Eclipse BIRT: Getting Up to Speed with BIRT 2.2

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

BIRT Project = Business Intelligence and Report Tools Project

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

BIRT = Business Intelligence and Reporting Technology

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

Over 1 Million Downloads as of June, 2007

- 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
High Level BIRT Architecture

Report Designer
- Eclipse Report Designer
- Eclipse DTP, WTP
- Chart Designer
- Custom Designer

Report Design Engine

XML Report Design

Report Engine
- Data Transform. Services
- Generation Services
- Charting Engine
- Presentation Services

Data

Report Document

HTML PDF Excel Word PowerPoint PostScript …
## Project Timeline Leading Up to BIRT 2.2

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

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

---

Easy Complex
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

## Revenue Analysis

<table>
<thead>
<tr>
<th>CLASSIC MODELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classic Cars, Inc.</td>
</tr>
<tr>
<td>701 Gateway Boulevard, San Francisco, CA 94107</td>
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</table>

### Revenue Analysis

<table>
<thead>
<tr>
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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
- Demographics Trend by City

- 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

Top Selling Products

Classic Models Inc.
701 Gateway Blvd.
South San Francisco, CA 94080

Export Report

Export Format:
- Powerpoint
- Word
- PDF
- Postscript
- XLS

- All pages
- (Enter page range(s), for example: 1,8 or 1,3,6)

- Actual size
- Fit to page width
- Fit to whole page

Total Revenue
- 276,839.98
- 190,755.86
- 190,017.96
- 170,686.00
- 161,531.48
- 152,543.02
- 144,959.91
- 142,530.63
- 140,535.60
- 135,767.03
- 1,706,167.47

Trucks and Buses
- 1998 Chrysler Plymouth Prowler
- 1917 Grand Touring Sedan

Vintage Cars
- 2002 Suzuki XREO
- Top 10 Total
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

Join Types
- Inner Join
- Left Outer Join
- Right Outer Join
- Full Outer Join

OK  Cancel
Connection Profile Linking

Select a Connection Profile

Connection Profile Store: [ ]

- Use externalized properties in Connection Profile Store

[OK] [Cancel]
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):
<br>
<c:renderChart width="400" height="300" output="pdf"
    model="<%=SampleHelper.createSampleChart() %>">
</c:renderChart>
<br>
<br>
Pie chart (SVG):
<br>
<c:renderChart width="400" height="300" output="svg"
    model="<%=session.getServletContext().getRealPath("SamplePie.chart") %>">
</c:renderChart>
<br>
<br>
Bar chart with tooltips, data evaluator, style processor and runtime context (PNG):
<br>
<c:renderChart width="400" height="300"
    model="<%=session.getServletContext().getRealPath("SampleBar.chart") %>
    data="<%=SampleHelper.createSampleEvaluator() %>
    styleProcessor="<%=SampleHelper.getSampleStyleProcessor() %>
    runtimeContext="<%=SampleHelper.createSampleRuntimeContext(ULocales.EN) %>">
</c:renderChart>
</body>
</html>
ODA Project Wizard

New Plug-in Project

Plug-in Content

- Project name contained 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?
BIRT 2.2: Learning More

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

Select Examples
- Primitive Charts
- 3D Charts
- Bar
- Line
- Area
- Combination Charts
- Formatted Charts
- Scripted Charts
- Data Operations

Preview

3D Bar Chart

Description
3 Dimension Side-by-side Bar Chart.
Chart Examples View w/Example Code

```java
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().getOutline(), setVisible(true);
        Plot p = cwaBar.getPlot();
        p getClientArea().setBackgroundColor(ColorDefinitionImpl.create(
          255,
          225 ));

        // Title
        cwaBar.getTitle().setLabel("MarkerRange");
    }
```
BIRT Exchange Community Site

Centralized Knowledge Hub for BIRT Developers
- Access Demos. Tutorials, Tips & Techniques, Documentation, …
- Easy for users to contribute content, share knowledge
- Enables developers to be more productive and build applications faster

Welcome to BIRT Exchange!
Where BIRT know-how is easy to find, easy to share.

www.birt-exchange.com

Share
- Report designs
- Code samples
- Technical tips

Download
- Documentation
- Software

Find
- Search, Sort
- Rate
- Comment
Example Content on BIRT Exchange

- **Resources for Getting Started**

- **Resources on BIRT 2.2**
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](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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<th>Joint Data Set Improvement</th>
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<tr>
<td>Dynamic Connection Profiles</td>
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<tr>
<td>Application Context access</td>
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