

# Harness the Power of the ABL and BIRT for Business Forms Generation

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# Agenda

- BIRT Overview
- BIRT Report Designer
- Integrating BIRT into an OpenEdge Application



# What is BIRT?

- J2EE Based Reporting System
- Open Source
  - <http://www.eclipse.org/birt/phoenix/>
- Actuate
  - <http://www.actuate.com/>

# What is BIRT?

- Allows for the Generation of:
  - Lists
  - CrossTab Reports
  - Charting
  - Multi Column Reports
  - Letters
  - Graphics

# Components

- Report Designer
- Report Engine
- Charting Engine
- Report Viewer

# Components

- Report Designer
  - The BIRT Report Designer is an Eclipse perspective that is used to create BIRT report designs.
  - Designs are stored in an open XML format.
  - Configured as:
    - Plug into current Eclipse environment
    - Download as a stand alone Eclipse environment
    - RPC Windows Desktop Application

# Report Designer

The screenshot displays the Eclipse IDE's Report Designer interface. The main window shows a report design for 'Sports2K Invoice'. The report is structured as follows:

Line	Item Num	Item Name	Qty	Price	Ext Price
[dsOline::Linenum]	[dsOline::Itemnum]	[dsOline::Itemf]	[dsOline::Q]	[dsOline::Price]	[dsOline::Extende...]
<b>Total:</b>				Σ[InvoiceTotal]	

Additional report elements include:

- Header: [CurrentDate]
- Order Details: Order Num: [dsOrder::Ordernum], Customer Name: [dsOrder::CustName], [dsOrder::Address1], [dsOrder::Address2], [CityStateZip]
- Remit To: Sports2K Payment Center, P.O. Box 12556, Atlas, GA 20022

The interface also features a left-hand pane with a tree view of Data Sources (xmlOrderInvoice, Data Sets: dsInvoice, dsOline, dsOrder, Data Cubes, Report Parameters, Variables) and a Navigator pane showing the project structure. A Property Editor at the bottom provides settings for the selected cell, including Element ID (20), Drop (None), Vertical alignment (Auto), Style (None), Font (Sans Serif, Size 10), and Color (Black).



# Components

- Report Engine
  - Uses report design files and a specified data-source to generate and render reports.
  - An API is provided allow the Report Engine to be embedded into any Java/Java EE application.
  - The BIRT Report Viewer uses this API to execute and render reports.



# Components

- Charting Engine
  - The Charting Engine is used to design and generate Charts.
  - The Charting Engine API allows Java/Java EE developers to add charting capabilities to their applications.
  - The Report Design and Report Engines make use of the API to deliver Charts.

# Components

- BIRT Viewer
  - Servlet based tool for executing, rendering and interacting with a report.
  - Part of the Report Designer
  - Requires a servlet engine like Tomcat.
  - Can be deployed by itself as a Tomcat Application.

# Components

- BIRT Viewer
  - Provides web output as a single HTML document, paginated HTML, PDF, XLS, DOC, PPT, and Postscript.
  - Additionally the viewer allows exporting the data to CSV
  - Supports local and remote printing.

# Viewer

BIRT Report Viewer				
Showing page 3 of 23				
	<u>Sales Rep</u>	<u>Customer Name</u>	<u>CreditLimit</u>	<u>Balance</u>
BBB	Brawn , Bubba B.	Cardinal Sports	21100.0	0.0
	Brawn , Bubba B.	Famous Footwear	17900.0	0.0
	Brawn , Bubba B.	Sports Shak	33400.0	0.0
	Brawn , Bubba B.	Slugger's Den	24100.0	0.0
	Brawn , Bubba B.	National Diving Ctr	47200.0	29766.05
	Brawn , Bubba B.	Irving's Sport Shops	29500.0	0.0
	Brawn , Bubba B.	Jay's Sport & Trophy	17900.0	11393.9
	Brawn , Bubba B.	Rei-recreational Equipment Inc	17000.0	0.0
	Brawn , Bubba B.	Three Rivers Resort & Outfit	15600.0	0.0
	Brawn , Bubba B.	Bud's Sporting Goods & Fntn	17900.0	0.0
	Brawn , Bubba B.	Nomad Cyclery	38600.0	11717.89
	Brawn , Bubba B.	S & S Gear	48600.0	0.0
	Brawn , Bubba B.	Copeland Sports	28300.0	0.0
	Brawn , Bubba B.	Golden Bear Skate Shop	16600.0	0.0
	Brawn , Bubba B.	Southwest Dart & Billiard	13700.0	0.0
	Brawn , Bubba B.	Edington's Fine Golfwear	33400.0	19268.49
	Brawn , Bubba B.	All Sports	40300.0	0.0
	Brawn , Bubba B.	Main Event	34600.0	6144.51
	Brawn , Bubba B.	Golf Augusta Pro Shop	45300.0	16669.64
	Brawn , Bubba B.	Tink's Sport Stop	21300.0	12645.81
	Brawn , Bubba B.	Rocky's Sporting Goods	23500.0	11037.53
	Brawn , Bubba B.	Just For Kicks Soccer Ctr	8700.0	0.0
	Brawn , Bubba B.	Ready's Home Recreation	6300.0	1251.45
	Brawn , Bubba B.	Skagway Sports Emporium	44000.0	19075.0
	Brawn , Bubba B.	Arctic Gunworks	31900.0	0.0
	Brawn , Bubba B.	Western Auto	10000.0	0.0
		<b>SubTotal:</b>		<b>\$ 767,558.66</b>
DKP	Pitt , Dirk K.	Urpon Frisbee	27600.0	437.63
	Pitt , Dirk K.	Aerobics valine Ky	13500.0	1112.44
	Pitt , Dirk K.	Pihtiputaan Pyora	29900.0	1242.14
	Pitt , Dirk K.	Keilailu ja Biljardi	10900.0	1186.8
	Pitt , Dirk K.	Surf Lautaveikkoset	6500.0	0.0
	Pitt , Dirk K.	Biljardi ja tennis	18200.0	1227.58



# Report Designer

The screenshot displays the Eclipse IDE's Report Designer window. The main workspace shows a report design for 'custbal.rptdesign'. The report includes a red '2K SPORTS' logo, a header section with '<H1> Customer Ba...' and a '[Date]' field, and a table with columns: Sales Rep, Customer Name, CreditLimit, and Balance. The table contains data rows with placeholders like [SalesRep], [SalesRepName], [CustName], [CreditLimit], and [Balance], followed by a 'Sub Total' row and a 'Grand Total' row. The interface also features a left-hand 'Report Items' palette with options like Label, Text, Data, Image, Grid, List, Table, Chart, and Cross Tab. Below the workspace is a 'Property Editor' for the report, showing fields for Author, Created by, Path, Title, Themes, Report Orientation, Display Name, and Thumbnail.



# BIRT Report Designer

- Templates provide a quick start to report generation
- Data Sources
  - Direct DB Connection via JDBC/SQL
  - XML as a Data Source
  - Combination of XML and Direct DB Connection
  - Support Calculated Columns
  - Filter
  - Joined

# BIRT Report Designer

- Data Set
  - Derived from your DataSource
  - Typically Identifies a table from your DataSource
  - DataSet columns are placed onto a Report Canvas
    - Report Object on the canvas are automatically bound to a DataSet Column.

# BIRT Report Designer

- Report Components
  - Data bound Columns
  - Tables
  - Grids
  - Images
  - Crosstab
  - Calculated Fields
  - Labels



# BIRT Report Designer

- Supports
  - Filtering
  - Sorting
  - Aggregation
  - Calculated Columns

# Demo | Report Designer



# OpenEdge Integration

- ABL Provides:
  - DB Query
  - Business Logic
  - Data Transformation
  - Generate XML Datasource
    - DataSet
    - TempTable

## BIRT

- Renders the Report UI



# OpenEdge Integration (Option 1)

- Report Engine Command Line
  - Renders the Report as PDF or HTML output file

# OpenEdge Integration (Option 2)

- Viewer via a URL
  - URL References the Report and DataSource as parameters
  - BIRT Report Viewer
    - Executes Report
    - Renders Report
  - Requires Tomcat

# Command Line

```
"C:\Program Files\birt-runtime-2_6_2\ReportEngine\genReport"  
-f PDF  
-p "DataFileLocation=C:\Data\Customer.xml"  
-o "C:\Data\Customer.pdf"  
"C:\Reports\customer.rptdesign"
```



# Command Line

- Command Line Options
  - -f Format (HTML or PDF)
  - -o Target File
  - -p Parameter
  - -t HTML Type
  - -F Parameter File
  - -e Encoding

# OpenEdge Integration

- DataSet Passed as a Report Parameter

The screenshot displays the Eclipse Report Design IDE interface. The main window shows a script editor for a data source named 'dsCustomer'. The script contains the following code:

```
this.setExtensionProperty("FILELIST", params["DataFileLocation"].value);
```

The left sidebar shows a project tree with the following structure:

- OESports2K
  - Data
    - .project
    - custbal.rptdesign
    - OrderInvoice.rptdesign
    - test1.rptdesign
    - test2.rptdesign

The bottom right pane shows the 'Property Editor - Data Source' for 'dsCustomer'. The 'General' tab is active, displaying the following properties:

General	
Name:	dsCustomer
Element ID:	43





# BIRT Viewer

- The BIRT Viewer Servlet handles three mappings:
  - The **/frameset** mapping renders the report in the full AJAX viewer complete with toolbar, navigation bar and table of contents features.
  - The **/run** mapping runs and renders the report but does not support AJAX Features.
  - The **/preview** mapping runs and renders the report but does not support AJAX feature. The output from the run and render operation is sent directly to the browser.

# Servlet URL

```
http://localhost:8080/birt/run__report=burt\packslip1.rptdesign
&DataFileLocation=C:\PrecisionStrip\ZombieLab1\Reports\Data\12624
56.xml&__parameterpage=false
```

**BIRT Report Viewer - Mozilla Firefox**

File Edit View History Bookmarks Tools Help

http://localhost:8080/birt/run?\_\_report=burt\packslip1.rptdesign&DataFileLocation=C:\PrecisionStrip\ZombieLab1\Reports\Data\1262456.xml&\_\_parameterpage=false

Most Visited Getting Started Latest Headlines Home Page

**BIRT Report Viewer**

---

**Precision Strip, Inc** **PACKING SLIP**  
min2:Genesis Minster, OH May 4, 2011  
As Agent For Owner

**Load Number:** 12624561 **Freight Terms:**  
**Name of Carrier:** Great American Lines **Delivery Instr:**  
**B/L Number:** 126245601  
**Delivery Date:** 2010-07-23  
**Vehicle ID:** tggf67

---

**Supplier:** Quad Center **ShipTo:** AK Steel - Butler OP. **For Account Of:**  
Pittsburgh Logistics Specialty FLAT-ROLL Prod.  
Rochester, PA 15074 Post Office Box 1609  
Butler, PA 16003-1609

---

Type Stainless 409 HP 10  
Size  
Part 456073  
MSA

PSI ID	Supplier Coil ID	Release No	Pieces	Length (FT/MM)	Net (LB/KG)	Gross (LB/KG)
Work Order 125887900	Heat Lot E51587AB	Create Date 2010-07-23	1	7544	16120	16120

0  
May 4, 2011 10:18 AM

Done

# Servlet URL

```
http://localhost:8080/birt/frameset__report=burt  
\packslip1.rptdesign  
&DataFileLocation=C:\PrecisionStrip\ZombieLab1\Reports\Data\12  
62456.xml&__parameterpage=false
```

BIRT Report Viewer - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://localhost:8080/birt/frameset?\_\_report=burt\packslip1.rptdesign&DataFileLocation=C:\PrecisionStrip\ZombieLab1\Reports\Data\1262456.xml&\_\_parameterpage=false

Most Visited Getting Started Latest Headlines Home Page

BIRT Report Viewer

BIRT Report Viewer

Showing page 1 of 2 Go to page:

**Precision Strip, Inc**  
min2:Genesis Minster, OH  
As Agent For Owner

**PACKING SLIP**  
May 4, 2011

**Load Number:** 12624561  
**Name of Carrier:** Great American Lines  
**B/L Number:** 126245601  
**Delivery Date:** 2010-07-23  
**Vehicle ID:** tggf67

**Freight Terms:**  
**Delivery Instr:**

**Supplier:** Quad Center  
Pittsburgh Logistics  
Rochester, PA 15074

**ShipTo:** AK Steel - Butler OP.  
Specialty FLAT-ROLL Prod.  
Post Office Box 1609  
Butler, PA 16003-1609

**For Account Of:**

Type: Stainless 409 HP 10  
Size:  
Part: 456073  
MSA:

PSI ID	Supplier Coil ID	Release No	Pieces	Length (FT/MM)	Net (LB/KG)	Gross (LB/KG)
Work Order	Heat Lot	Create Date				
125887900	E51587AB	2010-07-23	1	7544	16120	16120
0	900615					

May 4, 2011 10:19 AM

Done C:\Program Files\birt-runtime-2\_6\_2

# Servlet Parameters

- \_\_format PDF,HTML,DOC,PPT,XLS
- \_\_title Report
- \_\_parameterpage
- \_\_page
- \_\_pagerange

# Servlet Parameters

```
http://localhost:8080/birt/frameset?
__report=burt\packslip1.rptdesign&DataFileLocation=C:\Precision
Strip\ZombieLab1\Reports\Data\1262456.xml&__parameterpage=false
&__format=PDF
```

The screenshot shows a Mozilla Firefox browser window displaying a BIRT report. The browser's address bar shows the URL: `http://localhost:8080/birt/frameset?__report=burt\packslip1.rptdesign&DataFileLocation=C:\PrecisionStrip\ZombieLab1\Reports\Data\1262456.xml&__parameterpage=false&__format=PDF`. The report content is as follows:

**Precision Strip, Inc**  
min2:Genesis Minster, OH  
As Agent For Owner

**PACKING SLIP**  
May 4, 2011

**Load Number:** 12624561  
**Name of Carrier:** Great American  
**B/L Number:** Lines  
**Delivery Date:** 126245601  
**Vehicle ID:** 2010-07-23  
tggf67

**Freight Terms:**  
**Delivery Instr:**

---

**Supplier:** Quad Center  
Pittsburgh Logistics  
Rochester, PA 15074

**ShipTo:** AK Steel -  
Butler OP.  
Specialty  
FLAT-ROLL  
Prod.  
Post Office  
Box 1609  
Butler, PA  
16003-1609

**For Account Of:**

---

Type: Stainless 409 HP 10  
Size:  
Part: 456073  
MSA:

PSI ID	Supplier Coil ID	Release No	Pieces	Length	Net	Gross
Work Order	Heat Lot	Create Date		(FT/MM)	(LB/KG)	(LB/KG)
125887900	E51587AB	2010-07-23	1	7544	16120	16120
0	900615					

# Demo II Integration



# Questions

