

Quartz is a robust, scalable and extensible open source process scheduling framework that can be integrated into virtually any Java EE or Java SE application.

- Is **simple**: Quartz provides a robust and well designed API that is easy to extend
- Is **configurable**: Quartz enables developers to customize the configuration of the scheduling environment
- **Listeners**: Quartz provides the ability to define listeners to do basically whatever you want in response to process behavior and events.
- **Plugins**: Quartz also provides the ability to define plugins that perform custom functionality when the scheduler starts up and shuts down.

Java Implementation

The `DalBaseProcess` is an abstract class that indicates the **doExecute** method to be implemented

```
public void doExecute(ProcessBundle bundle) throws Exception {
```

Development in Openbravo ERP

Web services

An Openbravo REST webservice implementation consists of two parts:

- A class implementing the desired web service behavior. This class should implement the interface:

`org.openbravo.service.web.WebService`

This interface has four methods which correspond to the HTTP request methods:

GET, POST, PUT, DELETE. The four methods all receive the same three parameters:

- 1. path: the part of the path after the context path,
 - 2. request: the Http request object,
 - 3. response: the Http response object.
- A configuration file to register the webservice with Openbravo REST framework

For example, if the webservice shall return all the sales orders for a certain product. The workflow of the service must be:

1. Receive the http request which contains the product ID as a parameter
2. Read all sales orders which have this product in any of the order lines
3. Convert the sales order(s) to an xml
4. Return the xml to the client browser sending the request

Advanced development

Reporting features

Development environment

Deployment scenarios

Reporting

JasperReports library

JasperReports, included in Openbravo ERP architecture, is an Open source library for reports implementation.

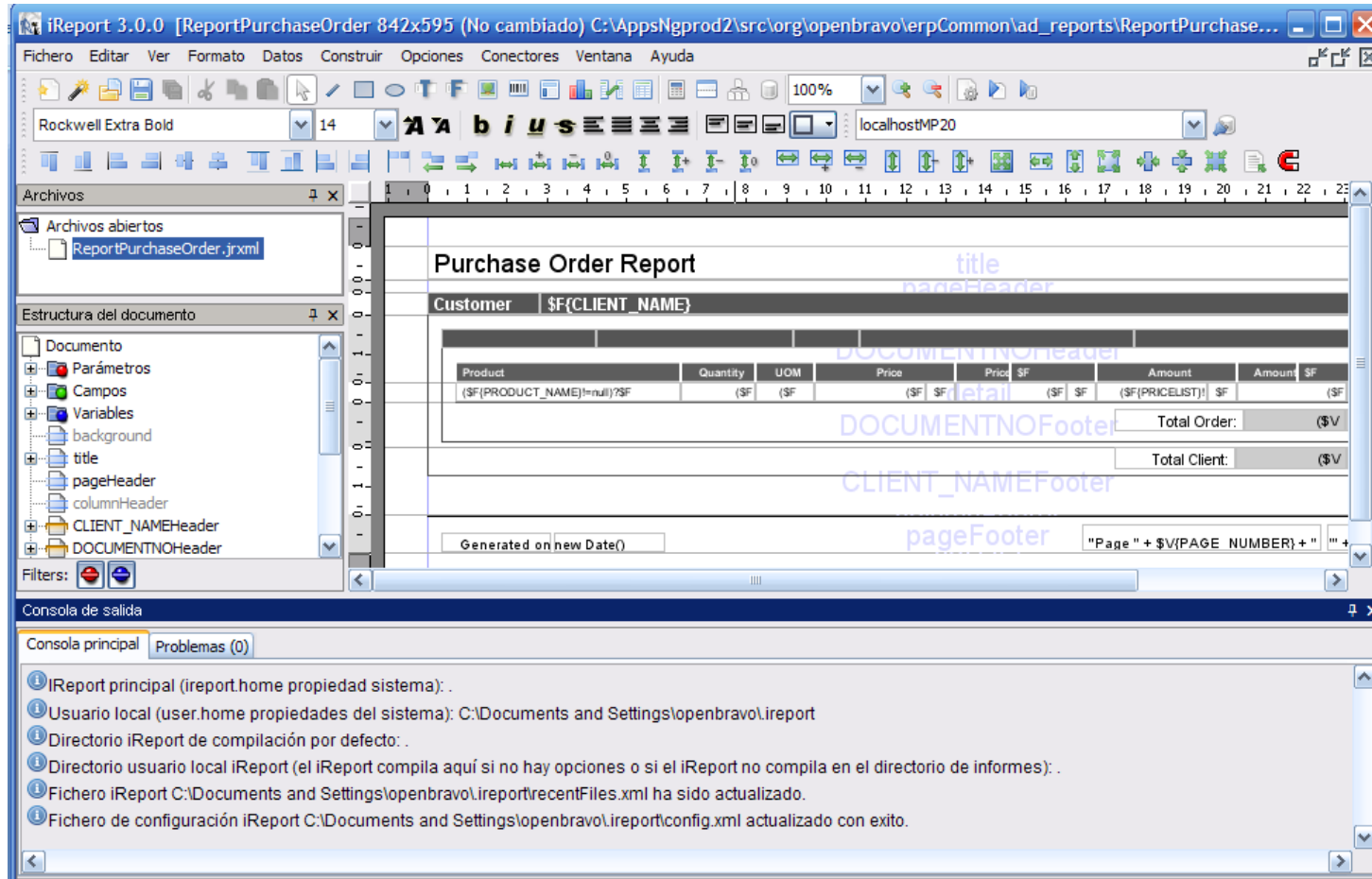
Development tool for these reports is **iReport**.

Latest version for Openbravo 3 RC7 is **4.0.1**

- Database connector (Oracle and PostgreSQL)
- Report generation wizard
- WYSIWYG
- Compilation and preview
- Output formats (csv, xls, pdf, html)
- Fields formatting
- Data grouping
- Parameter management
- Sub-reports creation
- Graphics design



Reporting iReport Tool



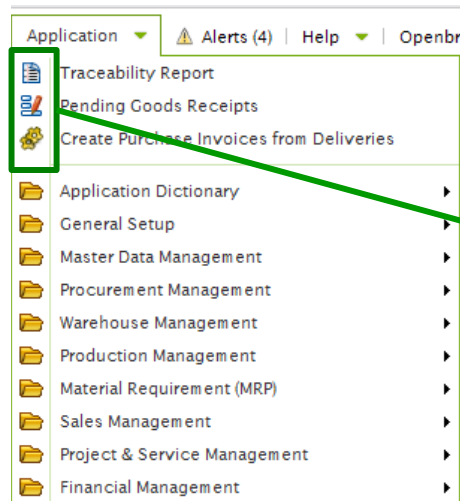
Source files
***.jrxml**



Binary files
***.jasper**

Reporting

Type of reports in Application Menu



Manually coded reports

Manually coded forms and generated windows

Embedded processes and reports

1. Manually coded reports: reports with filters manually coded

2. Manually coded forms : rapid entry forms

3. Generated windows: automatically generated windows from metadata


4. Embedded processes: execution of processes with view and controller automatically generated

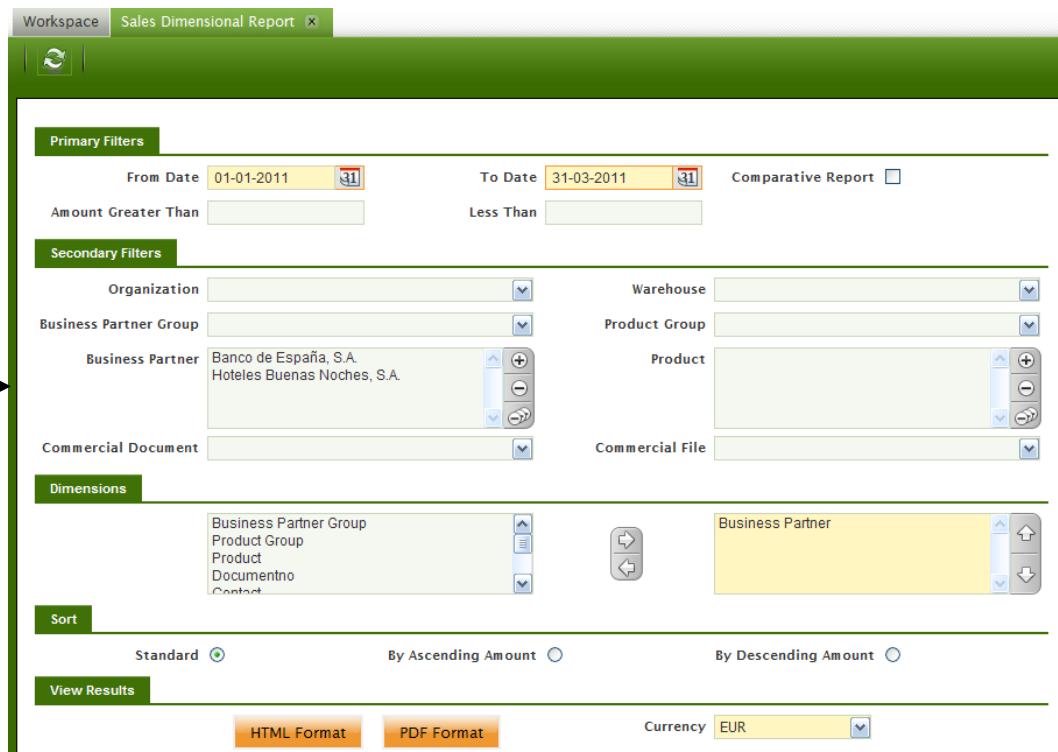
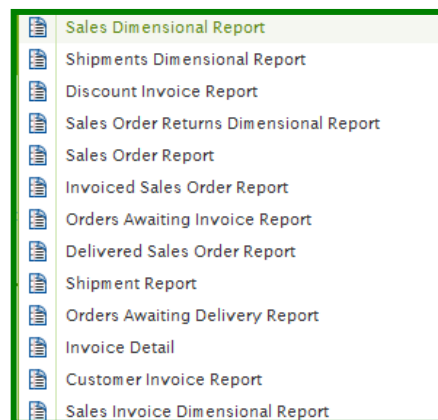
5. Embedded reports: execution of reports with filters automatically generated by the system engine

Reporting

Integration of reports in Openbravo ERP

1. Manually coded reports


- Filter windows are coded by XML Engine principles (HTML, XML, XSQL and JAVA files)
- Analysis Tools folder with icon 
- Radio buttons and multiple-choice business partner and product selectors
- Dimensional Reports
- Execute a Jasper Report
- High level of difficulty in modifications due to a lack of IDE

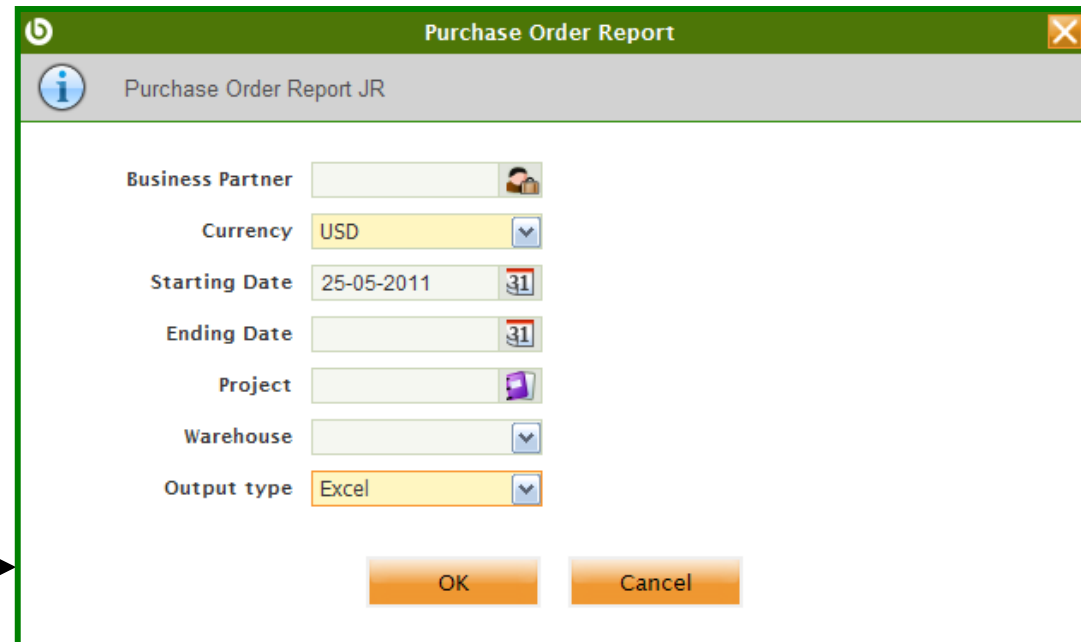
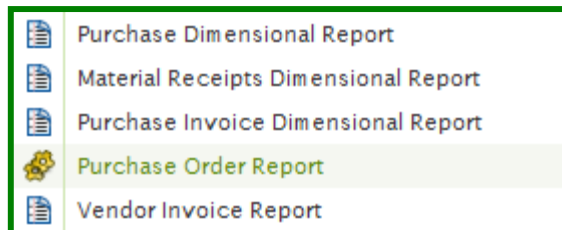


Reporting

Integration of reports in Openbravo ERP

2. Embedded reports

- Filters are automatically generated from the Application Dictionary
- Gear icon in the menu identifies this implementation 
- Restricted type of selector parameters
- Output format (xls, pdf, csv, html)
- Execute a Jasper report
- Low effort of implementation

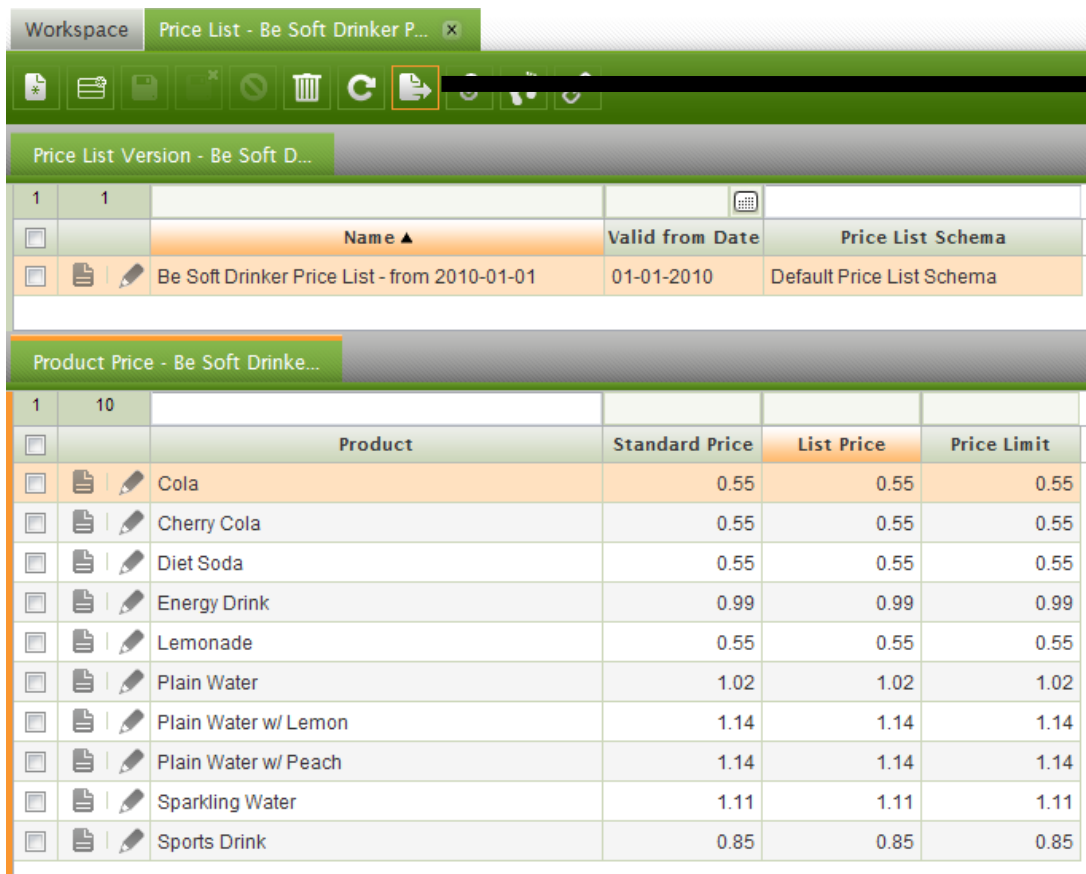
A screenshot of the 'Purchase Order Report' dialog box. The dialog has a title bar with the Openbravo logo and the text 'Purchase Order Report'. Below the title bar is a sub-header 'Purchase Order Report JR'. The main area contains several filter fields: 'Business Partner' (text field with a person icon), 'Currency' (dropdown menu showing 'USD'), 'Starting Date' (calendar icon showing '25-05-2011'), 'Ending Date' (calendar icon showing '31'), 'Project' (text field with a folder icon), 'Warehouse' (dropdown menu), and 'Output type' (dropdown menu showing 'Excel'). At the bottom right are 'OK' and 'Cancel' buttons.

Reporting

Integration of reports in Openbravo ERP

3. Export features

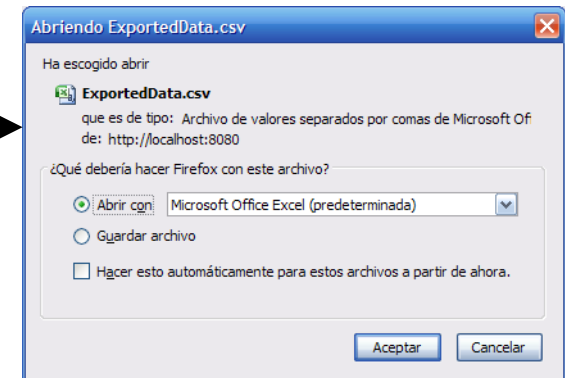
Out-of-the-box export features from all application windows
(tables and views of the database)



The screenshot shows the Openbravo ERP interface with a window titled 'Price List - Be Soft Drinker P...'. The toolbar contains an 'Export' icon (a document with an arrow) which is highlighted by a black arrow pointing to a dialog box on the right. Below the toolbar, there are two tables. The first table is 'Price List Version - Be Soft D...' and the second is 'Product Price - Be Soft Drinke...'. The first table has columns: Name, Valid from Date, and Price List Schema. The second table has columns: Product, Standard Price, List Price, and Price Limit.

1	1			
		Name ▲	Valid from Date	Price List Schema
		Be Soft Drinker Price List - from 2010-01-01	01-01-2010	Default Price List Schema

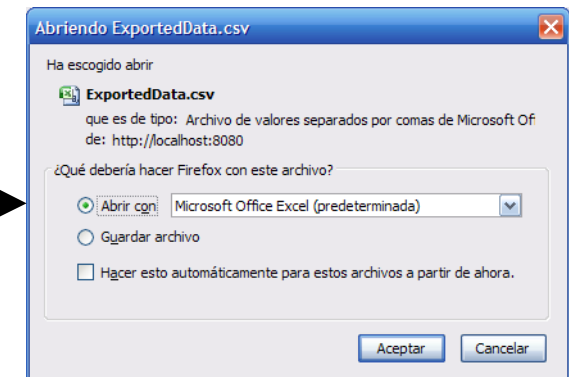
1	10				
		Product	Standard Price	List Price	Price Limit
		Cola	0.55	0.55	0.55
		Cherry Cola	0.55	0.55	0.55
		Diet Soda	0.55	0.55	0.55
		Energy Drink	0.99	0.99	0.99
		Lemonade	0.55	0.55	0.55
		Plain Water	1.02	1.02	1.02
		Plain Water w/ Lemon	1.14	1.14	1.14
		Plain Water w/ Peach	1.14	1.14	1.14
		Sparkling Water	1.11	1.11	1.11
		Sports Drink	0.85	0.85	0.85



4. QueryList Widgets

Out-of-the-box export facilities from QueryList widgets

Invoices to collect					
Document Number	Business Partner	Date			
FV/2	Hoteles Buenas Noches, S.A.	15-07-2010	<div>Edit Settings Refresh Delete this widget <u>Export as CSV</u> About</div>		
SI/100005	Moon Light Restaurants, Co.	16-08-2010			
FV/6	Hoteles Buenas Noches, S.A.	16-08-2010			
FV/7	Hoteles Buenas Noches, S.A.	18-08-2010			
SI/100006	Moon Light Restaurants, Co.	18-08-2010			
FV/8	Hoteles Buenas Noches, S.A.	23-08-2010		906.83	USD
SI/100007	Sleep Well Hotels, Co.	23-08-2010		368.68	USD
SI/100008	Sleep Well Hotels, Co.	26-08-2010		187.33	EUR
FV/9	Hoteles Buenas Noches, S.A.	26-08-2010		334.32	EUR
FV/10	Alimentos y Supermercados, S.A.	31-08-2010			



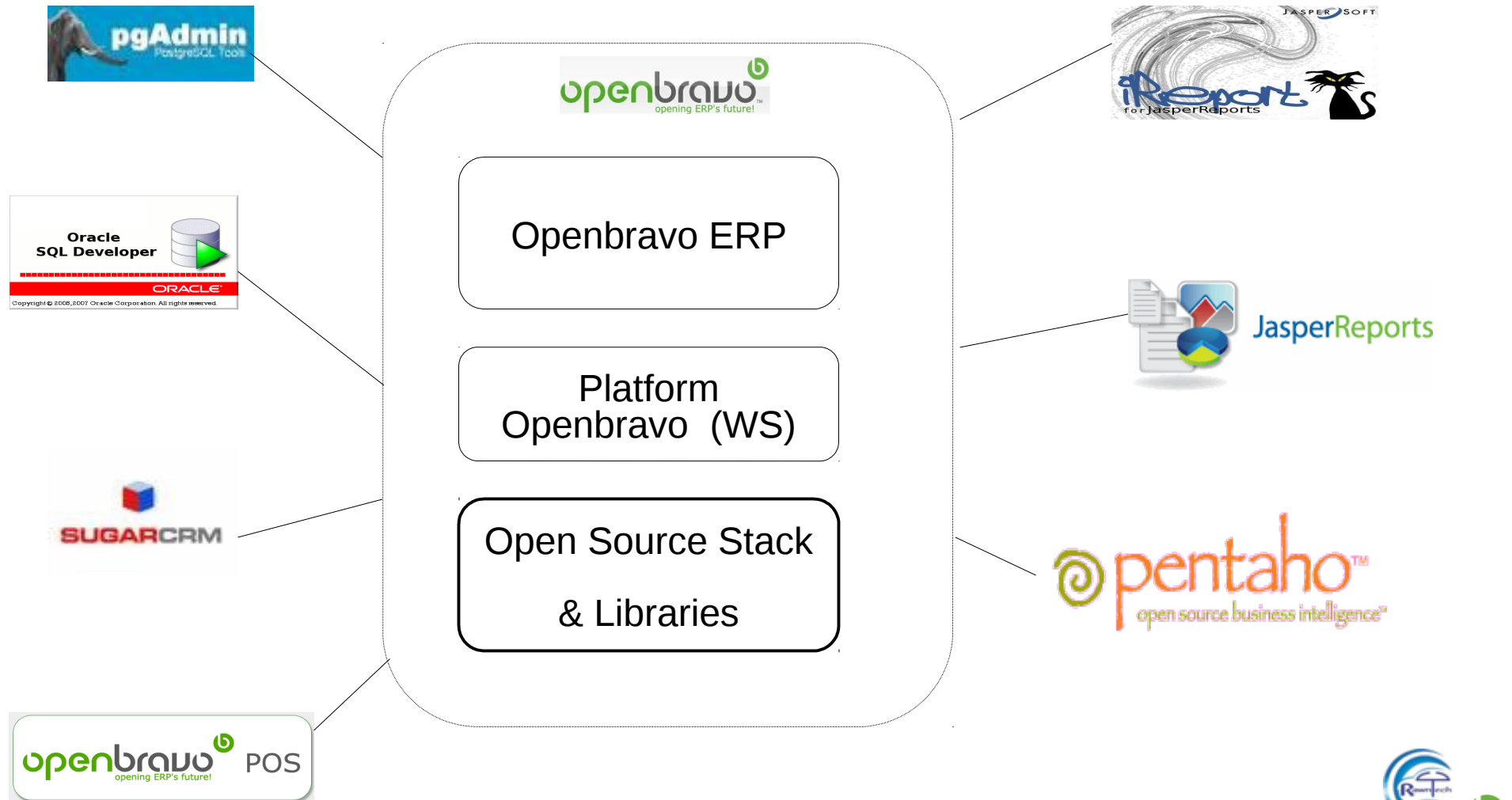
Advanced development

Reporting features

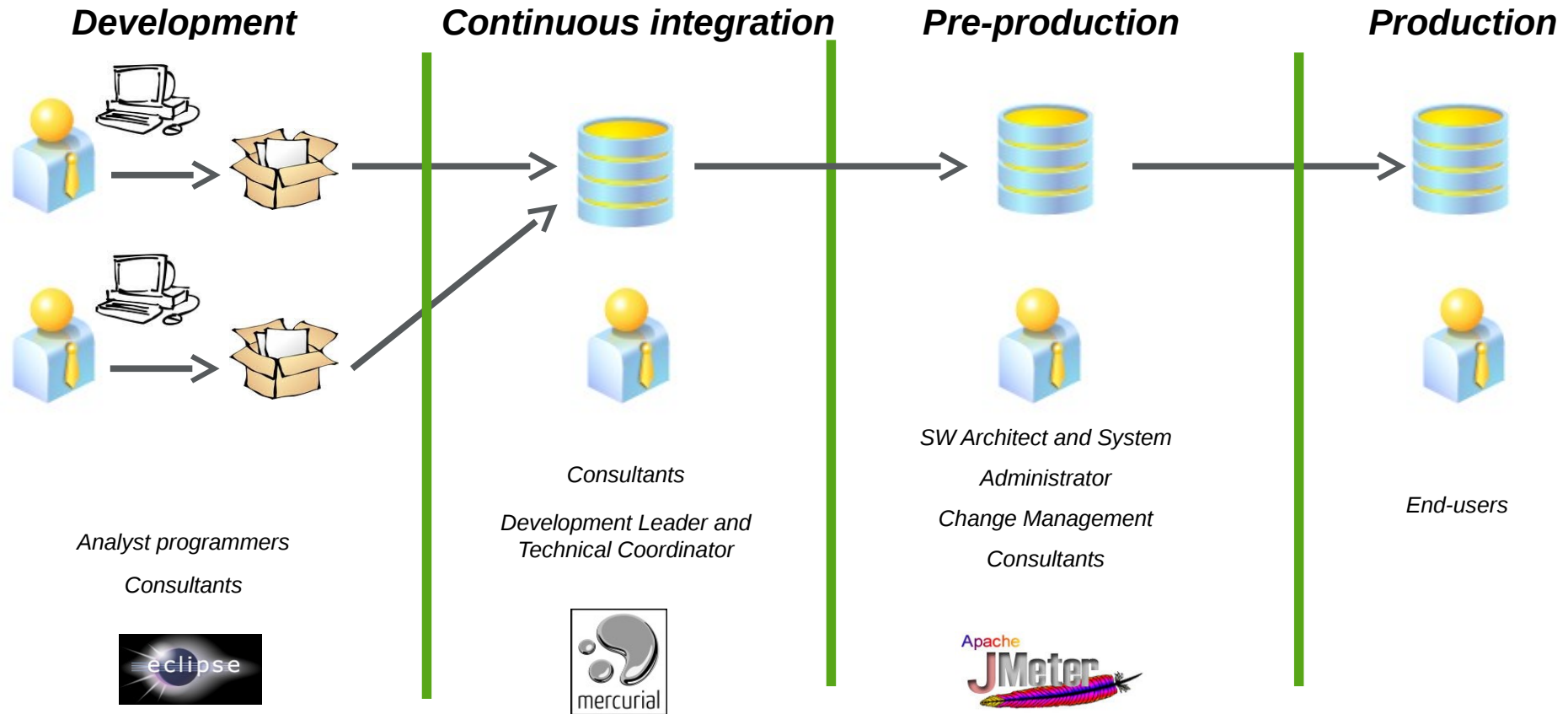
Development environment

Deployment scenarios

Working environment and third party applications

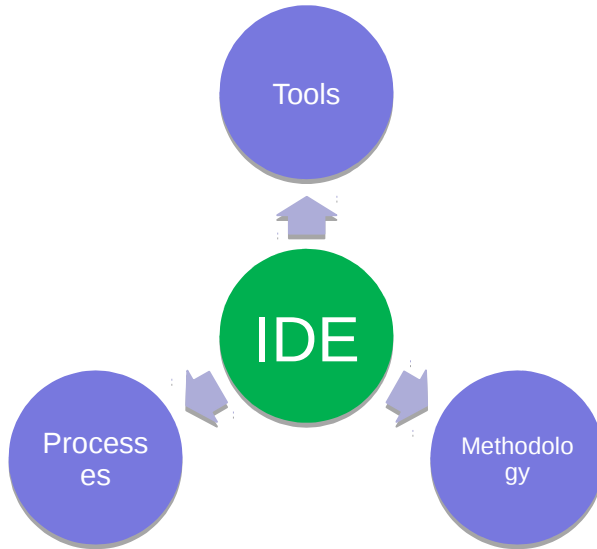


Working environment and third party applications



Working environment

IDE: Integrated Development Environment

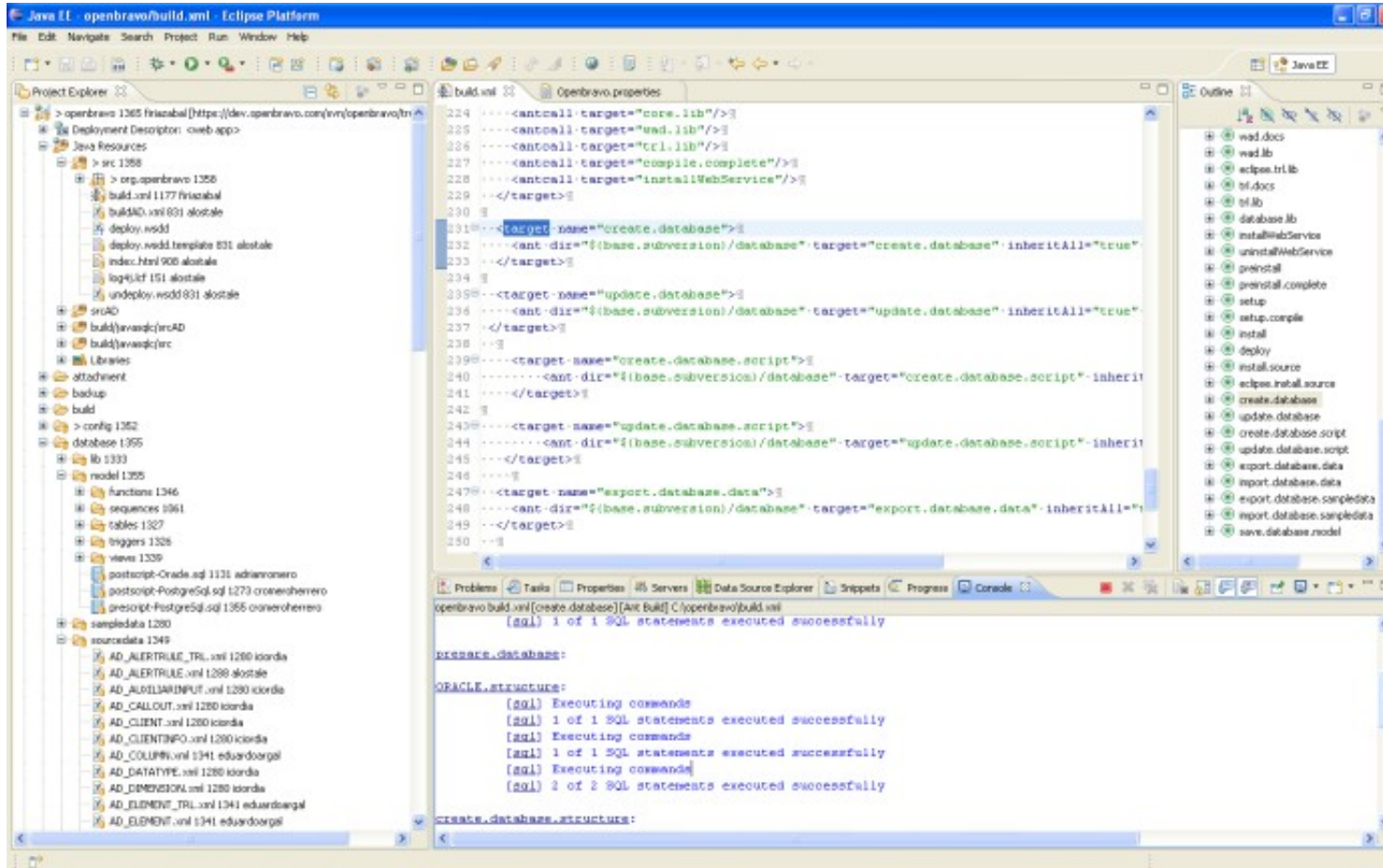


- **Mercurial repository** for source code and database XML-plain files
- **Ant tasks** to build and manage the applications
- **Firebug or Chrome Developers Tools** to debug and test JavaScript code
- **Based on Eclipse**, integrated and graphic environment for development tasks

http://wiki.openbravo.com/wiki/ERP/2.50/Developers_Guide/Installation_and_setup_of_Eclipse_IDE

Working environment

IDE: Integrated Development Environment



- Files organized by projects
- Integrated with Mercurial or other SCM tools
- Integrated with Apache Ant tasks
- Integrated with Apache Tomcat
- Debugging

Advanced development

Reporting features

Development environment

Deployment scenarios

Openbravo ERP Editions Comparison

Functionality

- Professional localizations
- Tier 1 modules: simple, self-implementable modules that can be purchased directly by end client
- Tier 2 modules: high value modules that generally require partner implementation services.

	Community	Basic	Professional
Functionality			
Core Finance, Sales, Procurement, Warehouse, Master Data	✓	✓	✓
Open source modules	✓	✓	✓
Professional localization ⓘ		\$	∅
Commercial modules (tier 1) ⓘ		\$	∅ \$
Commercial modules (tier 2) ⓘ			Partial list of tier 2 modules: ∅ Manufacturing ∅ MRP ∅ Projects & Service \$ Advanced Asset Management \$ Intercompany Documents \$ 3rd-Party



Available with no additional cost



Available at additional cost

Openbravo ERP Editions Comparison

Support and Implementation tools

- Module Management console to upgrade the modules
- 5 years maintenance on major releases to control upgrade process and timing
- Minimizes support and maintenance costs of the stack
- SLA-based second level support
- Concurrent /named users
- Basic: 1€ / day up to 5 cu

	Community	Basic	Professional
Support and maintenance			
Community support	✓	✓	✓
Click-thru installation of maintenance packs ⓘ		✓	✓
Product lifecycle guarantee ⓘ			✓
Maintained technology stacks ⓘ			✓
Support and defect fixing guarantee ⓘ			✓
Intellectual property protection ⓘ			✓
Implementation tools			
On site and cloud deployable	✓	✓	✓
End user screen extensibility ⓘ		✓	✓
Backup management ⓘ			✓
Licensing and pricing			
Source code access	✓	✓	✓
Availability	Internet Download	Internet Download Internet Download (Basic Pricing)	Internet Download Openbravo Partners (Professional Edition Pricing)

Openbravo ERP Editions Comparison

Administration console

Configuration Wizard

[Learn More](#)

This wizard will guide you through a set of configuration steps necessary for this version of the appliance. Saving each step will take you to the next step and complete the wizard.

Remaining configuration steps:

Change Password

Configure Notification

Configure Networking

Back Up and Restore

Linux Password

Root Password

Manage Entitlements

Back Up and Restore

Backup Settings

Configure a backup location to use for both scheduled and on-demand (immediate) backups. Specify a number of backups to keep at that location. For regularly scheduled backups, enable and configure a backup schedule.

Backup Settings

Enable Backups: ☐ YES ☒ NO

Backup Schedule

Enable backup schedule? ☒ YES ☐ NO

Schedule: ☐ DAILY ☒ WEEKLY ☐ MONTHLY

Weekly Options:

Day / Time:

Backup Location

Number of backups to keep:

[http://wiki.openbravo.com/wiki/ERP/2.50/Professional Subscription Manual](http://wiki.openbravo.com/wiki/ERP/2.50/Professional_Subscription_Manual)

Supported technology stacks

You can either download and configure each stack component **manually**, or choose one of the Openbravo ERP Professional Edition **deployment packages**, which will install and optimally configure them automatically.

Two pre-configured deployment packages are available

- **Ubuntu Package**
- **Cloud Appliance**

Fast Deployment	Ubuntu	Cloud Appliance
Installer	Ubuntu Installer	Appliance Installer
Software Appliance		✓
Virtual Environment Ready	✓	✓
Certified Hardware	✓	✓
Included Firewall	✓	✓
Public Cloud Ready	✓	✓
Private Cloud Ready	✓	
Always updated	Ubuntu	Cloud Appliance
Third Party Software Bug Support	✓	✓
Access Stack Patches and Updates	Automatic	Automatic
Web Based Remote Administration Console	Available (Canonical Landscape)	Included
System Rollbacks		✓
Automatic System Back-ups	Available	Included
Operating Environment	Ubuntu	Cloud Appliance
Included Certified Software Stack	✓	✓
Operating System	Ubuntu Linux	rPath Linux
Database	PostgreSQL included (Oracle available)	PostgreSQL
Application Server	Tomcat	Tomcat
Included Licences	Ubuntu	Cloud Appliance
Third Party Software Licences	✓	✓

Choosing your Professional Edition Installation Option

- **Install ERP from sources vs. Deployment Packages**

Downloading and installing Openbravo ERP from the sources gives you access to the source code and enables you to set up a development environment should you wish to develop extension modules, but requires technical expertise. Using a deployment package requires no technical expertise, and is generally recommended for most end customer deployments.

- **Single or multi-server**

Cloud Appliance deployment package is a single-server solution, while the Ubuntu Package (and of course manually deploying from sources) support multi-server deployments. Sizing document must be checked to determine HW needs.

- **Managed Stack updates**

Updates to the technology stack are provided with both deployment packages, providing a secure operating environment for your ERP, with minimal IT administration required.

- **Physical vs. Virtual Deployment**

Both options are supported by both deployment packages.

- **Cloud Deployment**

Cloud deployment from sources is possible, but is not trivial and requires deep expertise. Cloud deployment is very easy with both deployment packages.

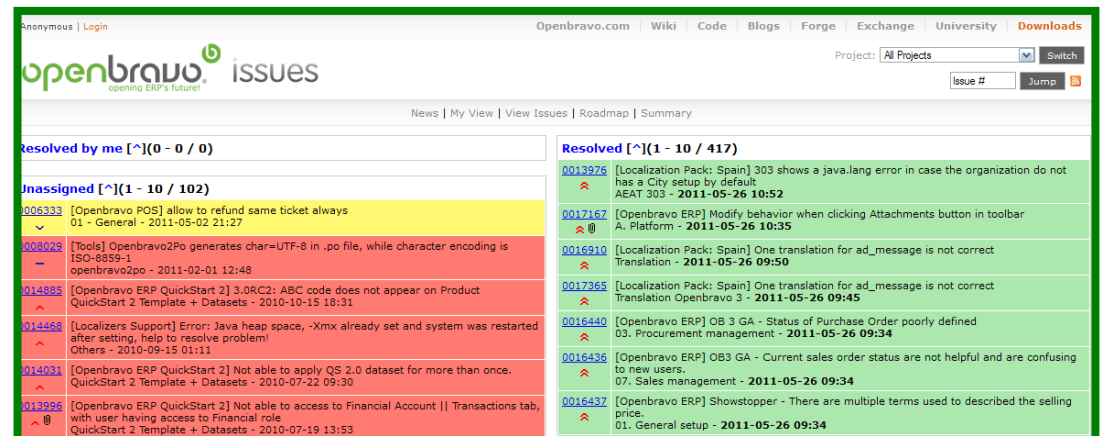
Support and Maintenance

- **Major and Minor versions: 3 RCX, 2.50 MPX**
- **Maintenance Packs**
- **SLA-based 2nd level Support** <http://support.openbravo.com>
- **Public roadmap**

http://wiki.openbravo.com/wiki/Openbravo_ERP_roadmap

- **Issues**

<https://issues.openbravo.com>



The screenshot shows the Openbravo Issues page. The header includes the Openbravo logo and navigation links: Openbravo.com, Wiki, Code, Blogs, Forge, Exchange, University, and Downloads. A search bar is present with a 'Switch' button. The main content area is titled 'Issues' and shows a list of tickets. The tickets are organized into two columns: 'Unassigned' and 'Resolved'. The 'Unassigned' column shows tickets 006333, 008028, 014885, 014468, 014031, and 013996. The 'Resolved' column shows tickets 0013976, 0017167, 0016910, 0017365, 0016440, 0016436, and 0016437. Each ticket entry includes a ticket number, a brief description, and a date.

Unassigned	Resolved
006333 [Openbravo POS] allow to refund same ticket always 01 - General - 2011-05-02 21:27	0013976 [Localization Pack: Spain] 303 shows a java.lang error in case the organization do not has a City setup by default AEAT 303 - 2011-05-26 10:52
008028 [Tools] Openbravo2Po generates char=UTF-8 in .po file, while character encoding is ISO-8859-1 openbravo2po - 2011-02-01 12:48	0017167 [Openbravo ERP] Modify behavior when clicking Attachments button in toolbar A. Platform - 2011-05-26 10:35
014885 [Openbravo ERP QuickStart 2] 3.0RC2: ABC code does not appear on Product QuickStart 2 Template + Datasets - 2010-10-15 18:31	0016910 [Localization Pack: Spain] One translation for ad_message is not correct Translation - 2011-05-26 09:50
014468 [Localizers Support] Error: Java heap space, -Xmx already set and system was restarted after setting, help to resolve problem! Others - 2010-09-15 01:11	0017365 [Localization Pack: Spain] One translation for ad_message is not correct Translation Openbravo 3 - 2011-05-26 09:45
014031 [Openbravo ERP QuickStart 2] Not able to apply QS 2.0 dataset for more than once. QuickStart 2 Template + Datasets - 2010-07-22 09:30	0016440 [Openbravo ERP] OB 3 GA - Status of Purchase Order poorly defined 03. Procurement management - 2011-05-26 09:34
013996 [Openbravo ERP QuickStart 2] Not able to access to Financial Account Transactions tab, with user having access to Financial role QuickStart 2 Template + Datasets - 2010-07-19 13:53	0016436 [Openbravo ERP] OB3 GA - Current sales order status are not helpful and are confusing to new users. 07. Sales management - 2011-05-26 09:34
	0016437 [Openbravo ERP] Showstopper - There are multiple terms used to described the selling price. 01. General setup - 2011-05-26 09:34



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