Eclipse BIRT: Introduction to BIRT 2.2

Paul Clenahan
Eclipse BIRT Project Management Committee
VP Product Management, Actuate Corporation
Agenda

BIRT Project = Business Intelligence and Report Tools Project

- Introduction
- Components and High Level Architecture
- Release 2.2 Themes
- Release 2.2 Feature Review
- A Look at the Project Roadmap – What's Next?
Open Source Reporting: Eclipse BIRT

- Open source initiative as part of the Eclipse Foundation
- Founded, organized and led by Actuate
- Project launched in October, 2004

Over 2 Million Downloads as of Dec, 2007

Project Goals

- Next generation reporting technology
- Eclipse-based Report Designer
- Web-centric design metaphor
- Open Source with rapid adoption
- Standards based & highly extensible
- Open XML design format
- Build community and ecosystem
# BIRT Project Users

<table>
<thead>
<tr>
<th>Audience</th>
<th>Features</th>
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<tbody>
<tr>
<td>Report Developers</td>
<td>Drag &amp; Drop authoring, charting</td>
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<tr>
<td>Advanced Report Developers</td>
<td>Scripting, Script API</td>
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<td>Runtime Integration Developers</td>
<td>BIRT Viewer and Engine APIs</td>
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<td>Report Design Integration</td>
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<td>Extension Developers</td>
<td>BIRT Extension Points</td>
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<td>Core Development</td>
<td>Eclipse Development, Open Source</td>
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Easy

Complex
High Level BIRT Architecture
## Project Timeline Leading Up to BIRT 2.2

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Sep, 2004</td>
<td>BIRT Project proposal accepted, and project launched</td>
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<tr>
<td>Dec, 2005</td>
<td>2.0 Release: Support for a wide variety of common report types</td>
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<td>Jun, 2006</td>
<td>2.1 Release: Advanced parameters, ability to join data sets, …</td>
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<tr>
<td>Jun, 2007</td>
<td>2.2 Release: Crosstabs, …</td>
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</table>
Eclipse BIRT 2.2

Part of Eclipse “Europa” simultaneous release
Released on June 27, 2007, simultaneously with 20 other Eclipse projects

BIRT 2.2 Themes

• Support for a wider range of report types and easier report development
• New chart types and more control over charts
• New output formats to common office tools
• New data sources and improved data access
• Easier application integration and extension development
New Report Types & Easier Report Development

- Dynamic Crosstab Support
- New Aggregation Builder
- Layout Preference
- Link to External CSS files
- Ability to use Styles in highlight rules
- Style support for Table of Contents
- Report Parameter Changes
- Property Editor Enhancements
- New Advanced Properties
- XML Source Editor Enhancements
# Crosstab Reports

## Classic Models, Inc.

701 Gateway Boulevard  
San Francisco, CA 94107

### Revenue Analysis

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Crosstab Report Item

Dynamic Crosstab Support

- New Report Item on palette
- Drag and drop creation
- Multiple level support
- Built on cube engine
- …powerful aggregation, levels, …

Quickly and Easily Incorporate Crosstabs in BIRT Reports
Demo BIRT Cross Tab Report
Aggregation Builder

- Easy creation of aggregates in a report
Layout Preference: Fixed Layout

- Report formatting follows sizes for each control regardless of display window size
- Good for reports where a more precise layout is required
- Default is “Auto Layout” (same behavior as BIRT 2.1)
Link To External Cascading Style Sheets

External Style Sheet Support
- Easily reference existing Style Sheets
- Automatically reflects latest style
Conditional Highlight Rules Support Styles

Highlight Rules Now Support Styles
- No need to set specific fonts, etc.
- Leverage Style Sheet support
Style Support for Table of Contents

- Set Styles for each level of TOC
- Leverage Style Sheet support
Parameter Values support Expressions

- Use Expressions in Parameter Display Text
- Allows use of user friendly prompts
Property Editor Improvements

Latest Eclipse Properties Style

New Advanced Properties
XML Report Design Source Editor

- Leverages WTP Editor
New Chart Types and More Chart Control

- New Chart Types
- Improvements to Existing Charts
- New simple chart API
New Chart Types

- Bubble Chart
- Difference Chart
- Gantt Chart
- Cone Riser Chart
- Tube Riser Chart

- Plus...better error support; improved label control, linear time scales for bar and line series, ...
Simple Chart API

- Easy programmatic control of chart elements from within the report design.
New Output Formats

- XLS Emitter
- Word Emitter
- PPT Emitter
- Postscript Emitter
New Output Formats for Office Applications

New Output Formats

- Microsoft Excel
- Microsoft Word
- Microsoft PowerPoint
- PostScript
Export Report from Viewer
Example: Output to PowerPoint

- Native PowerPoint
- Editable
New Data Sources and Improved Data Access

- Web Service ODA
- Flat File Data Source Updates
- Joint Data Set Improvement
- Dynamic Connection Profiles
New Web Service Data Source
Flat File Improvements

New File Formats Supported
- Semi-colon Separated Values (SSV)
- Tab Separated Values (TSV)
- Pipe (|) Separated Values (PSV)
Full Outer Join in Joint Data Set

Select a data set and a column from each side to define a join.

Define Joint Data Set:

- XML Data Set: Customers
  - custID
  - customName
  - creditRank

- XML Data Set: Orders
  - orderID
  - forecastOrderDate
  - forecastShipDate
  - status
  - custID

Join Types:
- Inner Join
- Left Outer Join
- Right Outer Join
- Full Outer Join
Connection Profile Linking
Easier Application Integration & Extension Development

- BIRT Web Project Wizard
- BIRT Tag Library
- BIRT Chart Deployment
- Open Data Access (ODA) Project Wizards
- Application Context access from Web Viewer
BIRT Web Project Wizard

Easy Deployment of BIRT Applications

- Automated publishing to application servers
- Leverage J2EE perspective for debugging etc.
BIRT Tag Libraries
Web Viewer Tag Libraries

- **Birt.tld**
  - viewer
    - Used to display the complete Viewer inside an IFRAME. This tag allows you to use /frameset and /run mappings.
  - report
    - Used to display the report inside an IFRAME or DIV tag. This tag allows you to use /preview mapping and does not create a rptdocument. The AJAX Framework is not used.
  - param
    - Used to set parameter values when using the viewer or report tags. This tag must be nested within the viewer or report tag.
  - parameterPage
    - Used to launch BIRT Parameter dialog or to create a customized parameter entry page. Can be used with the /frameset, /run, or /preview mappings to launch viewer after parameters are entered.
  - paramDef
    - Used within a parameterPage tag to retrieve pre-generated HTML for specific parameter control types such as radio, checkbox, dynamic or cascaded parameters.
Chart JSP Tag Library and Servlet

Bar chart (PDF):
<pre>&lt;c:renderChart width="400" height="300" output="pdf"
    model="&lt;%=SampleHelper.createSampleChart() %&gt;"&gt;
&lt;/c:renderChart&gt;</pre>

Pie chart (SVG):
<pre>&lt;c:renderChart width="400" height="300" output="svg"
    model="&lt;%=session.servletContext.servletPath("SamplePie.chart") %&gt;"
/&gt;
&lt;/c:renderChart&gt;</pre>

Bar chart with tooltips, data evaluator, style processor and runtime context (PNG):
<pre>&lt;c:renderChart width="400" height="300"
    model="&lt;%=session.servletContext.servletPath("SampleBar.chart") %&gt;"
    data="&lt;%=SampleHelper.createSampleEvaluator() %&gt;"
    styleProcessor="&lt;%=SampleHelper.createSampleStyleProcessor() %&gt;"
    runtimeContext="&lt;%=SampleHelper.createSampleRuntimeContext(ULocale.EN) %&gt;"
/&gt;
&lt;/c:renderChart&gt;</pre>
ODA Project Wizard

**New Plug-in Project**

**Plug-in Content**

- Project name contain characters which are not legal for the id, they have been converted to underscores.

**Plug-in Properties**

- **Plug-in ID:** My_Custom_ODA
- **Plug-in Version:** 1.0.0
- **Plug-in Name:** My_Custom_ODA Plug-in
- **Plug-in Provider:**
- **Classpath:**

**Plug-in Options**

- **Generate an activator, a Java class that controls the plug-in’s life cycle:**
  - Activator: my_custom_oda.Activator
- **This plug-in will make contributions to the UI**

**Rich Client Application**

- Would you like to create a rich client application?

**Code Example**

```java
package my_oda_project;

public class Activator extends AbstractUIPlugin {

  // The plug-in ID
  public static final String PLUGIN_ID = "my_oda_project";

  // The shared instance
  private static Activator plugin;

  // The constructor
  public Activator() {
  }

  // (non-Javadoc)
```
BIRT 2.2: Learning More

- Report Examples View
- New Chart Examples View
- BIRT Exchange
Report Examples View
Chart Examples View

3D Bar Chart

Item 1: 5
Item 2: 10
Item 3: 25
Item 4: 25
Item 5: 20

Description:
3 Dimension Side-by-side Bar Chart.
package org.eclipse.birt.chart.examples.view.models;

import org.eclipse.birt.chart.model.Chart;

public class MarkerRange {

    public static final Chart createMarkerRange() {
        ChartWithAxes cwaBar = ChartWithAxesImpl.create();
        // Plot
        cwaBar.getPlot().setBackgroundColor(ColorDefinitionImpl.WHITE);
        cwaBar.getPlot().setOutline().setVisible(true);
        Plot p = cwaBar.getPlot();
        p.getClientArea().setBackgroundColor(ColorDefinitionImpl.create(255, 225, 225));

        // Title
        cwaBar.getTitle().setLabel("Chart Title");

        return cwaBar;
    }
}
BIRT Exchange Community Site

Centralized Knowledge Hub for BIRT Developers

- Access Downloads, Demos, Tutorials, Tips & Techniques, Documentation, ...
- Easy for users to contribute content, share knowledge
- Enables developers to be more productive and build applications faster

www.birt-exchange.com

Find
- Search, Sort
- Rate, Comment

Download
- Documentation
- Software

Share Knowledge
- Reports, Code, Tips
- Forums
Example Content on BIRT Exchange

- Resources for Getting Started

- Resources on BIRT 2.2
Complementary BIRT Products from Actuate

End User Creation
- BusinessReport Studio
  - Power tool for skilled users

End User Modification
- Interactive Viewer
  - Better serve everyday users

Deploy
- iServer Express (Departmental)
- iServer (Enterprise)
  - Scale deployments

Design
- BIRT Open Source Report Designer
  - Create reports easily & flexibly

Technical Support, Training
Eclipse BIRT 2.3

Part of Eclipse “Ganymede” Simultaneous Release Targeted for June 2008

- Planning is in progress as part of Eclipse open source community
  - Draft Development Plan is published at http://www.eclipse.org/birt
  - Bugzilla shows all work scheduled for the BIRT 2.3 release

Candidate projects include:

- **Crosstab / OLAP Enhancements**
  - Cube filtering on measures
  - Computed Column support
  - Scripting

- **Charts**
  - Use of style Themes in charts
  - Improved auto layout of labels

- **SQL Editing**
  - Powerful Visual SQL Editor

- **Formatting**
  - Support additional CSS styles
  - Widow / Orphan support
## Eclipse BIRT 2.2 Summary

- Support for a wider range of report types and easier report development
- New chart types and more control over charts
- New output formats to common office tools
- New data sources and improved data access
- Easier application integration and extension development

### Open Source BIRT Report 2.2 New Features

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