

Effective Reporting with IBM Rational ClearQuest Using BIRT

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IBM Rational Software Development Conference 2008

WHERE TEAMS ARE **R-HEROES**



About Me

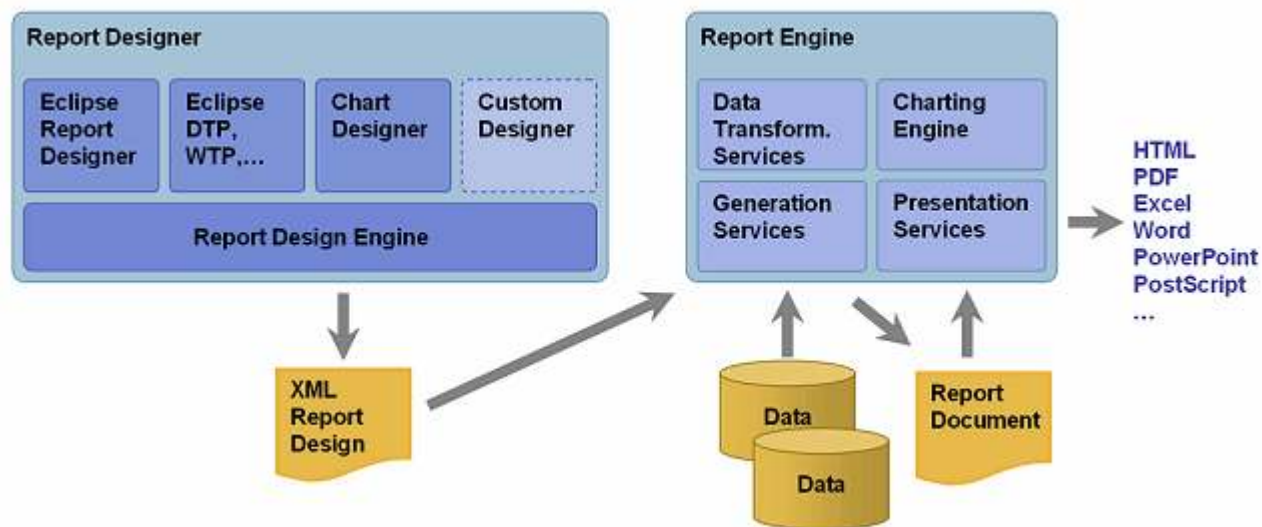
- Rational Support Team in Hursley
- IBM SWG but not part of Rational organisation
- Using ClearQuest and BIRT for ~7 months
- Previously worked in IT support

What is BIRT?

- **Business Intelligence Reporting Tools**

“BIRT is an open source Eclipse-based reporting system that integrates with your Java/J2EE application to produce compelling reports.”

- Enterprise level reporting system based on the Eclipse framework



ClearQuest 7.1 Reporting Model

- Support for different reporting solutions
- BIRT provides OOTB reporting solution
- Change from Push to Pull Data Model
 - What does this mean in practice?
 - How can we take advantage of this?

ClearQuest 7.1 Reporting Model (Pull vs Push)

- Report across multiple record types
- Report across multiple data sources
- Allows for the use of sub-reports

Using BIRT with ClearQuest

- Leverage Eclipse architecture
 - Platform Independent

- Advanced charting capabilities

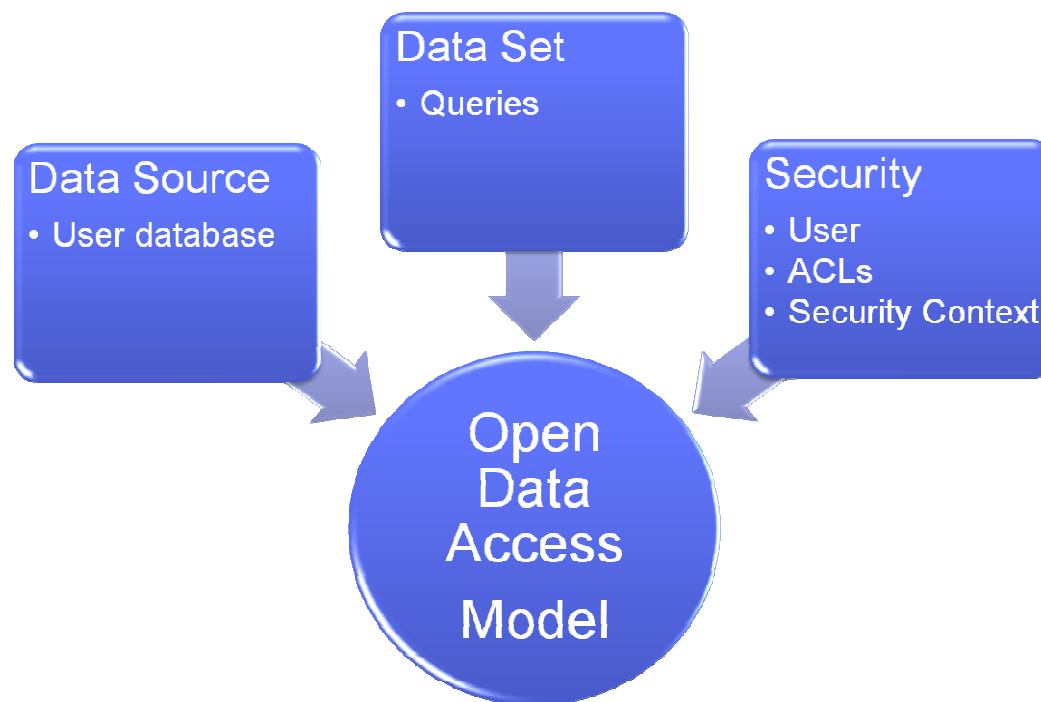
- Support for shared libraries to promote sharing, reuse, and standardisation of report formats

- Deployment and Integration Options
 - Local Reporting
 - Report Server
 - Using the BIRT API



Open Data Access (ODA) framework

- BIRT uses the Open Data Access (ODA) framework
- ODA framework intended to provide abstraction for scalable data retrieval from heterogeneous data sources



BIRT and ClearQuest in Hursley

- Beta Eclipse ClearQuest ODA drivers from RSDC 2007
 - Used the ODA drivers with ClearQuest 7.0.1

- Teams develop their own reports

- Reports can be published to report server
 - Live Reporting
 - Historical Reporting
 - Reports can be viewed without running the ClearQuest Client

Building a Report

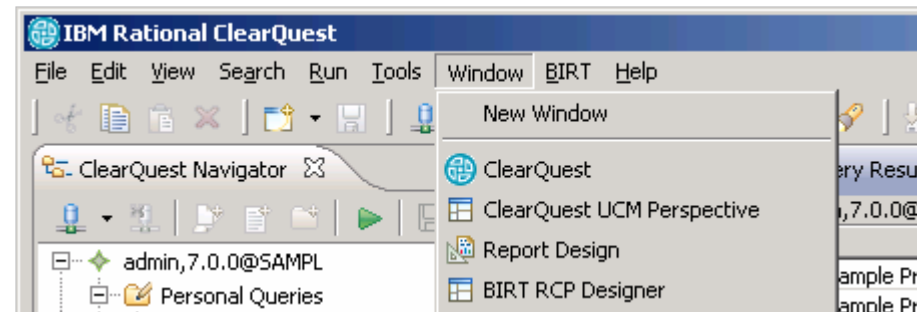
- Planning
 - Document requirements
 - Get approval from target audience
 - Ensures report contains all info and is presented correctly

- Configure Data Sources and Data Sets

- Implement report layout

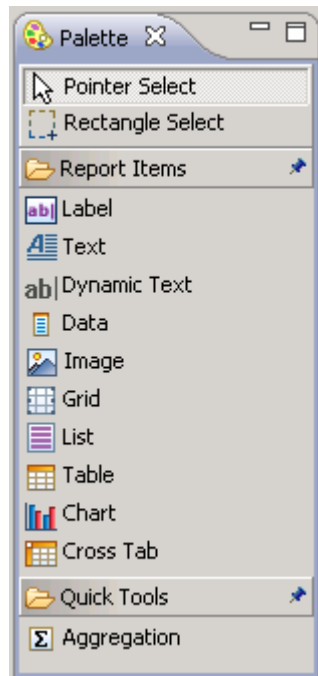
BIRT Report Designer

- Hursley deployed BIRT Report Designer in separate Eclipse environment
- In ClearQuest 7.1 BIRT Report Designer is integrated into the standard Eclipse Rich Client Platform
 - Simplifies Report Design
 - Utilise Eclipse perspectives

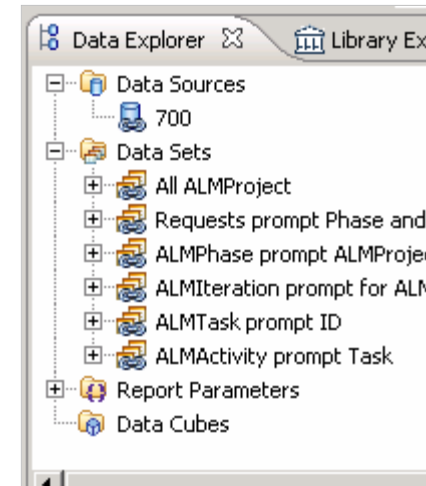


Working with the Report Designer

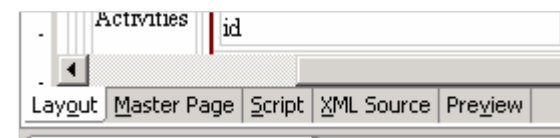
- Configure Report Data Sources



- Choose items to add to report from Palette

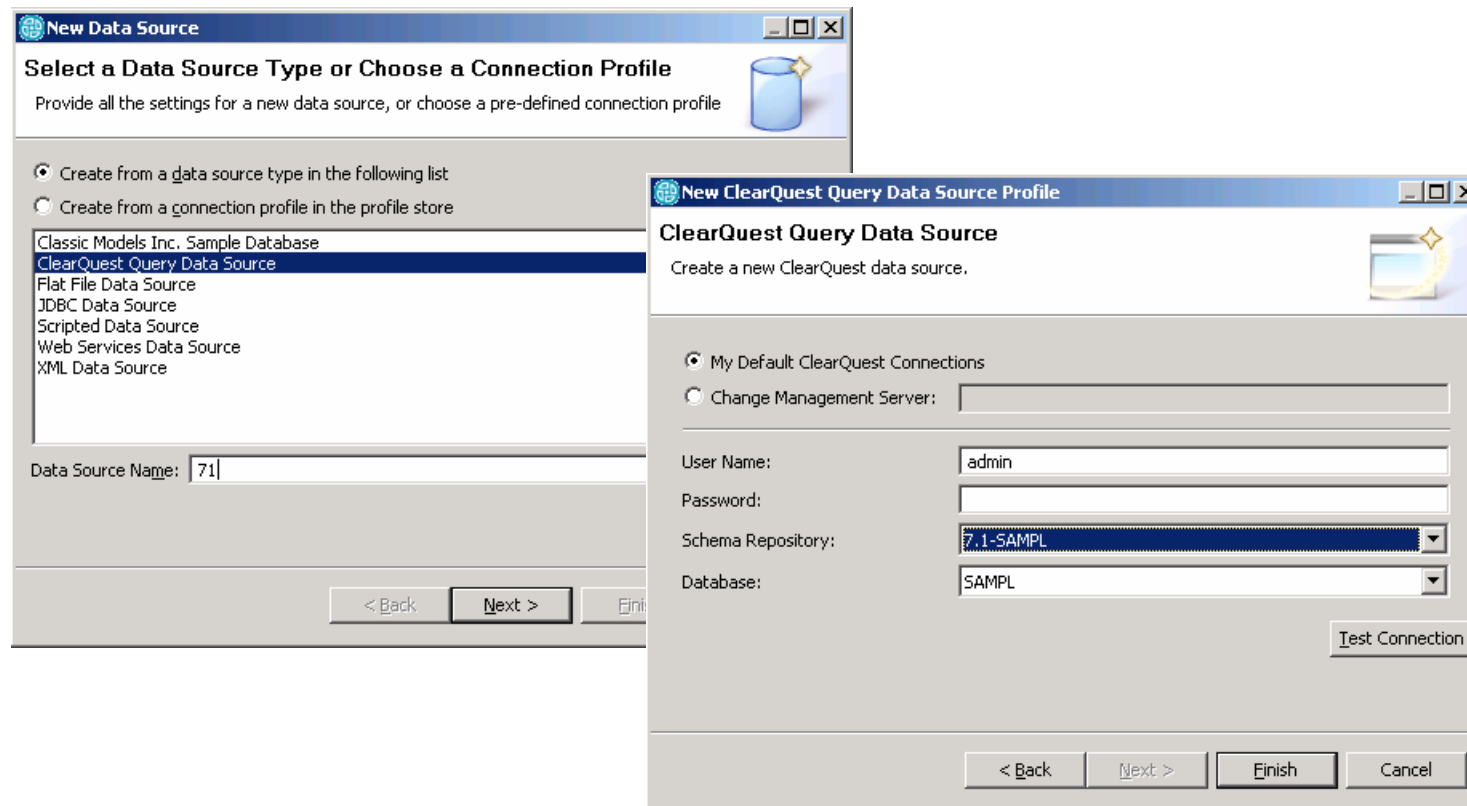


- Edit all aspects of report and preview results using the design tray



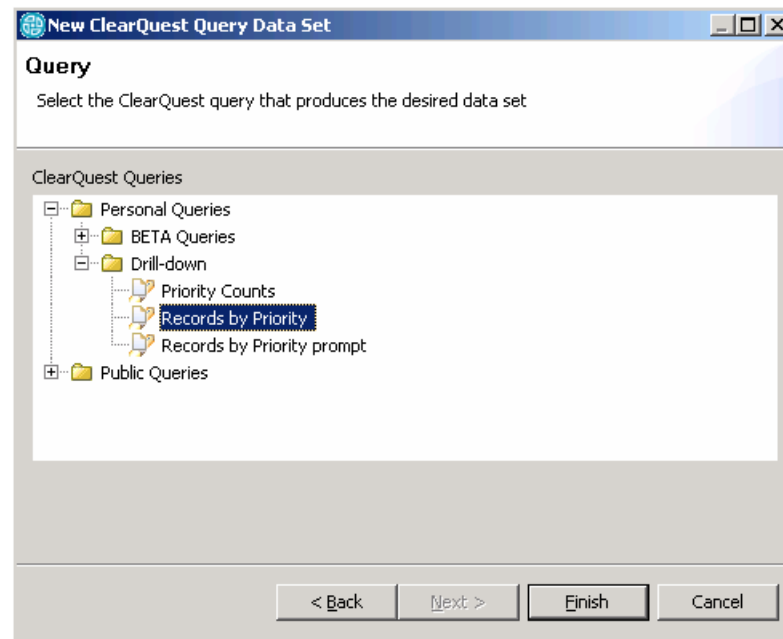
Configuring Data Source

- Select the ClearQuest Data Source and enter the user database details



Adding Data Sets

- Data sets are defined by existing ClearQuest queries



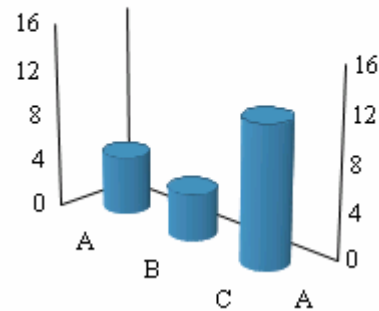
BIRT Features - Charting

- Many charting options and formatting styles

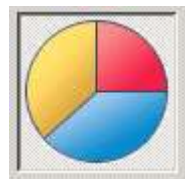
Select Chart Type

- Bar
- Line
- Area
- Pie
- Meter
- Scatter
- Stock
- Bubble
- Difference
- Gantt
- Tube
- Cone
- Pyramid

Tube Chart Title



Select Subtype



Dimension: 2D Output Format: PNG

Multiple Y Axis: Secondary Axis Series Type: Tube Series

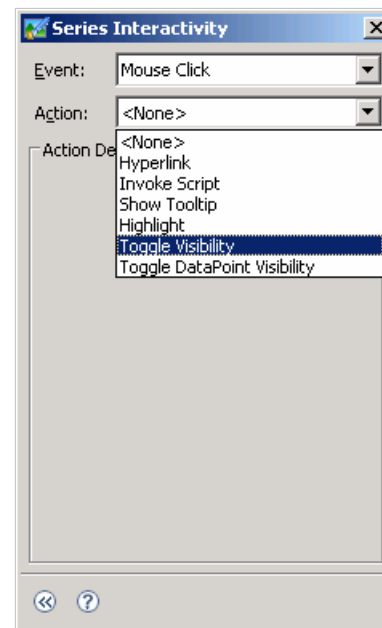
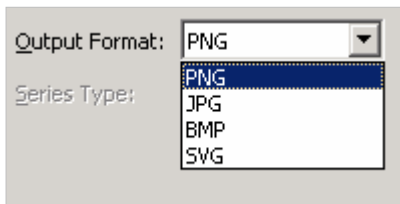
Orientation: Flip Axis

BIRT Features – Charting (cont'd)

- Dynamic Data Markers
 - Populating tables or adding dynamic text

Name	Category	Release
[Name]	[Category]	[Release]
Footer Row		

- Many interactivity options
- Numerous output formats



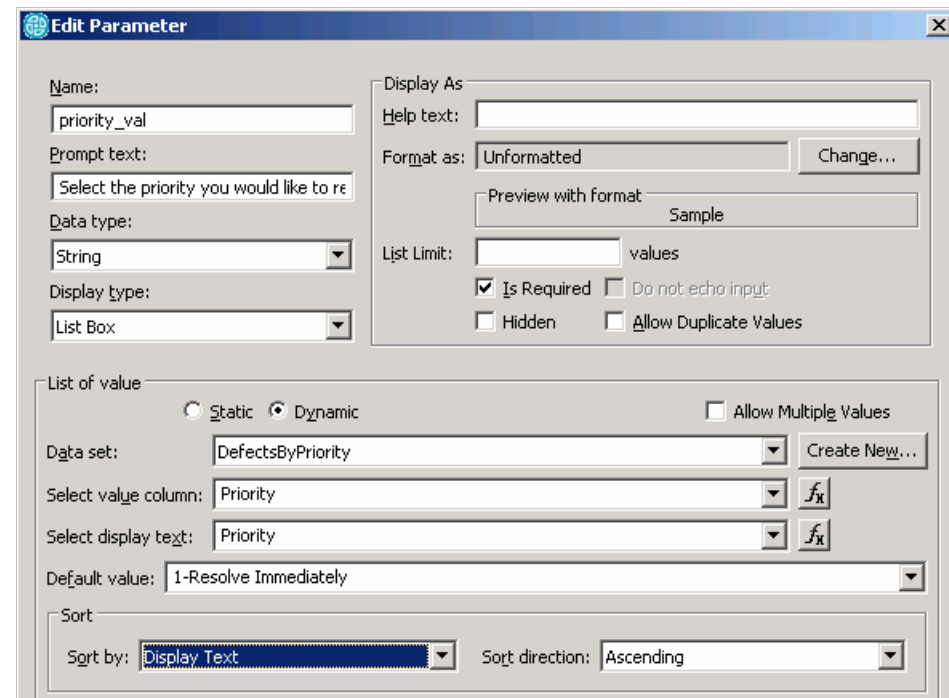
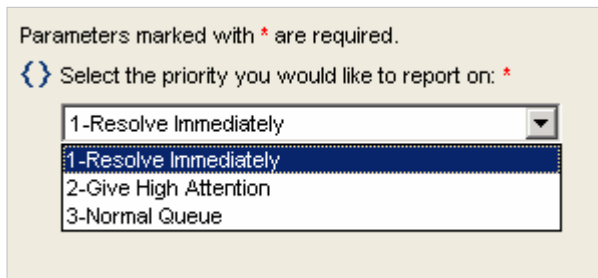
BIRT Features - Parameters

- Facility to pass parameters to report
 - Such as ClearQuest user authentication

The image shows two screenshots related to BIRT report parameters. The top screenshot is a tree view of a report's parameters, showing a 'Report Parameters' folder containing a 'Parameter Group - CQ UserCredentials' with two sub-parameters: 'cqusername' and 'cqpassword'. The bottom screenshot shows a 'Property Binding' dialog box with two input fields: 'User Name:' containing 'params["cqusername"]' and 'Password:' containing a masked password. To the right of this dialog is a runtime dialog box titled 'Parameters marked with * are required.' It contains two prompts: 'Enter your ClearQuest username: *' with a text field containing 'admin', and 'Enter your ClearQuest password:.' with a radio button selected for 'Null Value'.

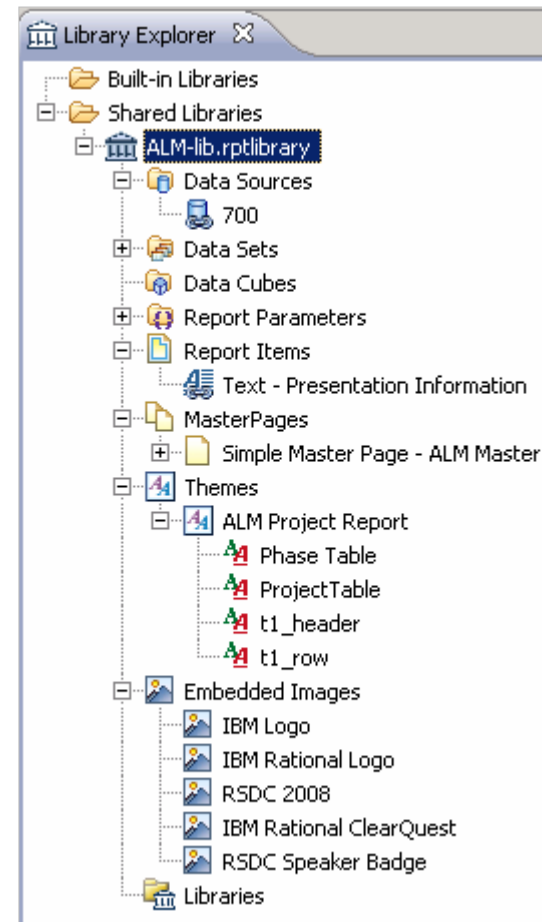
BIRT Features – Parameters (cont'd)

- Use Parameters to filter report results
 - For example using a dynamic choice list



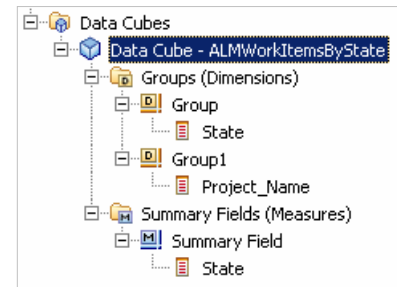
BIRT Features - Libraries

- Centralised high level administration
 - Sharing
 - Reuse
 - Consistency
- Styles
- Logos
- Master Pages
- Data Sources and Data Sets
- Include other libraries



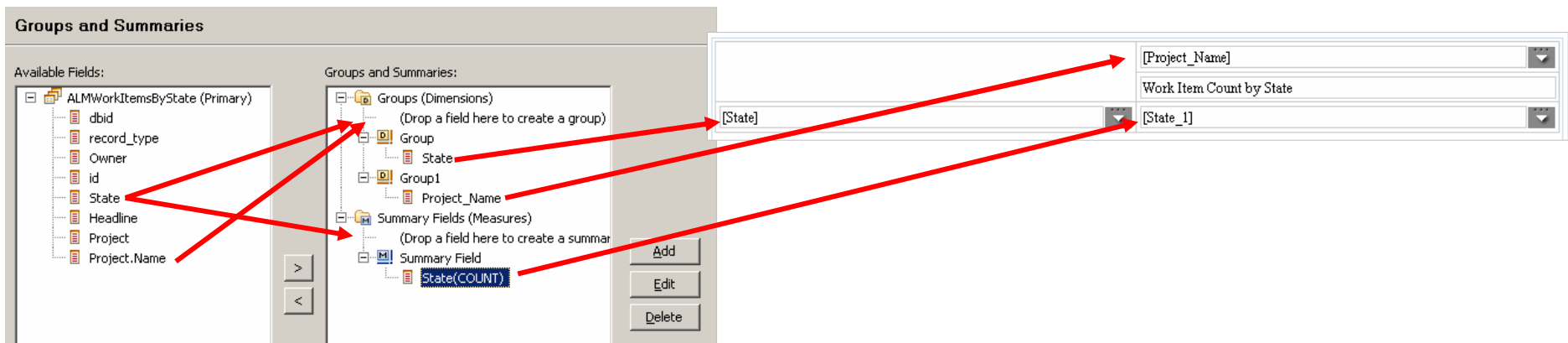
BIRT Features – Cross Tab

- Tricky to understand but worth the effort
- Groups and aggregates data
 - Data Cubes
- Helps minimise query complexity
- Best illustrated using an example



BIRT Features - CrossTab

- Simple Example: Display number of work items by state per ALM project

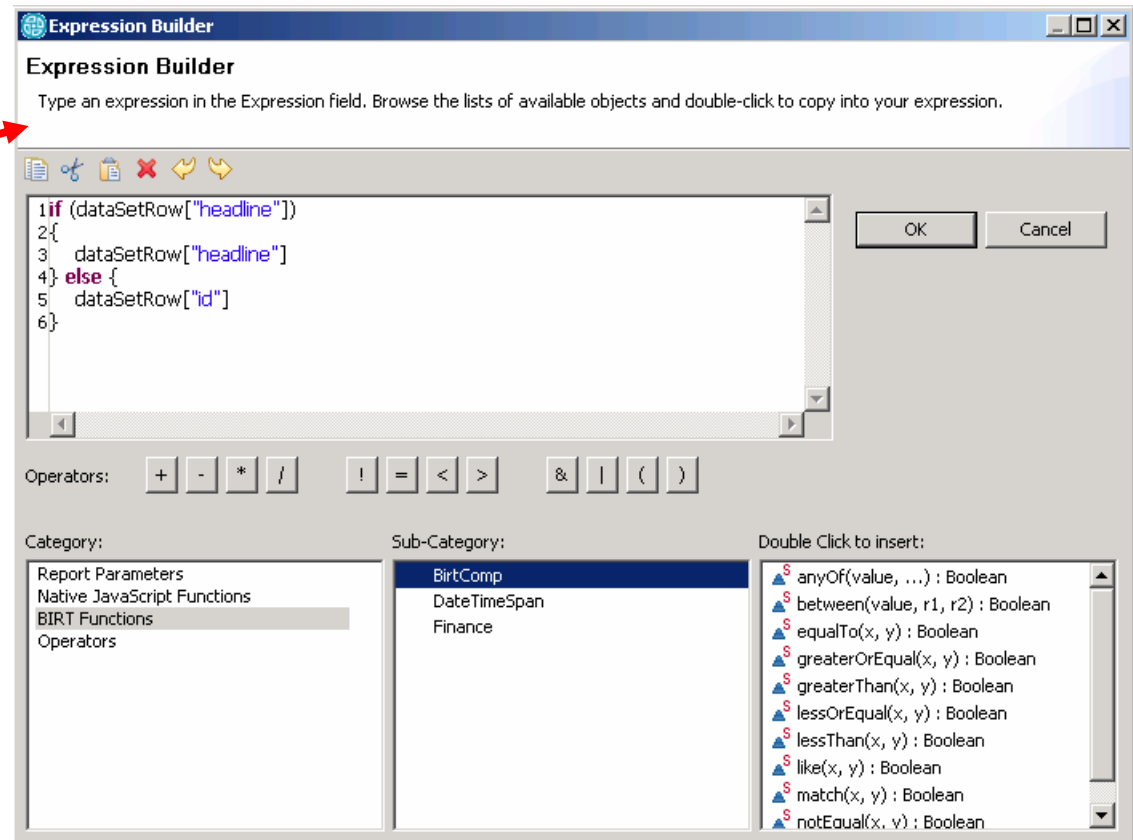


Work Item States by Project

	BIRT Reporting		OpenUP Sample Project	
	Work Item Count by State		Work Item Count by State	
Activated			4	
Completed	1			
Opened	4		1	
Submitted	3		11	

BIRT Features – Expression Builder

- Expressions written in JavaScript
- Manipulate data at runtime



BIRT Features – Sub Reports

- Independent or Linked

- Several sub report formats
 - One after the other
 - Next to one another
 - One report within another

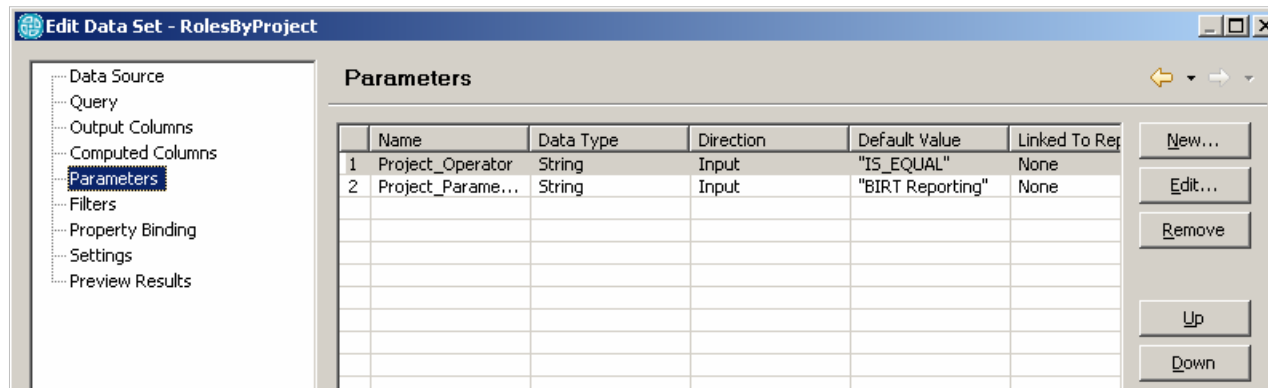
- Useful when trying to reduce the amount of duplicate data from multiple data sources when grouping more than one reference field

BIRT Features – Sub Reports

- Example of a simple linked report

- Design layout in stages

- Use a data set that prompts for at least one parameter and enter default values for the parameter



BIRT Features – Sub Reports

Select data binding:

Data Set: RolesByProject Dataset Parameter Binding...

Report Item:

Data Column Binding:

Name	Data Type	Expression	Aggregate
dbid	Integer	dataSetRow["dbid"]	N/A
Project	String	dataSetRow["Project"]	N/A
RoleLabel	String	dataSetRow["RoleLabel"]	N/A
Members	String	dataSetRow["Members"]	N/A
Project.Name	String	dataSetRow["Project.Nam..."]	N/A
Members.is_active	Integer	dataSetRow["Members.is..."]	N/A

Dataset Parameter binding...

Data Set: RolesByProject

Parameter	Data Type	Value
Project_Operator	String	"IS_EQUAL" (Default Value)
Project_Parameter	String	row["Name"]

Bind the dataset and parameters to the sub report

BIRT Features – Drill-Through

- Create a link from one report to another or link within the same report
- Pass context information via parameters
- Use report interactivity options to define the drill-through transition

BIRT Features – Drill-Through (cont'd)

The screenshot displays the BIRT 'Edit Chart' dialog box, which is used for configuring chart properties. The main window shows a bar chart titled 'Activity Counts by Project' with two bars representing projects 'SAMPL00000001' and 'SAMPL00000009'. The 'Value (Y) Series' section is active, and the 'Interactivity' button is highlighted. A red arrow points from this button to the 'Series Interactivity' dialog box.

The 'Series Interactivity' dialog box is open, showing the following configuration:

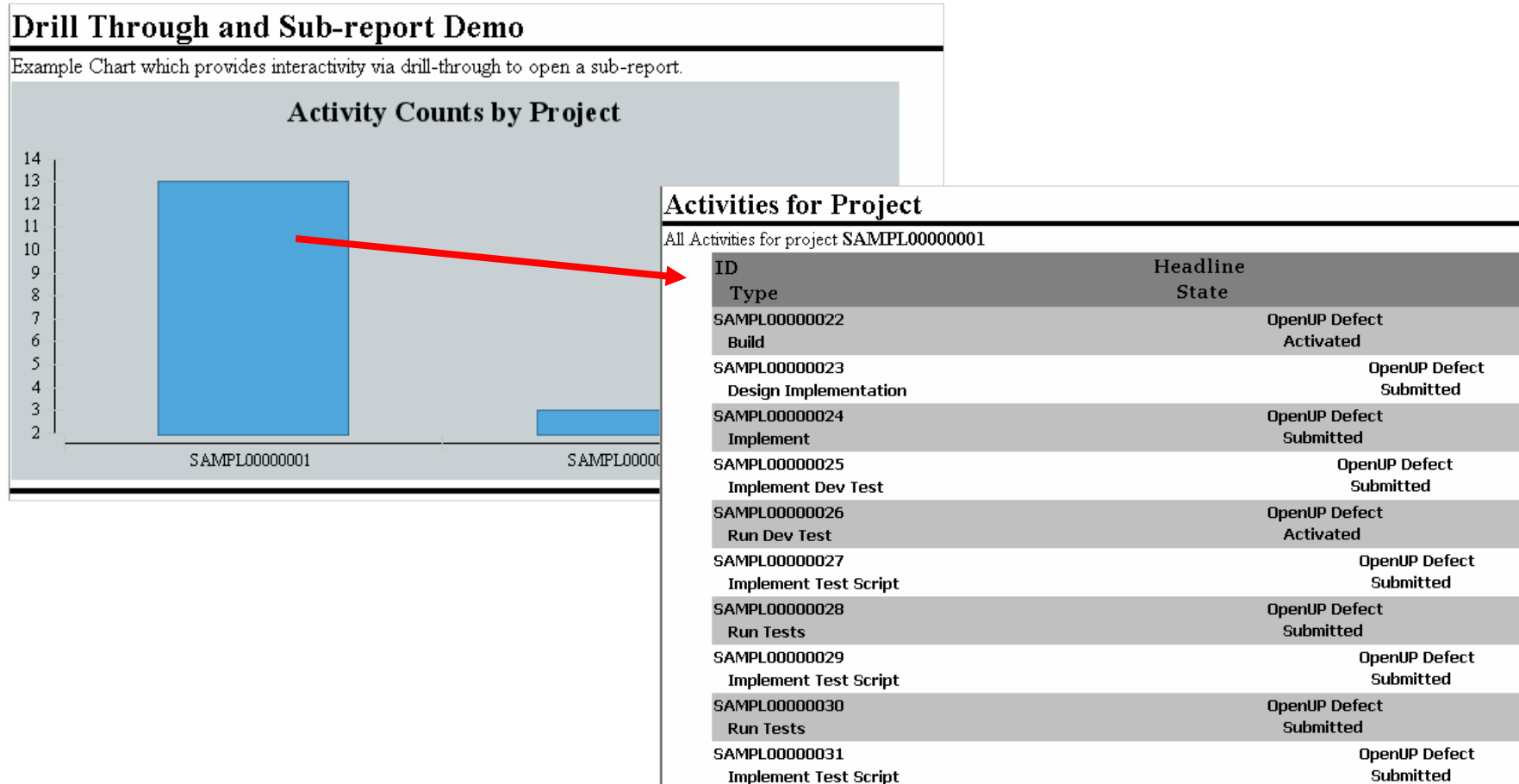
- Event: Mouse Click
- Action: Hyperlink
- Action Details: Base URL: Edit base URL...

A second red arrow points from the 'Hyperlink' action in the Series Interactivity dialog to the 'Hyperlink Options' dialog box. The 'Hyperlink Options' dialog box is open, showing the following configuration:

- Select Hyperlink Type: Drill-through
- Step 1: Select a target report: Report Design: demo-drillthroughtarget.rptdesign
- Report Parameters:

Parameters	required	Values
project	✓	row["Project"]
- Step 2: Select a target anchor: Target Bookmark
- Step 3: Create a link expression that matches the target bookmark: Link Expression: ---
- Step 4: Show target report in: New Window
- Step 5: Select a format for target report: Format the target report in:

BIRT Features – Drill-Through (cont'd)



BIRT Features - Web Viewer

- Birt Web Viewer applet provides tools to manipulate the report
 - Modify parameters on the fly
 - Print


- Web Viewer can be deployed to a J2EE container/server
 - IBM WebSphere
 - Apache Tomcat
 - JBOSS



BIRT Report Server in Hursley

- Simple custom front end
 - Implemented in PHP
 - Provides simple navigation to reports

- Reports initially displayed in HTML via the BIRT web viewer
 - Can be exported from the viewer to other formats
 - PDF
 - XLS
 - CSV
 - PostScript



BIRT Reports Server
Business Intelligence and Reporting Tools

BIRT is an open source Eclipse-based reporting system that integrates with your Java/J2EE application to produce compelling reports. This is the web front-end to an automated BIRT report generating service run by SWG UK IT Department.

For more information contact Stephen Willetts/UK/IBM

Project Directory

[Test](#)
[OOTB Usage Stats](#)

Test :: Summary

Contact: Stephen Willetts/UK/IBM
Repository: <https://www.ibm.com/rational/birt-reports/Test>

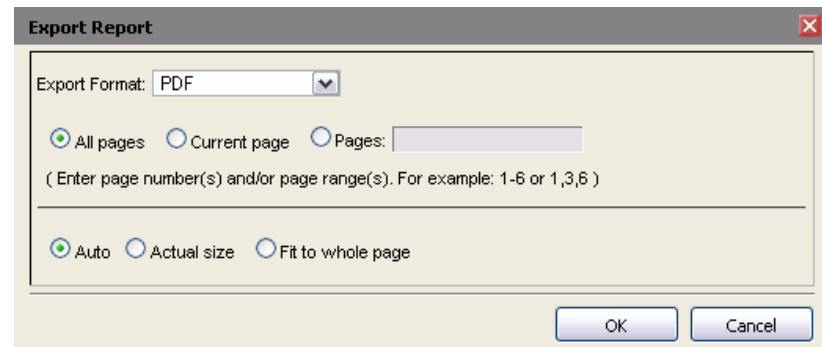
Test :: Scheduled Reports

Example_Project_Defects_by_Severity-filterSeverity_4_Minor 2008-09-16 Show

newReport 2007-11-21 Show

Test :: Live Reports

- [CTC/Verification-with-DrillDown.mxd](#)
- [drilldown-versions/CTC.mxd](#)
- [Example_Project_Defects.mxd](#)
- [Example_Project_Defects_by_Severity.mxd](#)
- [new_report.mxd](#)
- [new_report_1.mxd](#)



Export Report

Export Format: PDF

All pages Current page Pages:

(Enter page number(s) and/or page range(s). For example: 1-6 or 1,3,6)

Auto Actual size Fit to whole page

OK Cancel

BIRT Features – Advanced

- Public Java API
 - Report Engine
 - Chart Engine
 - Design Engine

QUESTIONS

THANK YOU

Learn more at:

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- [IBM Rational Software Delivery Platform](#)
- [Process and portfolio management](#)
- [Change and release management](#)
- [Quality management](#)
- [Architecture management](#)
- [Rational trial downloads](#)
- [Leading Innovation Web site](#)
- [developerWorks Rational](#)
- [IBM Rational TV](#)
- [IBM Rational Business Partners](#)
- [BIRT Web Site](#)

Abstract

Effective Reporting with IBM Rational ClearQuest Using BIRT

With the release of IBM Rational ClearQuest 7.1, the reporting data model has been completely overhauled and now exposes a data pull model. This presents new opportunities in terms of disparate data aggregation, manipulation, and deployment that were very difficult to accomplish before. This presentation covers a few of the high-level tips to make reports do the work and leverage these new features.

Headline

Text goes here