

Getting BIRT-y with JBoss

Virgil Dodson
Evangelist, Actuate/BIRT Exchange

Prakash Aradhya
Sr. Product Manager, Red Hat

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Agenda

- BIRT Project and Designer Overview
- Deploying BIRT Runtime to JBoss App Server
- BIRT/JBoss Tools 3.0 Integration
- Questions

BIRT PROJECT AND DESIGNER OVERVIEW

Business Intelligence and Reporting



Most applications have some type of data visualization need...

And the simple problems are easy, but...

Real-world data visualization is challenging...

Gather the data

Perform calculations, sort, group, aggregate, total...

Present information professionally

...and meeting user demand is crucial to the success of an application

Traditional Approaches to the Problem

Crystal Reports
ReportNet JReports StyleReports



Java JSP JFaces
XSLT XML JavaScript HTML

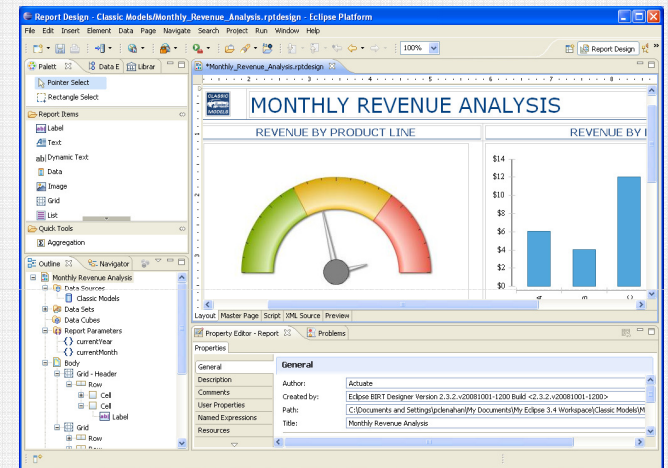
Open Source Creates New Choices

Buy	Closed-Source Commercial Products
Build using Open Source Code	Open-Source-Based Products
Open Source Products	Leverage Open Source in a Custom Solution
Build	Custom-Developed Solution

Business Intelligence and Reporting Tools

A New Generation of Reporting and Data Visualization Technology

- Makes all report development easy
- Modern, web-page design metaphor
- Open and standards-based
- Flexible with rich programmatic control
- Full support for libraries and reuse
- Foundation for a range of solutions



Simplicity
*that makes
simple reports
easy*

BIRT

Power
*to create
very complex
layouts*

BIRT Release History

Six Major Releases since Project Launch

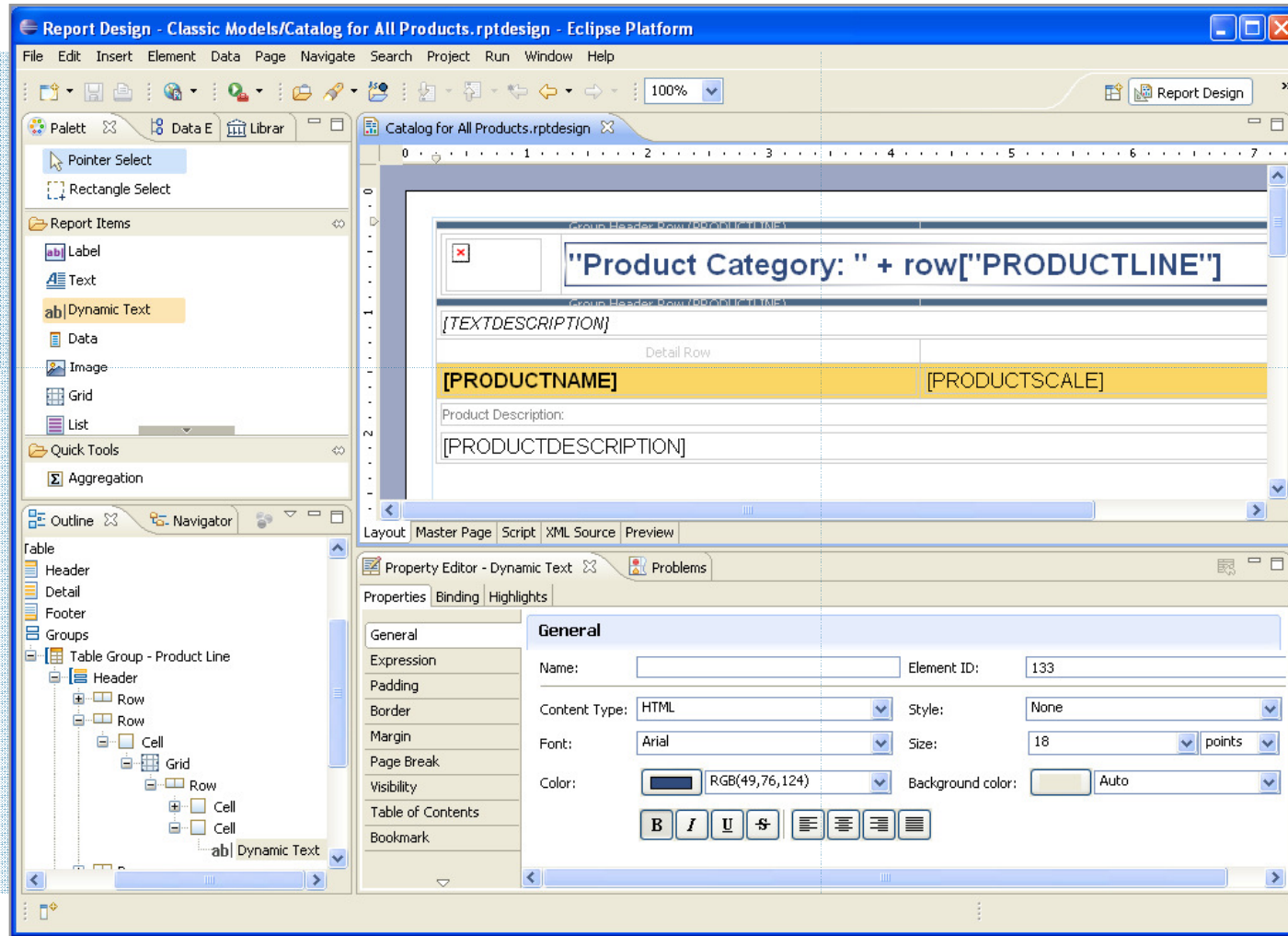
September 2004		BIRT Project proposal accepted, and project launched
June 2005	1.0	Eclipse Report Designer, Report Engine, Chart Engine
December 2005	2.0	Support for a wide variety of common layouts
June 2006	2.1	Advanced parameters, ability to join data sets, ...
June 2007	2.2	Dynamic crosstab support, web services data source, ...
June 2008	2.3	JavaScript Debugger, BiDi Support, Charts in Crosstabs, ...
June 2009	2.5	Page aggregates, Multiple drill-downs in Charts, ...

Ground-up initiative: Innovative approach to layout and design

Enterprise-class, designed to handle real-world problems

Developed in the open with community feedback at all stages

Getting to Know BIRT



BIRT Example Key Capabilities

Very Simple to Very Complex Layouts

- Listings, cross-tab, dashboard, pixel-perfect, charts ...
- Grouping, advanced aggregations, sub-totals, calculations
- Multi-section and sub-reports
- Conditional sections and logic
- Full programmatic control/scripting
- Embedded images...

Comprehensive Data Access

- SQL databases, Web Services, Flat Files, XML, scripted data sources ...
- Multiple data sources in one design...

Output Formats

- HTML, PDF, Excel, Word, PowerPoint...
- Internationalization of labels and text
- Bi-Directional language display

Re-use and Developer Productivity

- Library support for publishing and sharing components
- Leverages common standards (SQL, HTML, JavaScript, Java, XML)
- Cascading Style Sheets
- Built-in debugger...


Interactivity and Linking

- Data driven hyperlinks
- Drill-through charts and graphics...

Multiple Usage and Productivity Aids

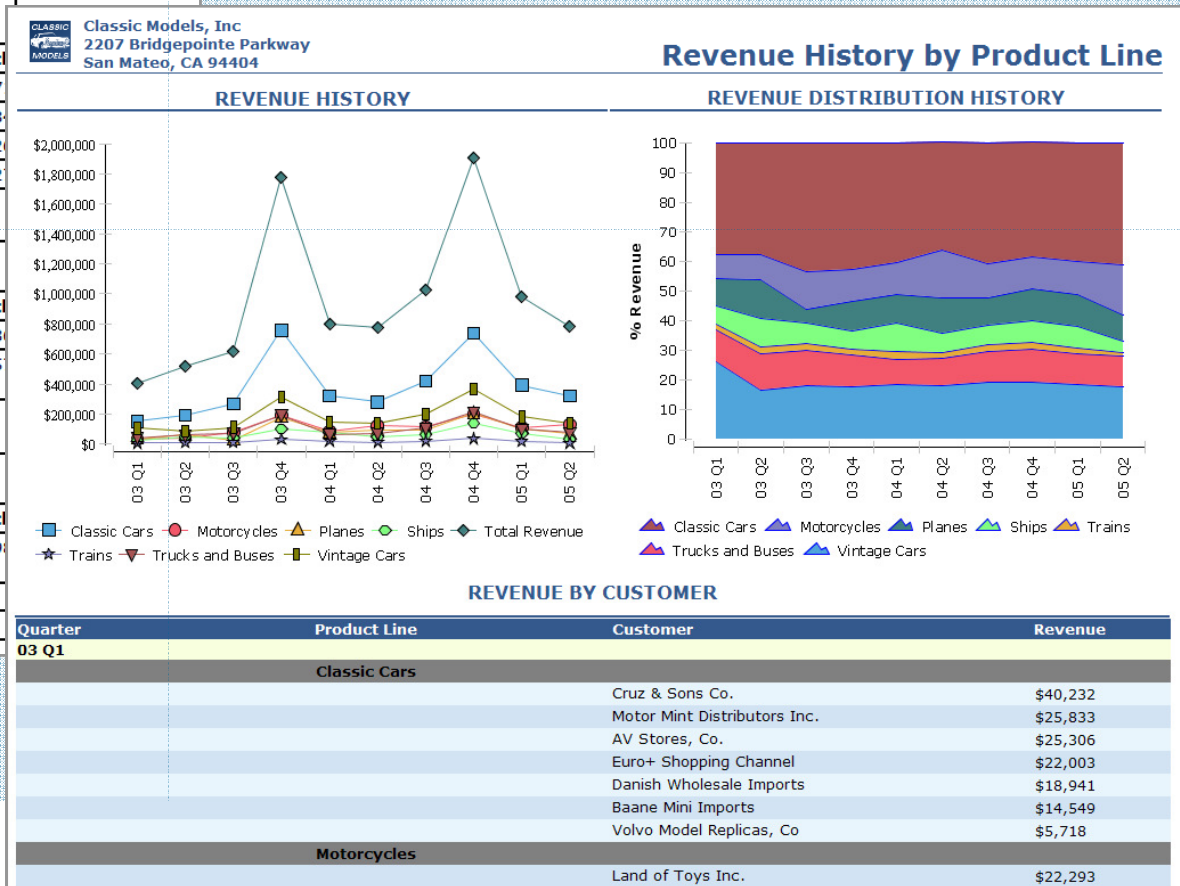
- Graphical layout and design
- Query & metadata editors
- Formatting Builder
- Grouping Builder
- Customizable cheat sheets and templates...

BIRT Design Gallery

 Classic Models, Inc 2207 Bridgepointe Parkway San Mateo, CA 94404				Sales by Customer	
Customer: Atelier graphique - 103		Payment: \$22,314.36			
Order Number:	10123				
Order Date:	May 20, 2003 12:00 AM	Shipped Date:	May 22, 2003 12:00 AM		
Product Code	Product Name	Orders	Price Each		
S18_1589	1965 Aston Martin DB5	26	\$120.7		
S18_2870	1999 Indy 500 Monte Carlo SS	46	\$114.8		
S18_3685	1948 Porsche Type 356 Roadster	34	\$117.2		
S24_1628	1966 Shelby Cobra 427 S/C	50	\$43.2		
<hr/>					
Order Number:	10298				
Order Date:	Sep 27, 2004 12:00 AM	Shipped Date:	Oct 1, 2004 12:00 AM		
Product Code	Product Name	Orders	Price Each		
S10_2016	1996 Moto Guzzi 1100i	39	\$105.8		
S18_2625	1936 Harley Davidson El Knucklehead	32	\$60.5		
<hr/>					
Order Number:	10345				
Order Date:	Nov 25, 2004 12:00 AM	Shipped Date:	Nov 26, 2004 12:00 AM		
Product Code	Product Name	Orders	Price Each		
S24_2022	1938 Cadillac V-16 Presidential Limousine	43	\$38.9		
			Total Price:		

Listing with Groups and Sub-Totals

Charts and Tables



BIRT Design Gallery

CLASSIC MODELS



Classic Models, Inc.

701 Gateway Boulevard
South San Francisco, CA 94080

Annual Sales By Product Lines

Year	Classic Cars	Motorcycles	Planes	Ships	Trains	Trucks & Buses	Vintage Cars	Total
2003								
Q1	\$152,581	\$33,062	\$37,136	\$24,446	\$7,810	\$43,593		
Q2	\$194,291	\$41,629	\$50,387	\$50,171	\$12,144	\$62,804		
Q3	\$243,978	\$79,845	\$45,047	\$24,272	\$7,027	\$73,842		
Q4	\$778,535	\$194,372	\$168,251	\$102,153	\$38,839	\$196,416		
Total	\$1,369,386	\$348,909	\$300,822	\$201,044	\$65,822	\$376,657		
2004								
Q1	\$317,306	\$85,681	\$65,159	\$66,762	\$21,028	\$67,942		
Q2	\$252,165	\$80,101	\$69,780	\$30,719	\$4,862	\$73,696		
Q3	\$419,674	\$127,310	\$105,973	\$66,859	\$21,728	\$106,833		
Q4	\$739,276	\$234,150	\$204,551	\$141,609	\$39,278	\$200,230		
Total	\$1,728,423	\$527,243	\$445,464	\$305,951	\$86,897	\$448,702		
2005								
Q1	\$392,920	\$112,384	\$103,702	\$60,591	\$18,235	\$101,332		
Q2	\$225,273	\$128,874	\$35,870	\$20,812	\$4,076	\$41,874		
Total	\$618,193	\$241,259	\$139,573	\$81,404	\$22,311	\$143,207		
Grand Total	\$3,716,003	\$1,117,412	\$885,859	\$588,400	\$175,030	\$968,566		

Crosstabs



Crosstab and Charts

BIRT Design Gallery

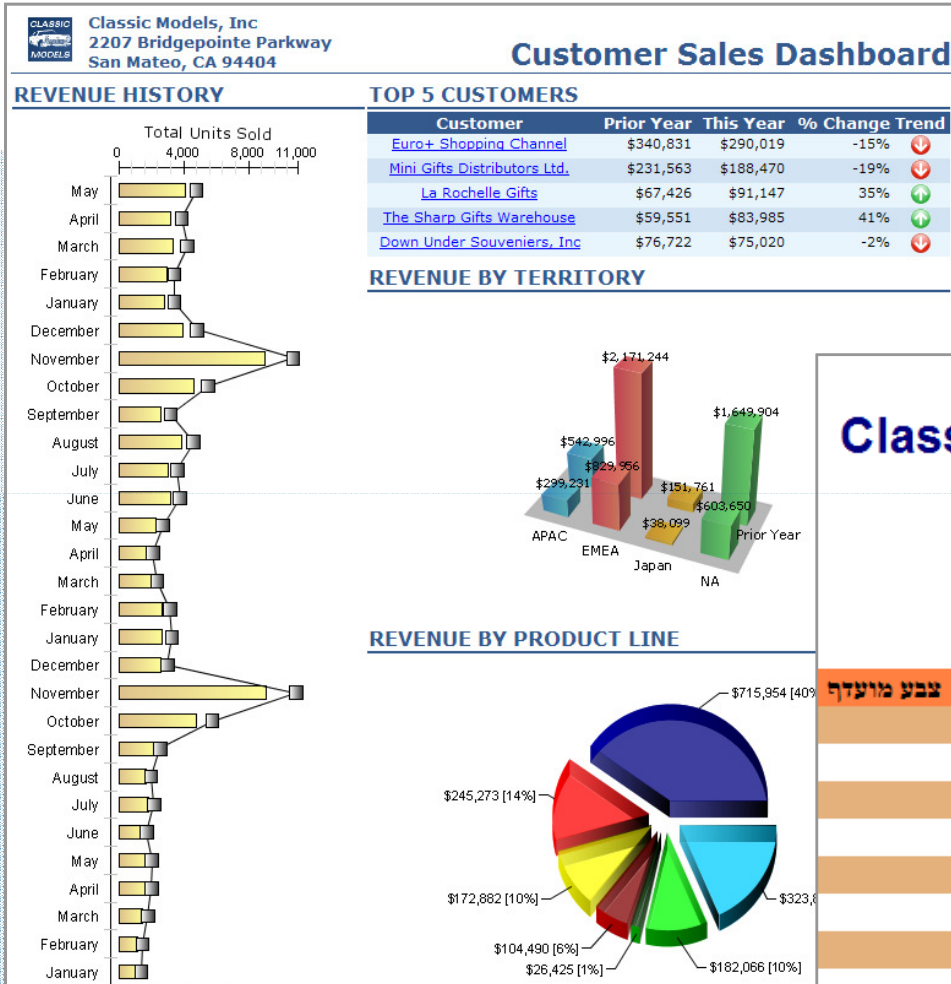
Assignment Manager Monthly Format						
Labor: BARRY						
Month: JANUARY						
Year: 2008						
Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
		1	2	3	4	5
			8:39 AM 1000 Relocate Guard Rails Around Compressor	7:00 AM 1000 Relocate Guard		
6	7	8	9			
13	14	15	16			
20	21	22	23			
27	28	29	30			

Calendar / Schedule

Forms

FORM 4							UNITED STATES SECURITIES AND EXCHANGE COMMISSION	
<input type="checkbox"/> Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instructions 1(b).							Washington, D.C. 20549	
STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP							OMB APPROVAL	
Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940							OMB Number: 3235-0287 Expires: January 31, 2008 Estimated average burden hours per response: 0.5	
(Print or Type Responses)								
1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Date, if (Month/Day/Year)	3. Transaction Code (Instr. 8)	4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	5. Amount of Securities Beneficially Owned Following Reported Transactions (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Beneficial Ownership (Instr. 4)	
1. Name and Address of Reporting Person*		2. Issuer Name and Ticker or Trading Symbol		5. Relationship of Reporting Person(s) to Issuer (Check all applicable)				
Signal Collectibles Ltd.		SL2_4473		<input type="checkbox"/> Director <input type="checkbox"/> 10% Owner <input checked="" type="checkbox"/> Officer (give title below) <input type="checkbox"/> Other (specify below)				
(Last) (First) (Middle)		3. Date of Earliest Transaction (Month/Day/Year)		Shipped				
2793 Furth Circle		10 Feb 2004 00:00						
(Street)		4. If Amendment, Date of Original Filed (Month/Day/Year)		6. Individual or Joint/Group Filing (Check applicable line)				
Brisbane, CA - 94217				<input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person				
(City) (State) (Zip)		Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned						
1. Title of Security (Instr. 3)	2. Transaction Date (Month/Day/Year)	2A. Deemed Date, if (Month/Day/Year)	3. Transaction Code (Instr. 8)	4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)	5. Amount of Securities Beneficially Owned Following Reported Transactions (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Beneficial Ownership (Instr. 4)	
103	19 Oct 2004 00:00	19 Oct 2004 00:00	HQ336336	6066.78	6066.78			
103	5 Jun 2003 00:00	5 Jun 2003 00:00	JM555205	14571.44	14571.44			
103	18 Dec 2004 00:00	18 Dec 2004 00:00	OM314933	1676.14	1676.14			

BIRT Design Gallery



Multi-Language and Bi-Directional

Classic Models, Inc.

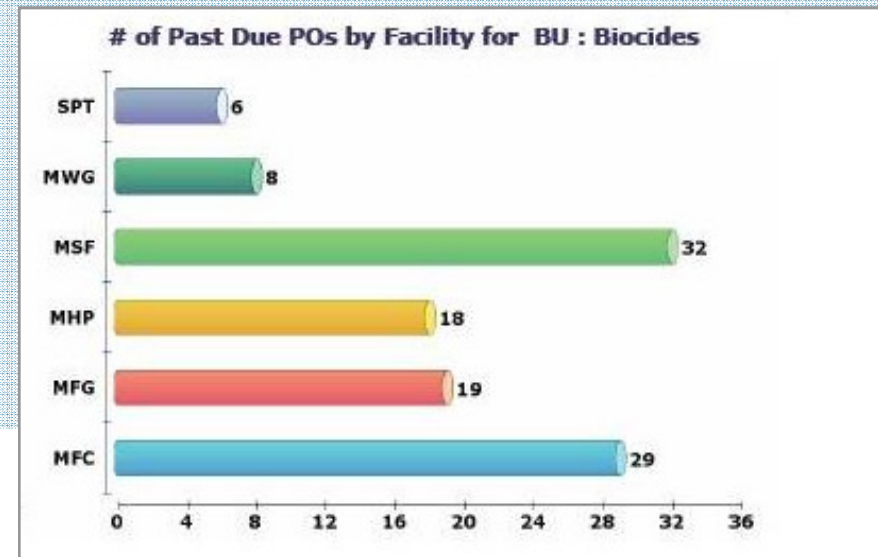
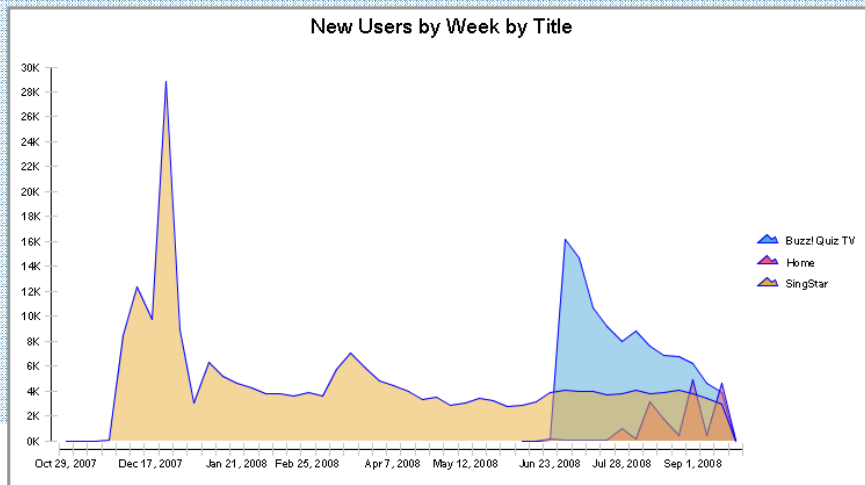
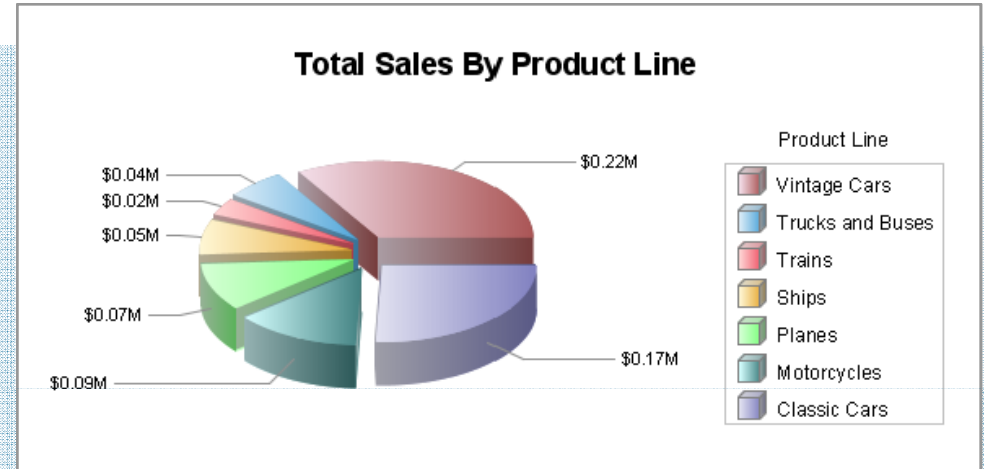
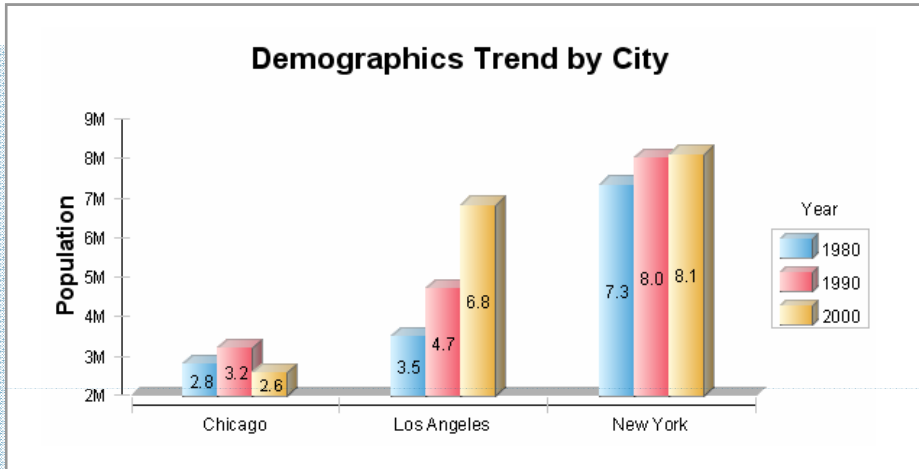
קרת מדע 11, יחשלים
תוצאות הסקר



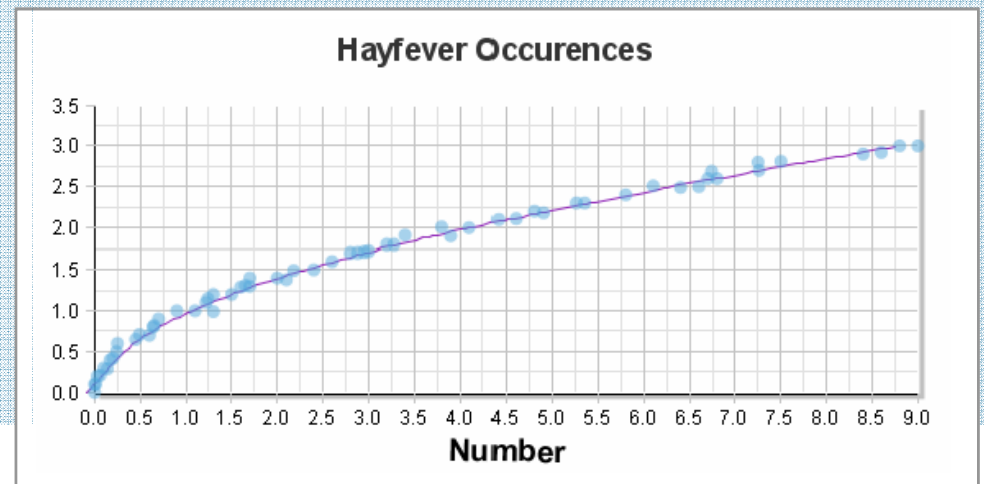
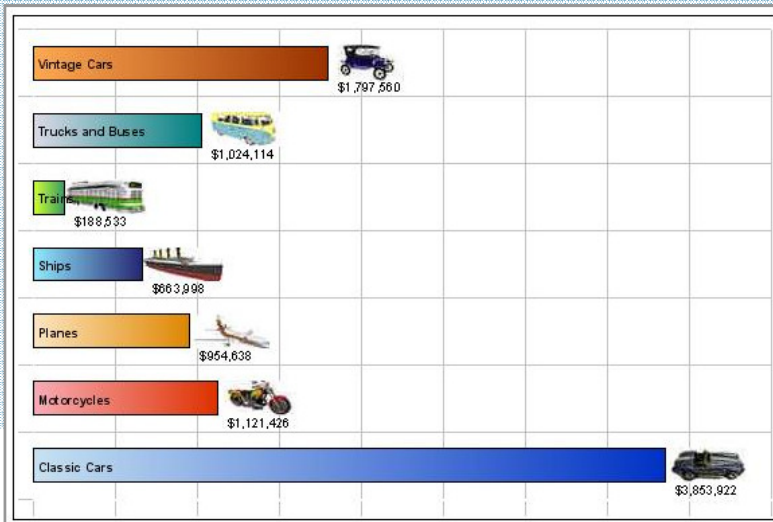
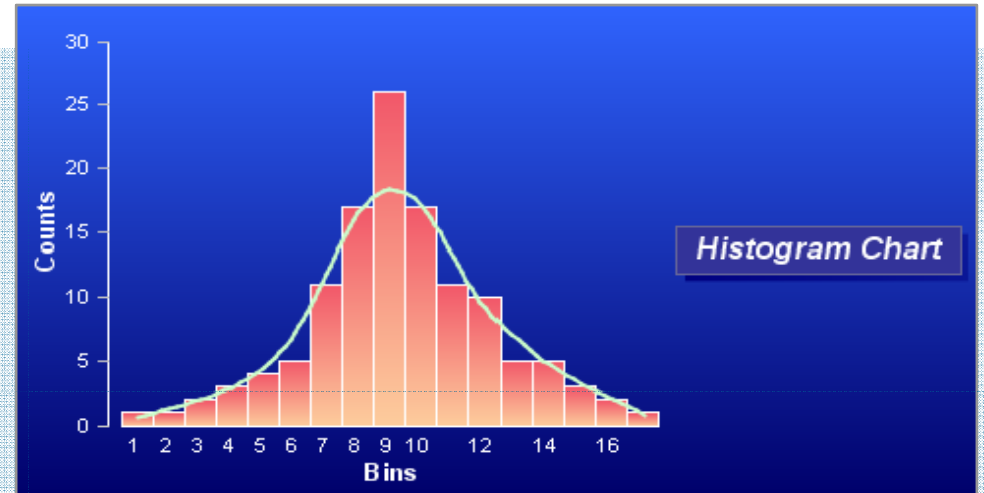
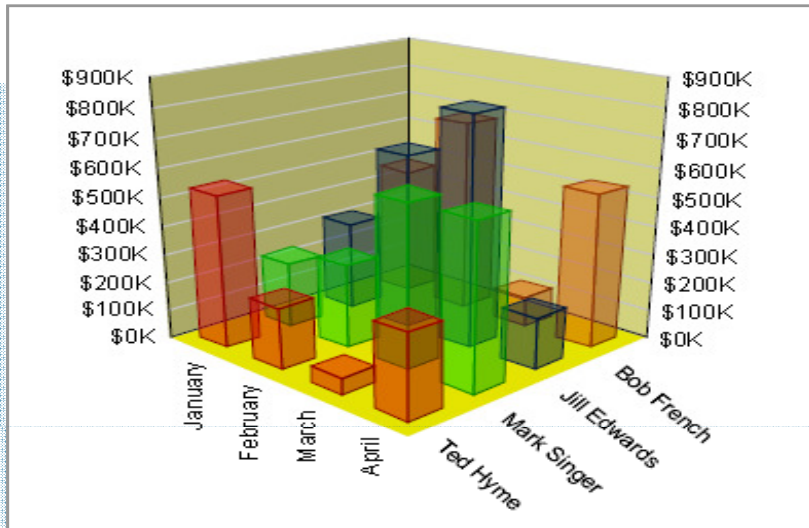
צבע מועדף	דגם מועדף	שם הלקוח
אדום	1300	ANG Resellers
כחול	הרלי דוידסון	AV Stores, Co.
כתום	פורד פלקון	Alpha Cognac
ירוק	פורד מוסטנג	American Souvenirs Inc.
כחול	קורוואיר מונזה	Amica Models & Co.
צהוב	קורוואיר מונזה	Anna's Decorations, Ltd.
לבן	1300	Anton Designs, Ltd.
זהוב	קורוואיר מונזה	Asian Adventures, Inc.
סגול	דוג' צ'ארג'ר	Asian Shopping Network, Co
אדום	קורוואיר מונזה	Asian Treasures, Inc.
כסוף	אלפא רומיאו GTA	Atelier graphique

Dashboards

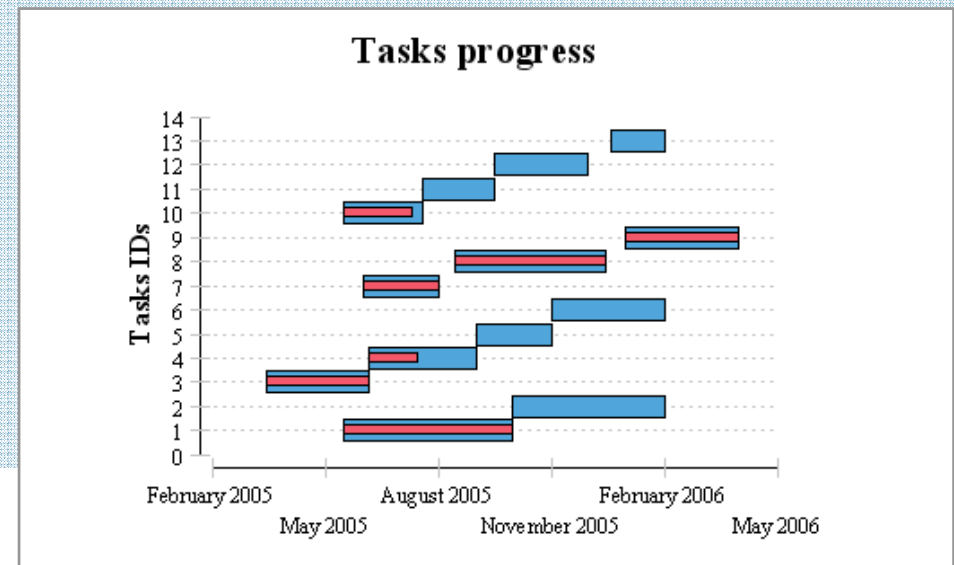
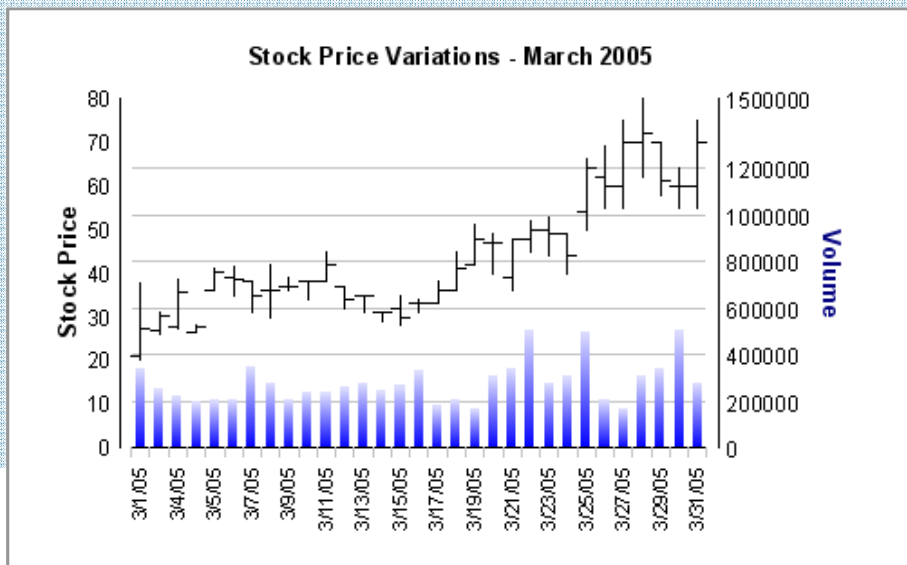
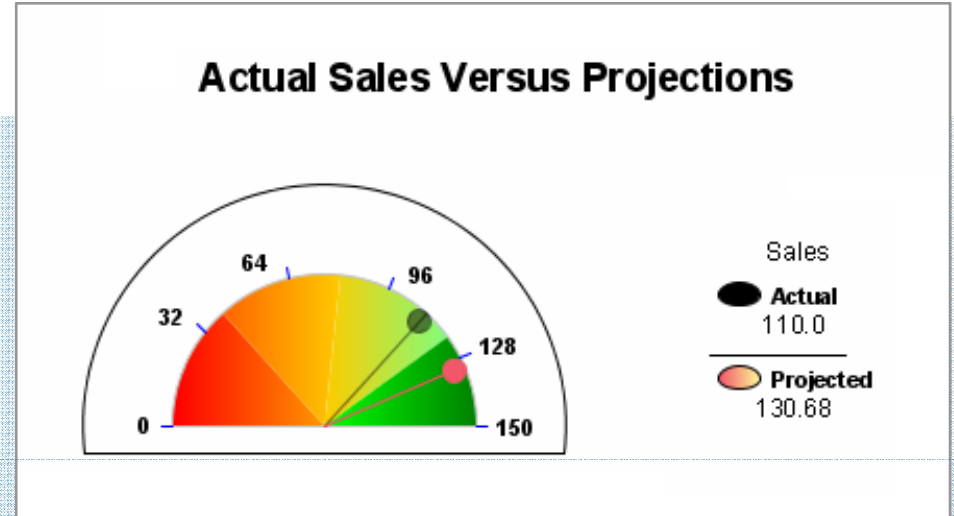
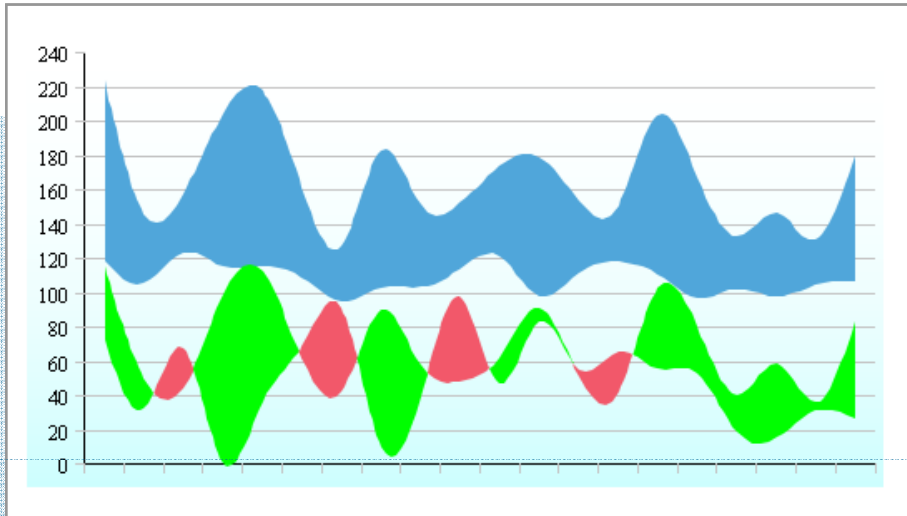
BIRT Chart Gallery



BIRT Chart Gallery

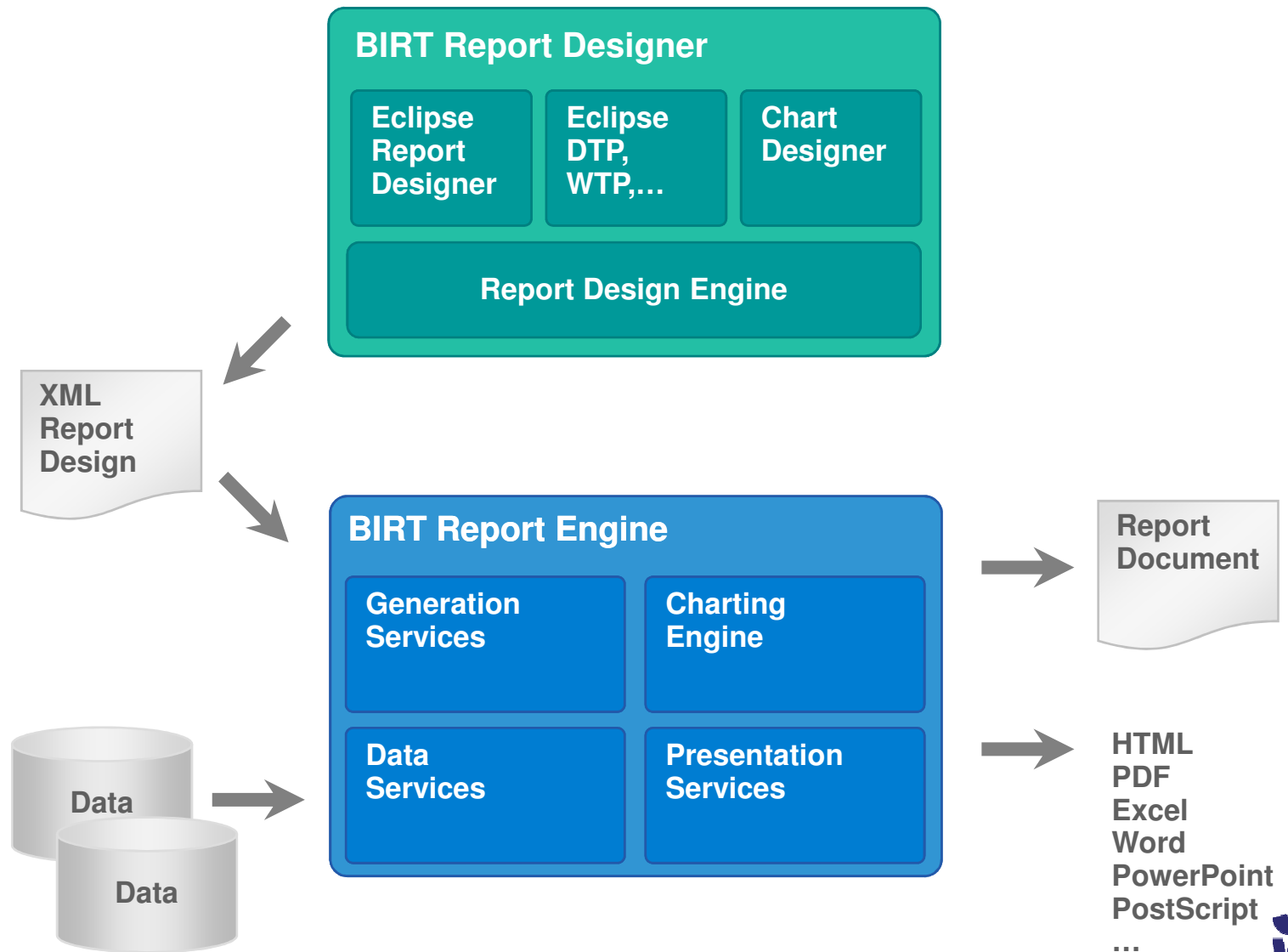


BIRT Chart Gallery

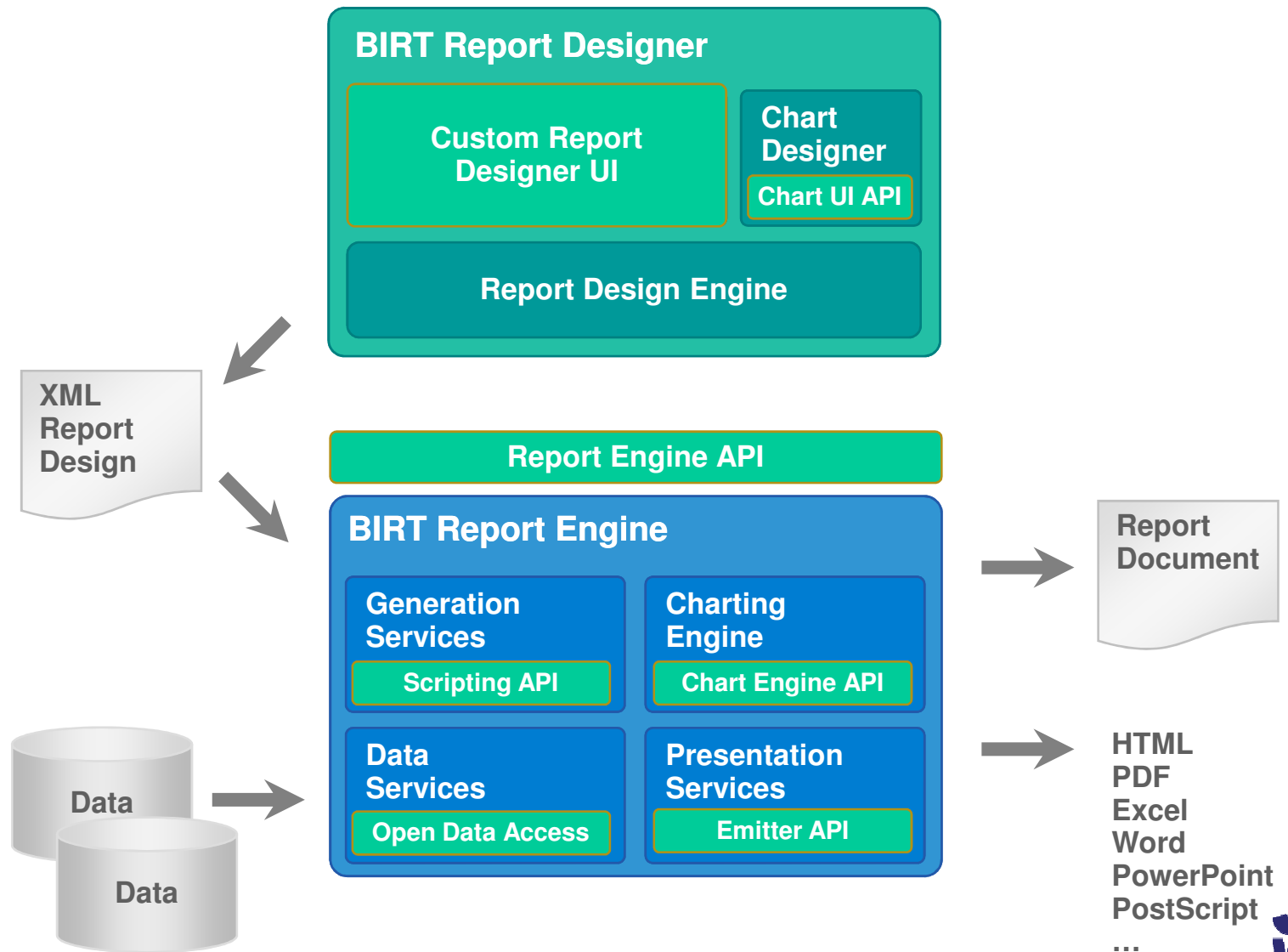


DEPLOYING BIRT RUNTIME TO JBoss APPLICATION SERVER

High-Level BIRT Architecture



High Level BIRT Architecture: APIs



BIRT Extension Points

Extensibility is a key principle of the BIRT Project

Data source extensibility

- Application specific design-time query builders
- Custom design-time and run-time data access

Custom business logic extensibility

- Incorporate complex business logic scripting
- Access existing and new Java code

Visualization extensibility

- Build new visual data presentation 'widgets'
- Extend charting with new chart types; new output formats

Rendering content for output

- Target output for specific devices and formats

How is BIRT Being Used?

BIRT Report Designer on Desktops

Use ***BIRT Report Designer***
as a desktop reporting solution

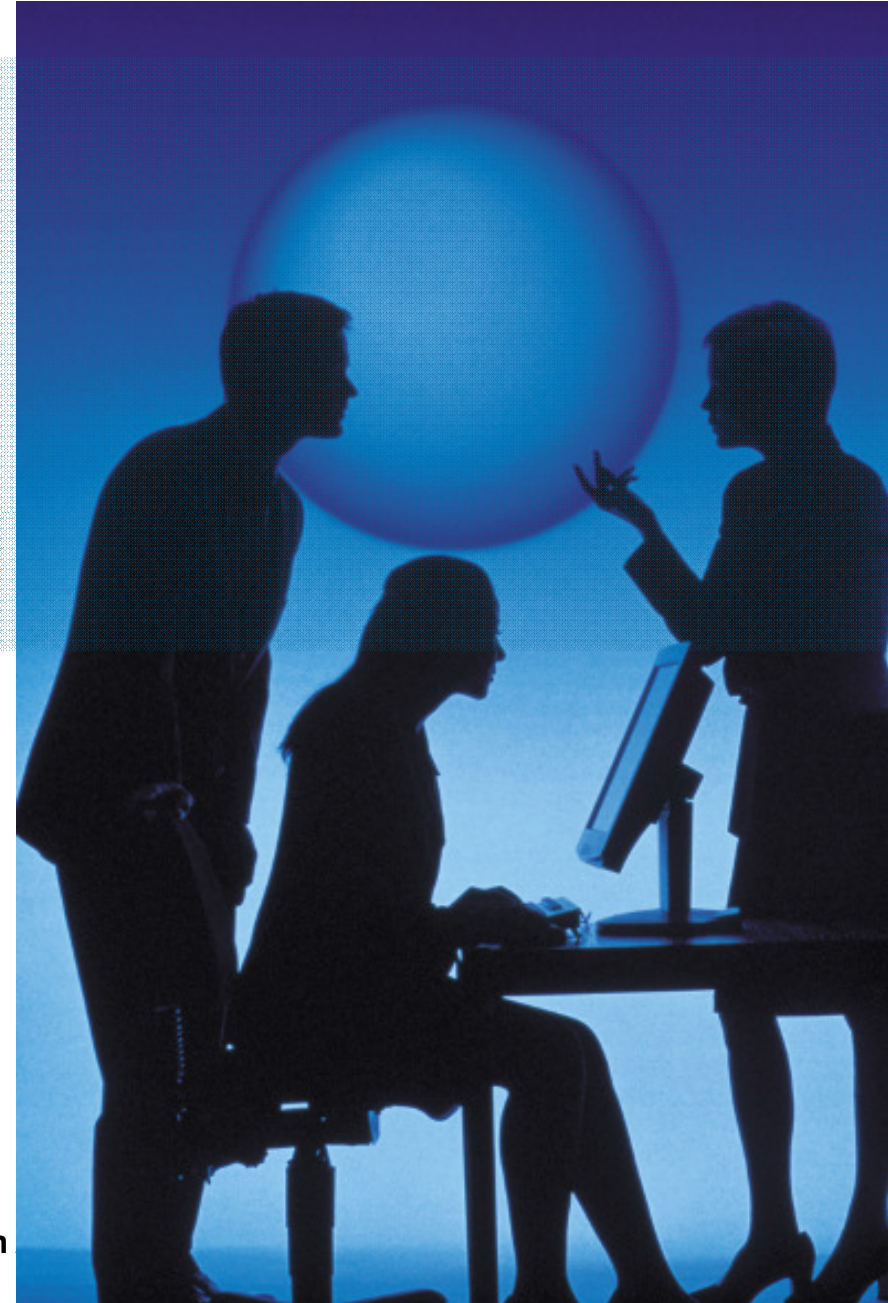
**BIRT Report
Designer**

Usage Scenario

- Desktop personal productivity tool

Users

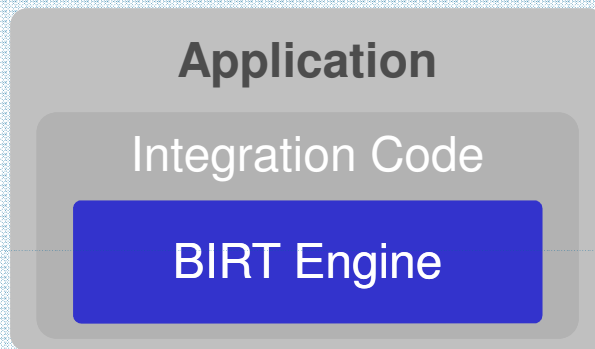
- Report developers
- Advanced business users



How is BIRT Being Used?

Integrated Data Visualization

Integrate Open Source
BIRT Report Engine into application



Usage Scenario

- Add reporting and data visualization to applications

Users

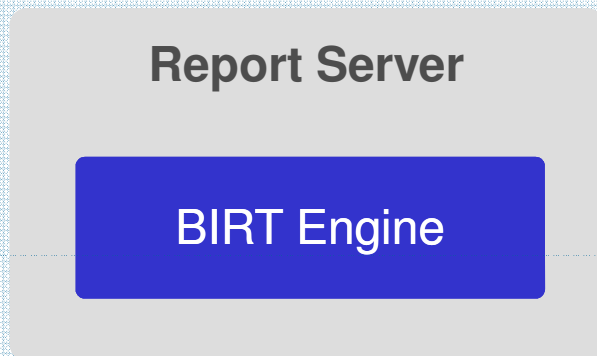
- ISV and Enterprise Application Developers
- Java Developers, PHP Developers, ...
- Report Developers



How is BIRT Being Used?

Business Intelligence

Leverage **commercial deployment solution** for BIRT Reports

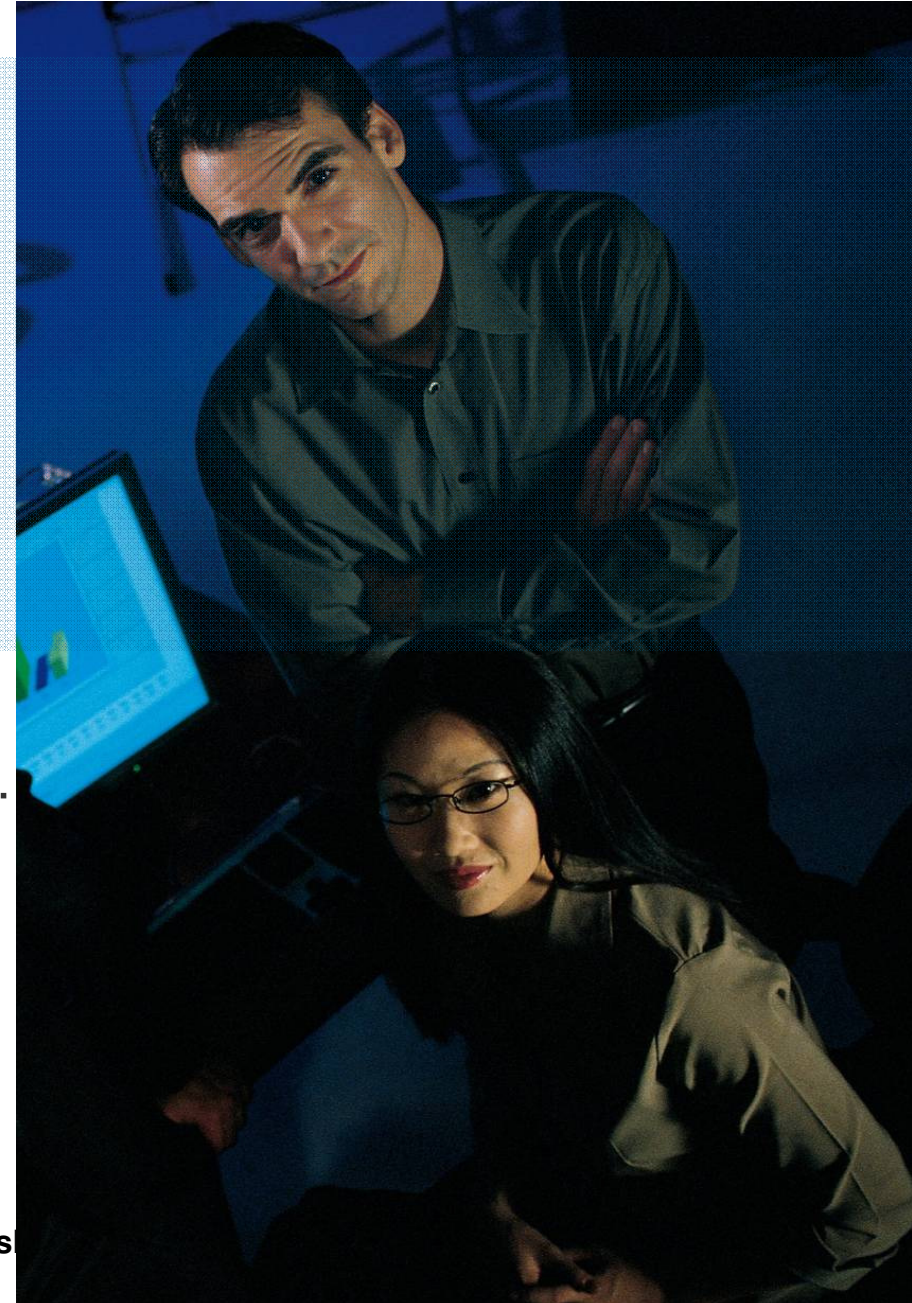


Usage Scenario

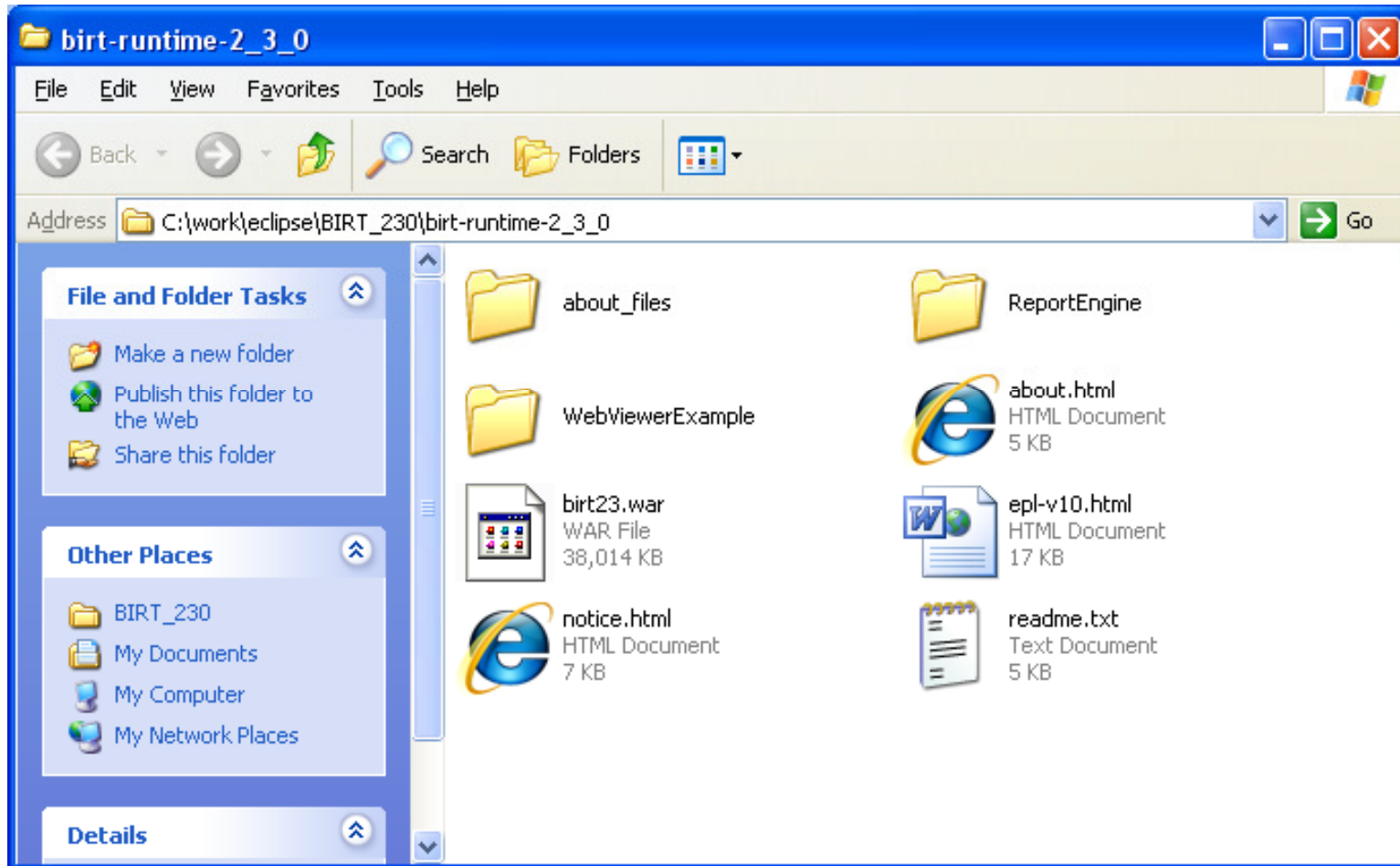
- Automated report generation, distribution, ...
- Interactivity, security, ...

Users

- Java developers
- Report developers
- Business users



BIRT Runtime



BIRT Report Engine

The BIRT Report Engine allows you to write Java code to read in report designs, apply any parameters etc, and output a report.

Used in standalone Java applications

- RCP applications

- Batch applications

Used in web applications

Sample code at [BIRT Exchange](#)

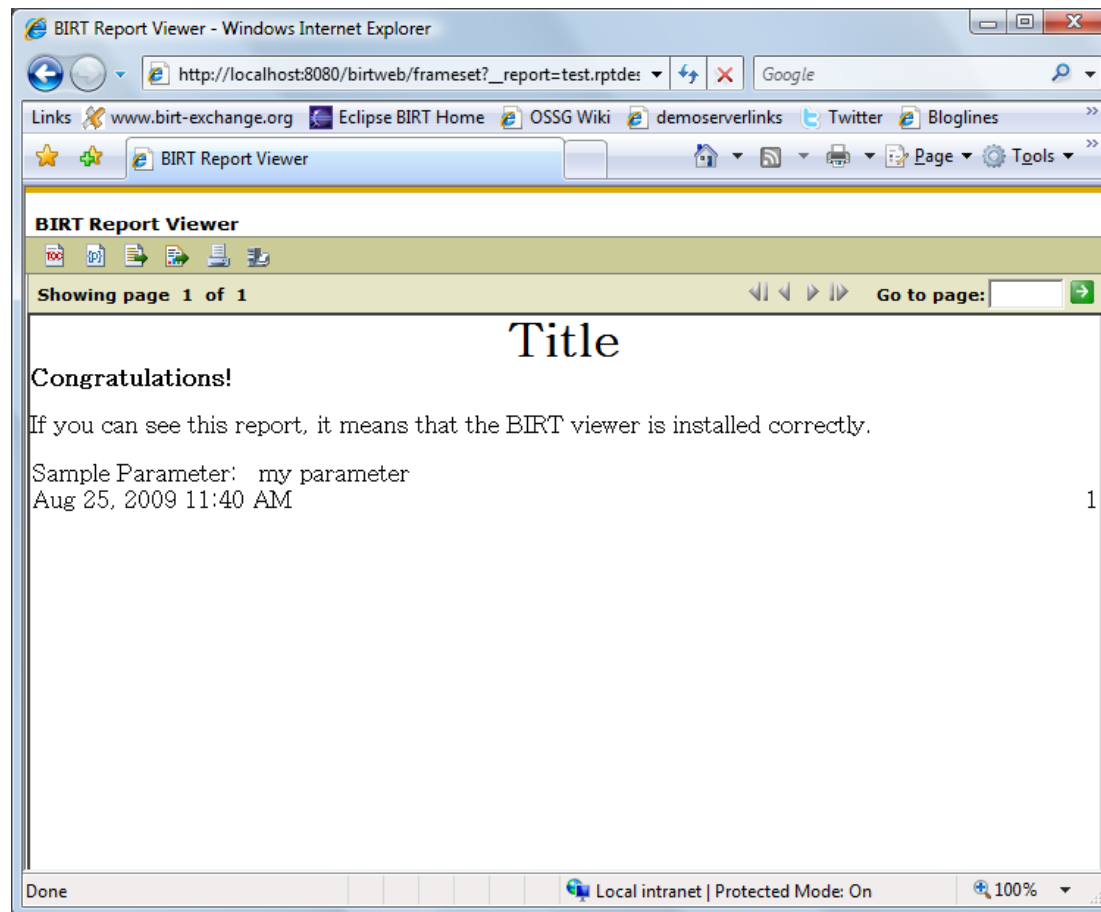
Report Engine API Overview

REAPI supports the following operations:

- **Discover report parameters**
- **Get default parameter values**
- **Generate report documents. (rptdocument)**
- **Generate report output (PDF, HTML, paginated HTML, DOC, XLS, PPT, Postscript)**
- **Fetch images and charts for a report**
- **Export report data as CSV**
- **Retrieve Table Of Contents, Bookmarks**

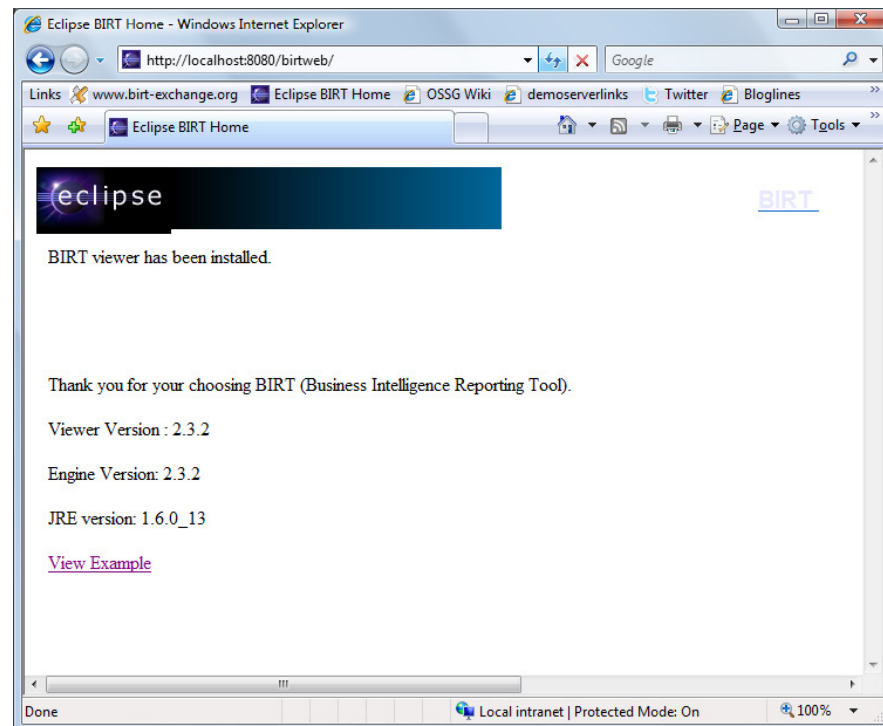
BIRT WebViewerExample

The BIRT Web Viewer is an open source example web application for running and viewing BIRT reports and uses the Report Engine API



Deploying BIRT Viewer to JBoss Application Server

- Download BIRT Runtime
- Rename WebViewerExample directory to birtweb.war
- Copy entire directory to \server\default\deploy
- Test Viewer - <http://localhost:8080/birtweb>



BIRT WebViewerExample URLs

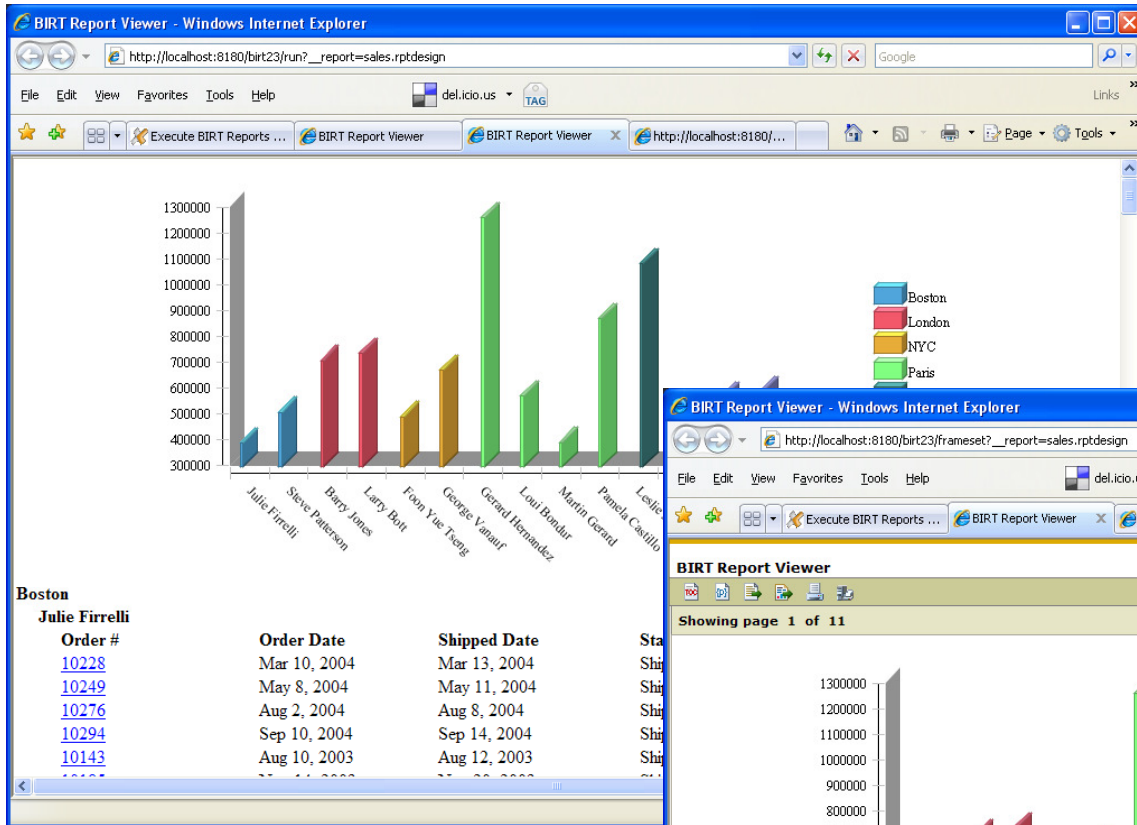
To view the report in the viewer complete **with toolbar**, navigation bar and table of contents features, use:

http://localhost:8180/birt23/frameSet?__report=sales.rptdesign

To view the report **without the toolbar**, navigation bar and table of contents features, use:

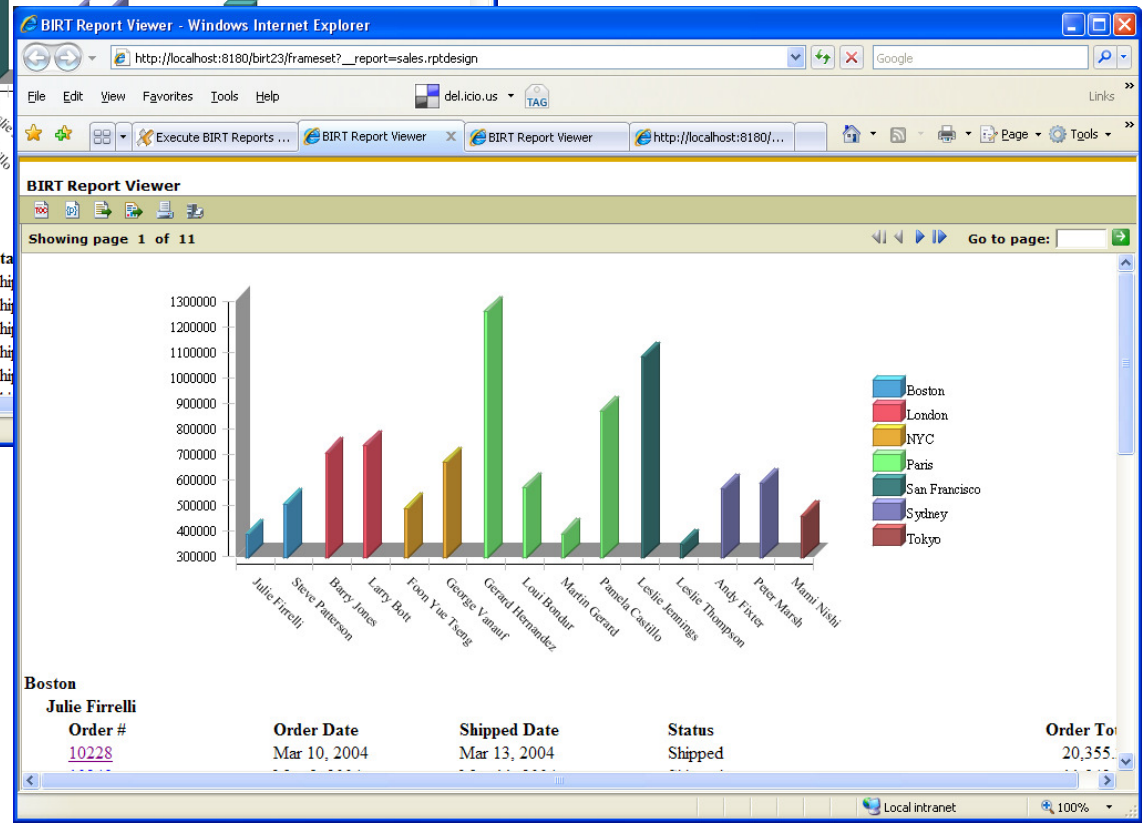
http://localhost:8180/birt23/run?__report=sales.rptdesign

Other included Servlets are **preview**, **document**, **output**, **extract**



without toolbar

with toolbar



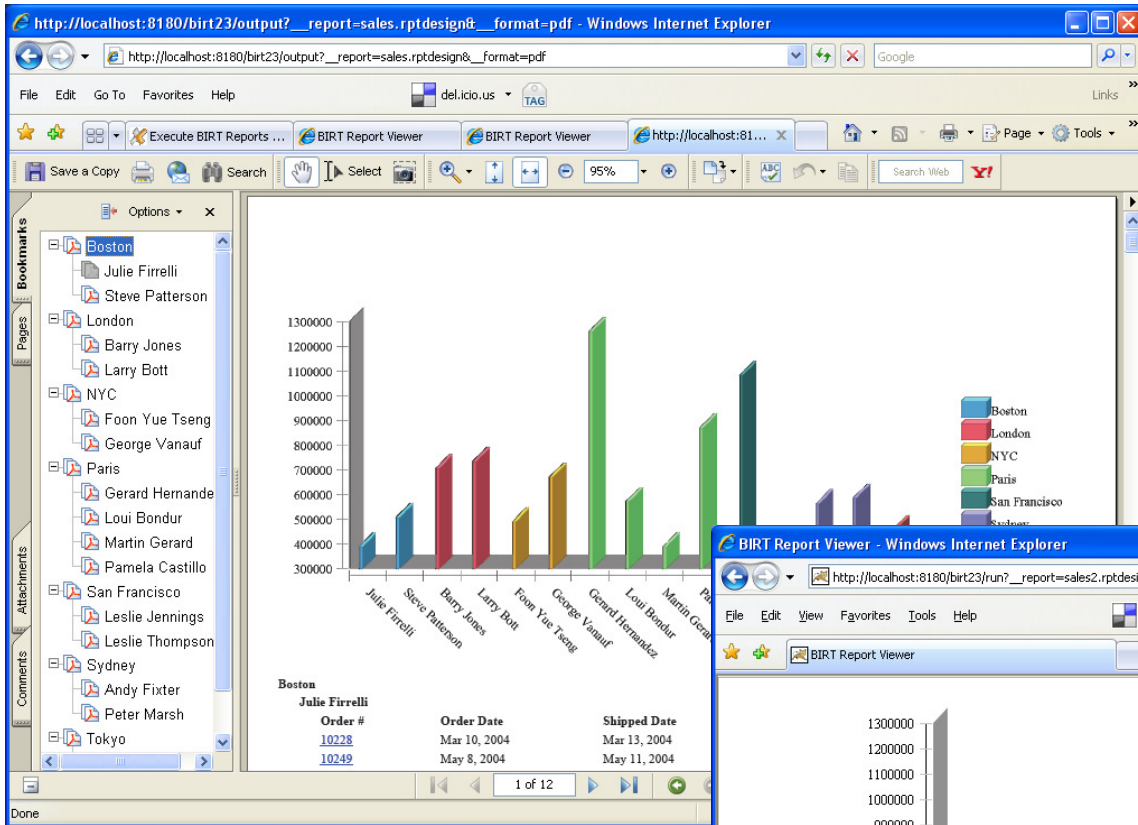
BIRT WebViewerExample URLs (cont.)

To go directly to an output **format** like PDF, use:

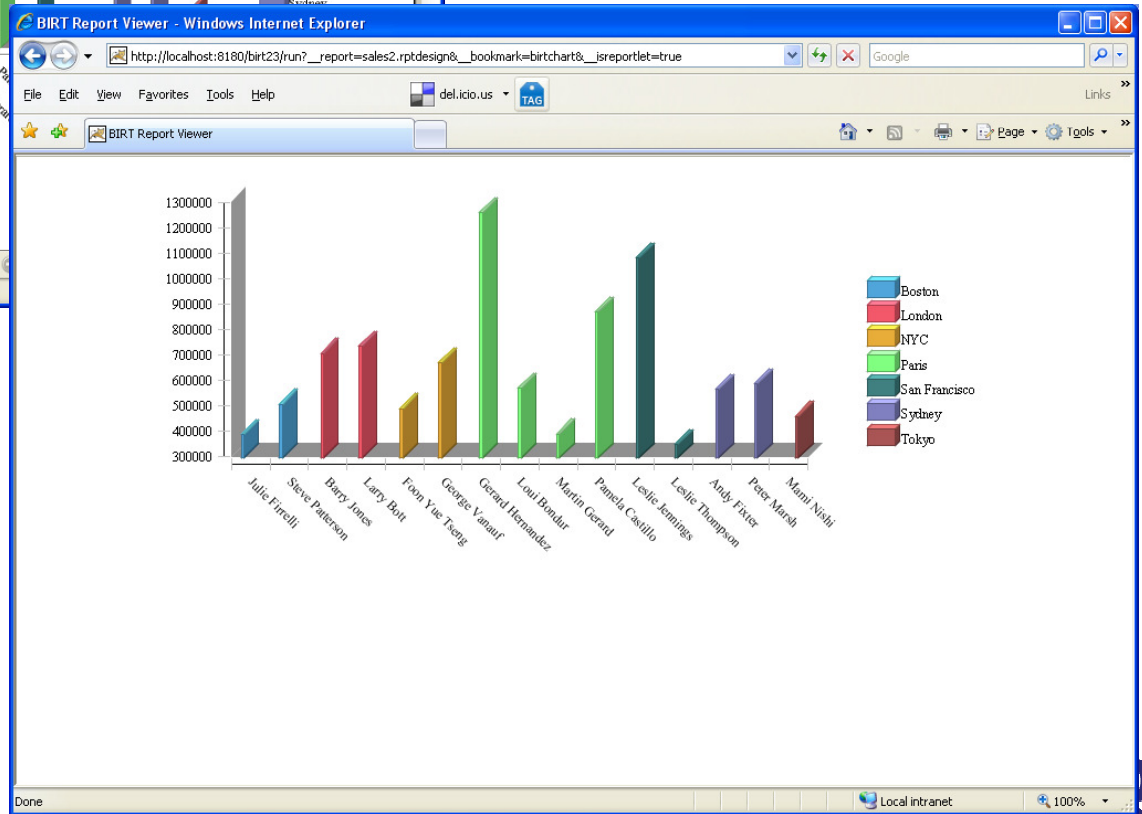
http://localhost:8180/birt23/run?__report=sales.rptdesign&__format=pdf

To get only a chart or table displayed as a **reportlet**, use:

http://localhost:8180/birt23/run?__report=sales2.rptdesign&__bookmark=birtchart&__isreportlet=true



as reportlet



BIRT WebViewerExample URLs (cont.)

__report – name of report design (absolute/relative)

__document – pre-generated report instance

__format – desired output

__locale – desired locale

ReportParameter=ParameterValue

BIRT WebViewerExample web.xml settings

BIRT_VIEWER_DOCUMENT_FOLDER = relative location for designs and generated documents

BIRT_RESOURCE_PATH = Resource location directory.
Defaults to \${BIRT home}

...

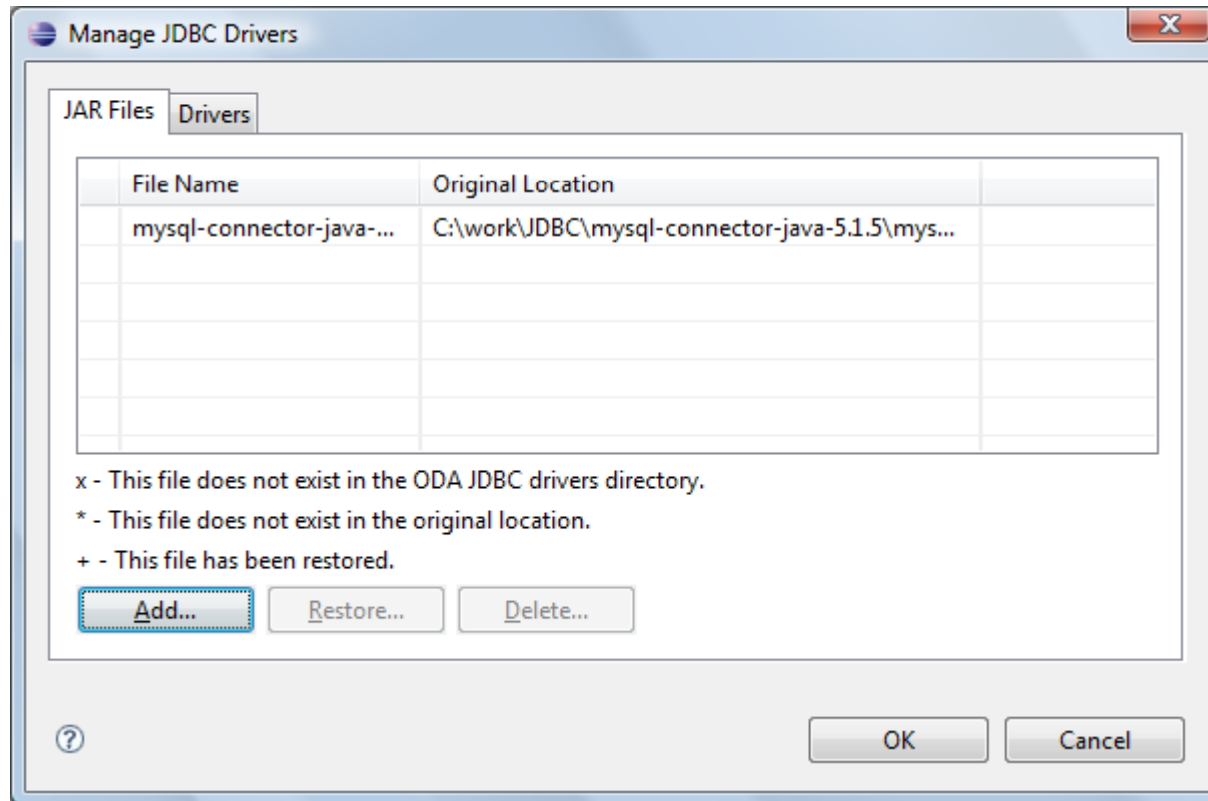
BIRT_VIEWER_PRINT_SERVERSIDE

BIRT_VIEWER_IMAGE_DIR

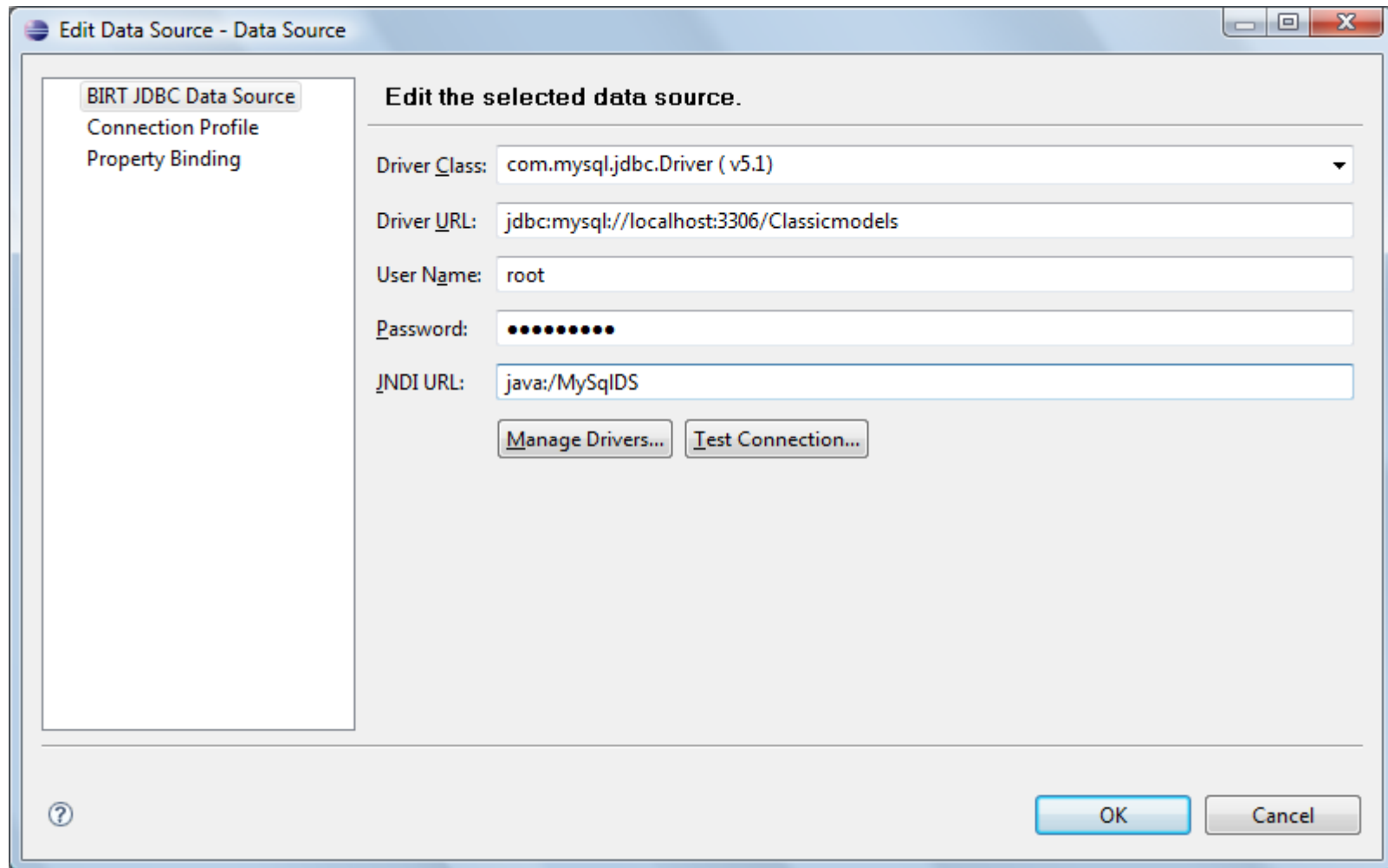
BIRT_VIEWER_LOG_LEVEL, BIRT_VIEWER_LOG_DIR

Deploying JDBC Drivers

WebViewerExample/WEB-INF/platform/plugins
/org.eclipse.birt.report.data.oda.jdbc_[version]
/drivers



Using JBoss Supplied Connection Pool

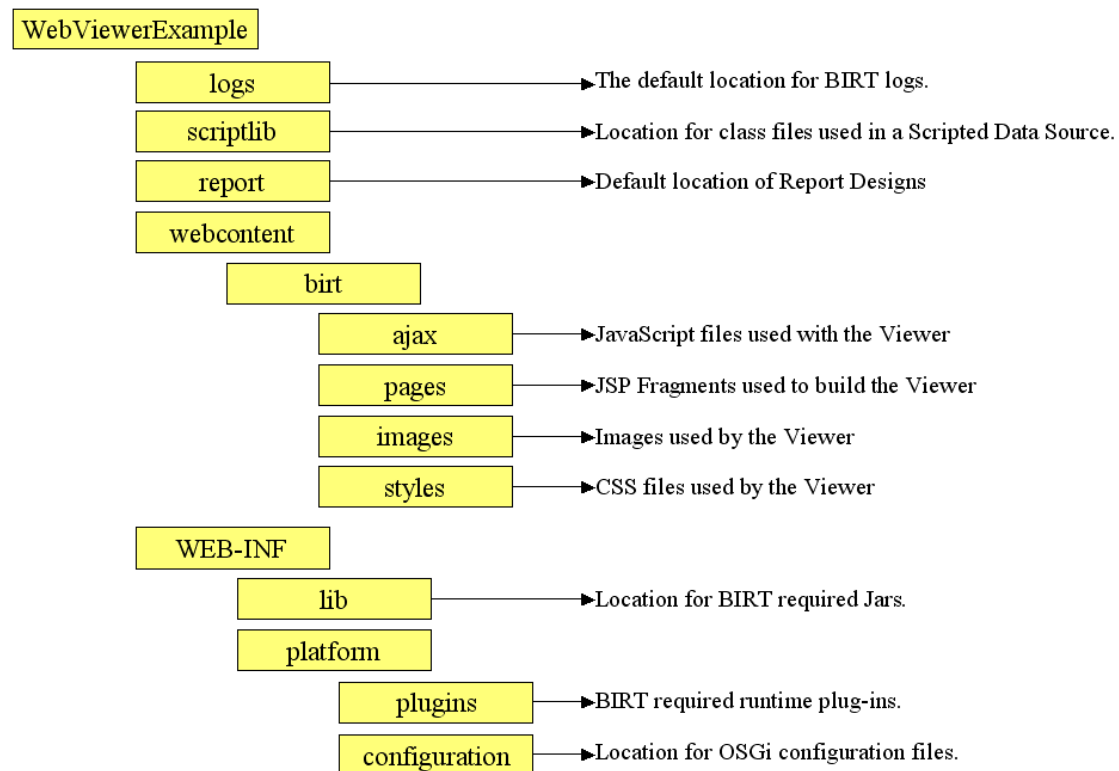


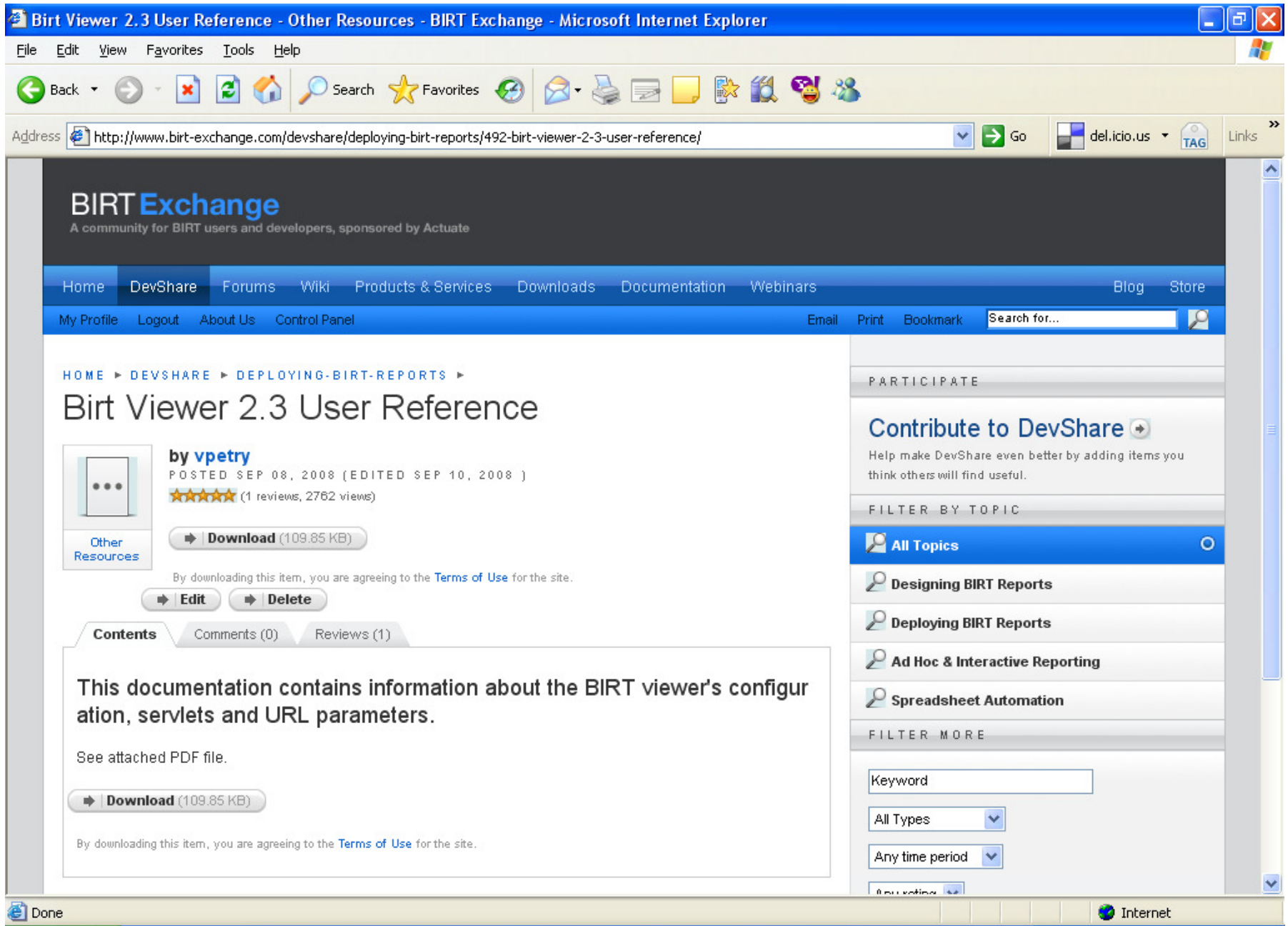
Customizing BIRT WebViewerExample

Source from CSV project - org.eclipse.birt.report.viewer

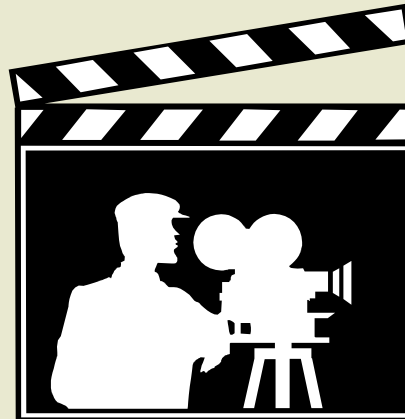
(described on the Eclipse BIRT web site)

Change JSP fragments, JavaScript files, and Styles





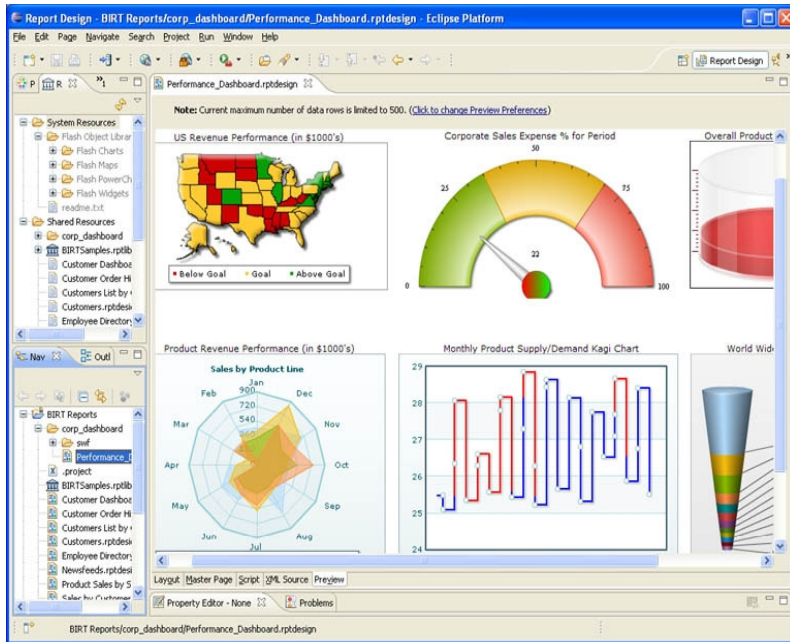
Demo



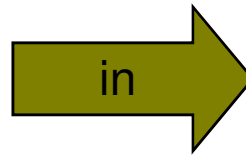
BIRT Viewer on JBoss in Action!

BIRT/JBoss TOOLS 3.0 INTEGRATION

BIRT Designer



JBoss Tools



BIRT in JBoss Tools = JBoss Tools + BIRT Plugins ?

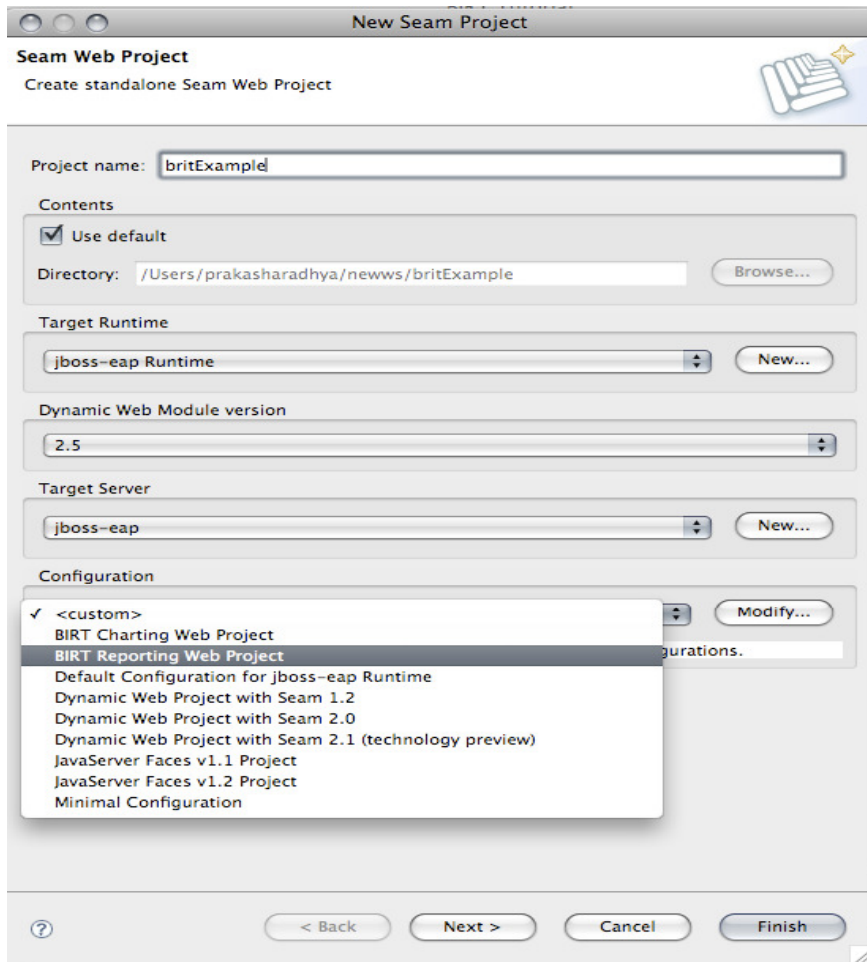
Where to find these stuff ?

- JBoss Tools 3.0:
 - Download JBoss Tools plugin from - <http://jboss.org/tools/download.html>
 - Eclipse IDE from eclipse.org
 - BIRT Report Designer from - http://www.eclipse.org/downloads/download.php?file=/birt/downloads/drops/R-R1-2_3_2-200902181355/birt-report-framework-2_3_2.zip
 - BIRT Web tools integration from - http://www.eclipse.org/downloads/download.php?file=/birt/downloads/drops/R-R1-2_3_2-200902181355/birt-wtp-integration-sdk-2_3_2.zip
- JBoss Developer Studio: (JBoss Supported Product)
 - Download BIRT integration plugin from the update site (Not supported yet)
 - BIRT report designer and web tools integration as above

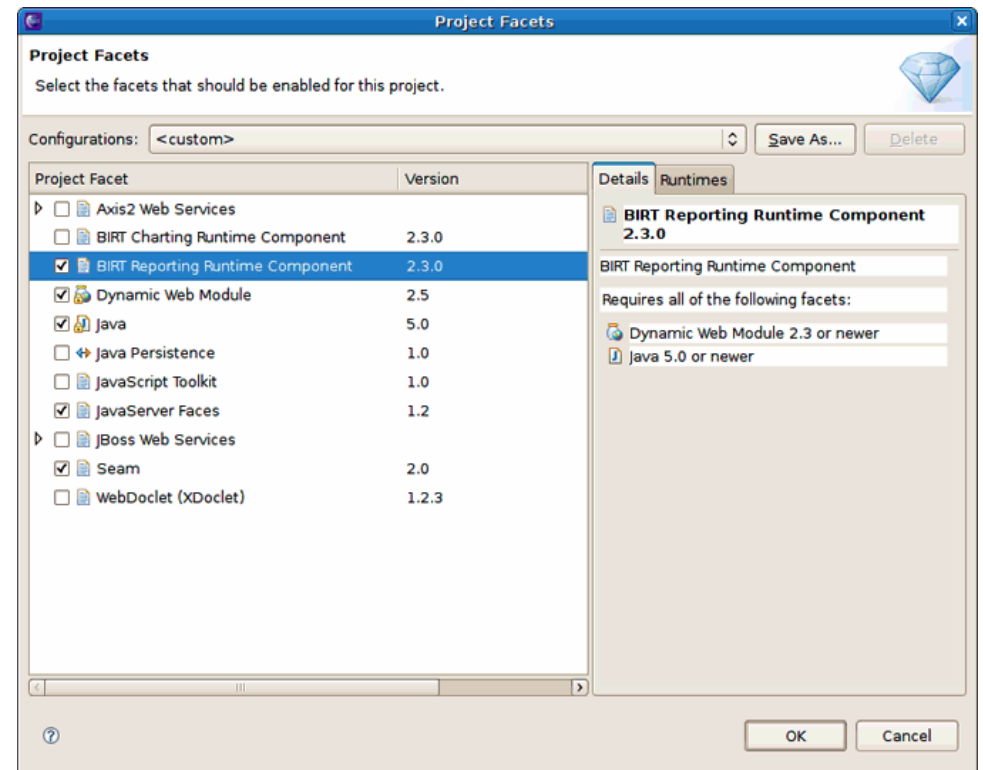
BIRT in JBoss Tools

- Integration with Seam
 - BIRT Facet in Seam Web Project. Use BIRT features in Seam Web Apps
 - Deploy BIRT reports in Seam applications
 - Ability to create JSF/RichFaces widgets using RichFaces CDK
- Integration with Hibernate ODA.
 - Generate and use HQL queries with integrated tooling
 - Access Data Sources through Hibernate ODA driver
- Integration plugin packaged with JBoss Tools 3.0

Use of BIRT in Seam Applications



BIRT Facet for Seam Apps: Configuration = JBoss BIRT Integration Web Project



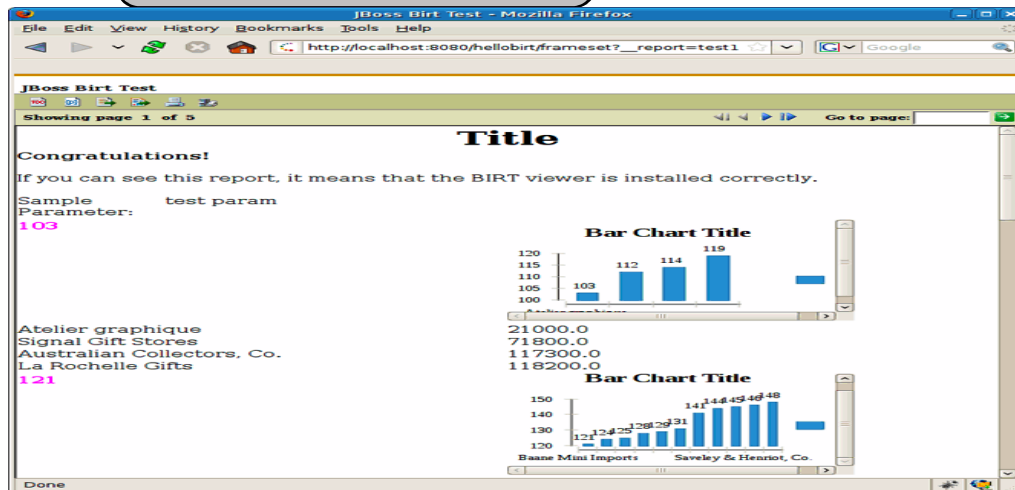
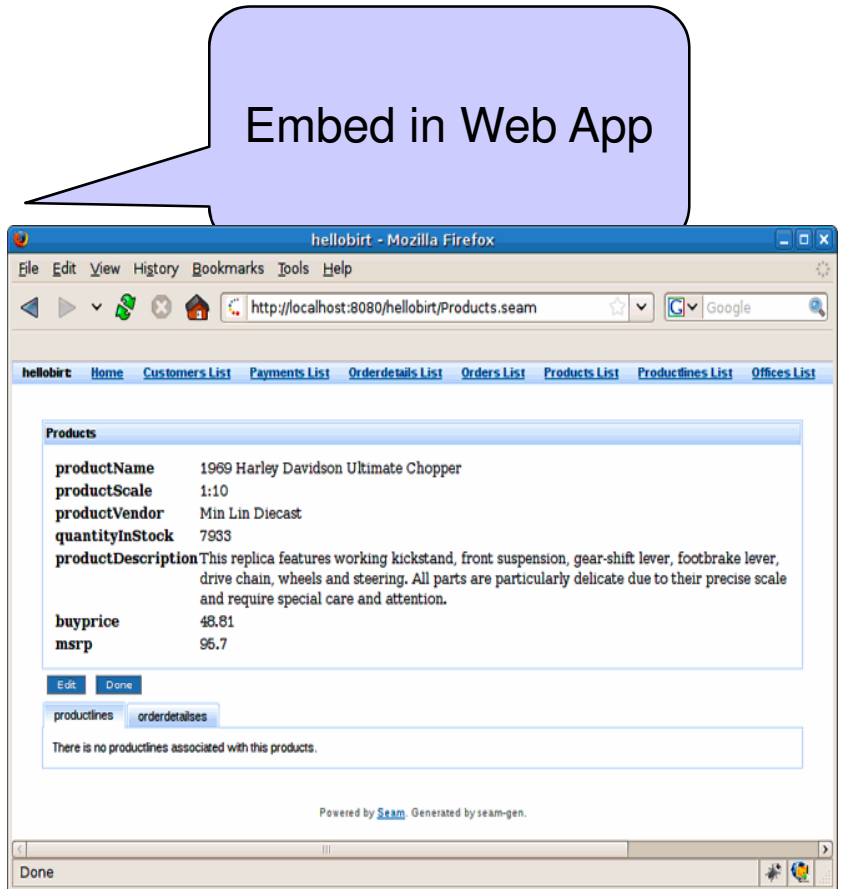
Add BIRT reports to Seam web pages

BIRT tag in Seam app

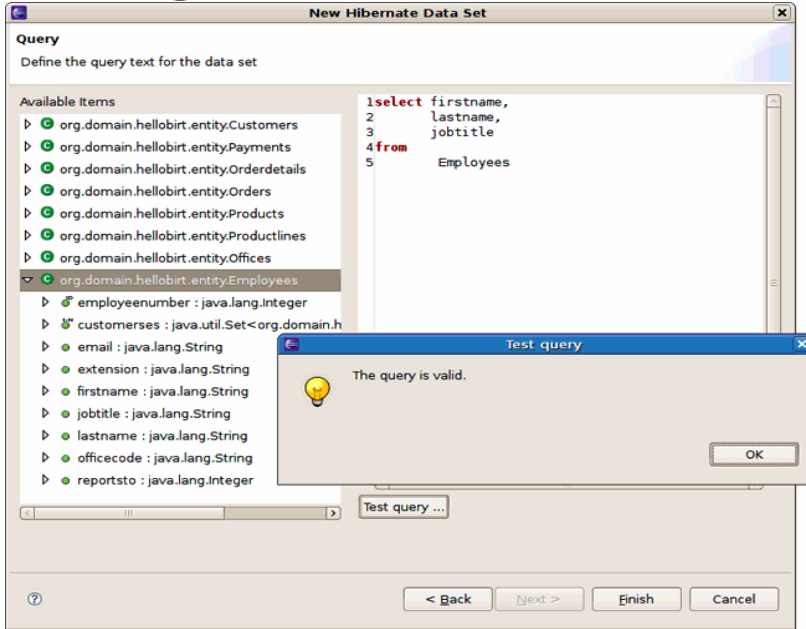
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<p:birt xmlns:ui="http://java.sun.com/jsf/facelets"
        xmlns:s="http://jboss.com/products/seam/taglib"
        xmlns:p="http://jboss.com/products/seam/birt"
        designType="run"
        designName="test.rptdesign"
        title="JBoss Birt Test">
```

```
</p:birt>
```

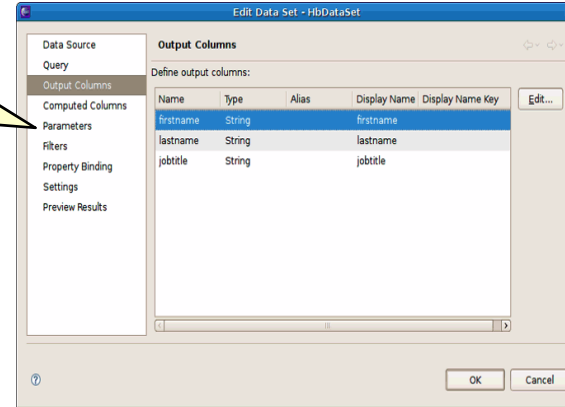
As a PDF : `format="pdf"`



Integration with Hibernate Tools

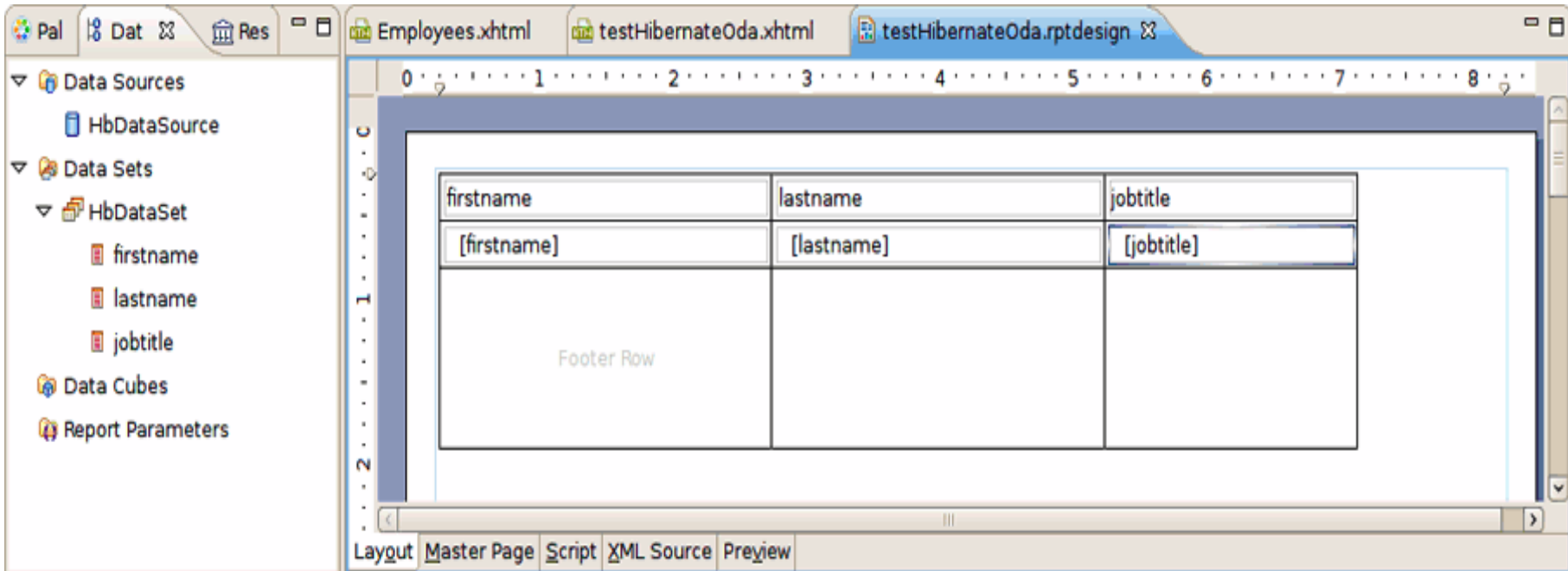


Params

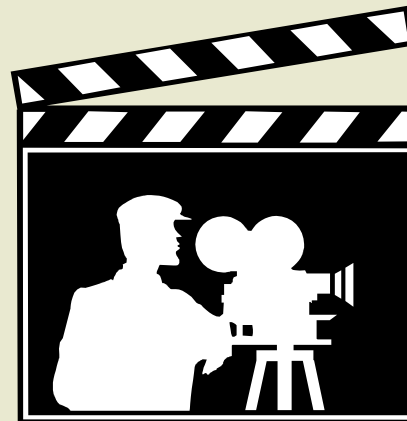


BIRT Report Using DataSource

Define Hibernate Data Source and Data Query



Demo



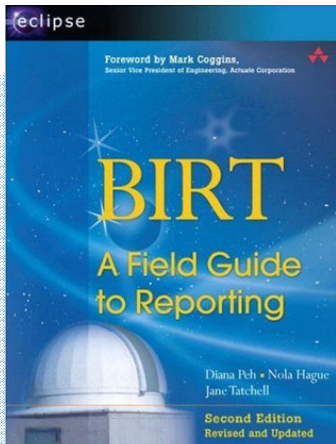
BIRT/JBoss Tools in Action!

QUESTIONS?

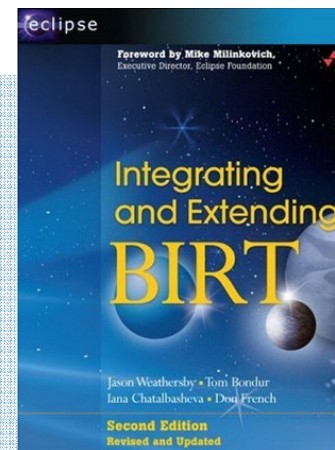
**TELL US WHAT YOU THINK:
[REDHAT.COM/JBOSSWORLD-SURVEY](https://redhat.com/jboss-world-survey)**

BIRT Momentum

Publications



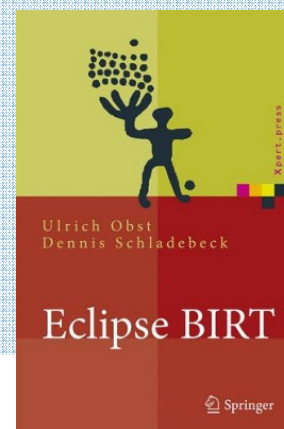
BIRT: A Field
Guide to Reporting
2nd Edition



Integrating and
Extending BIRT
2nd Edition

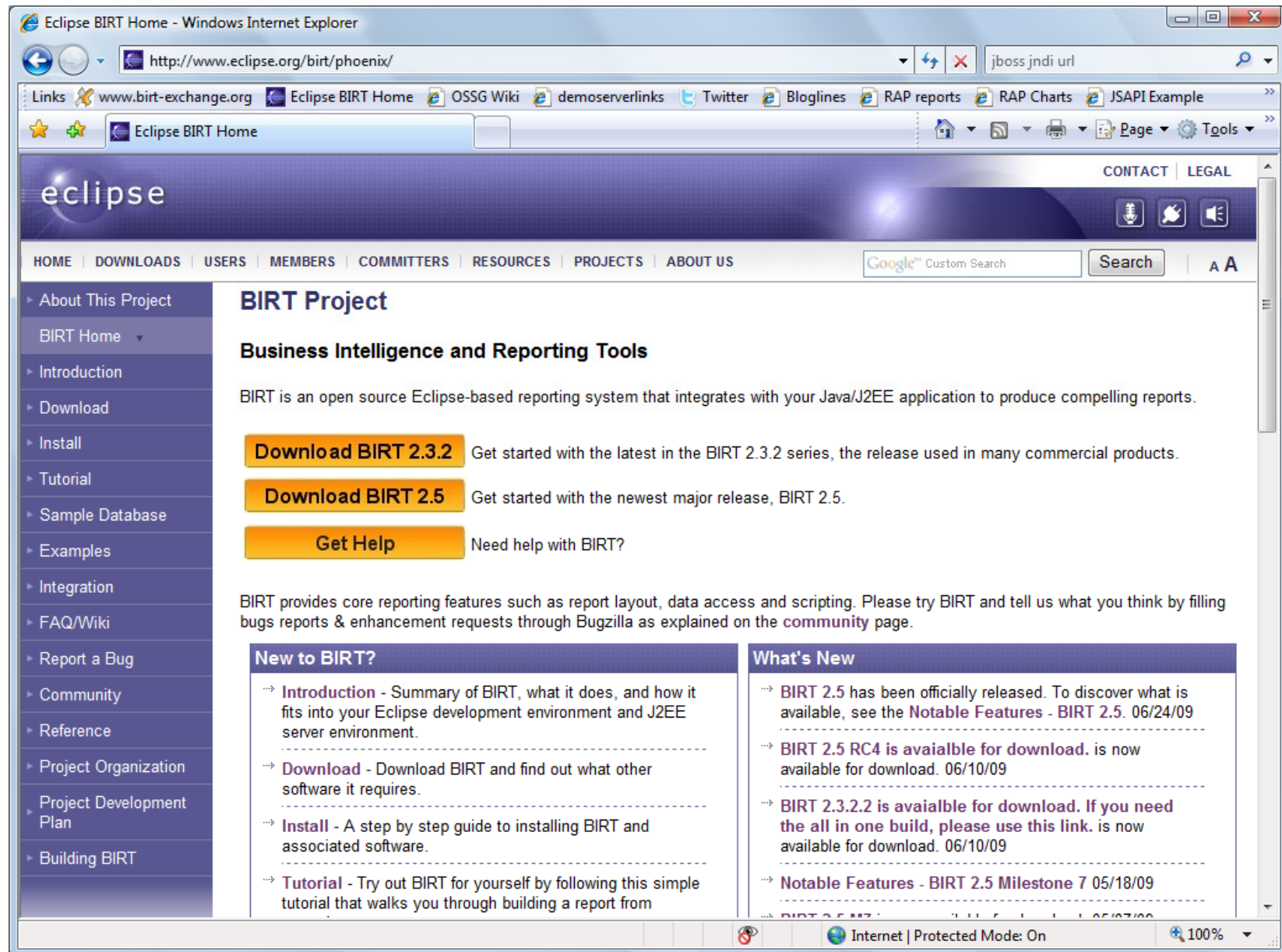


Practical Data
Analysis and
Reporting
with BIRT



Eclipse BIRT:
Business
Intelligence and
Reporting Tool

BIRT Project Site at Eclipse.org



JBoss.org/tools



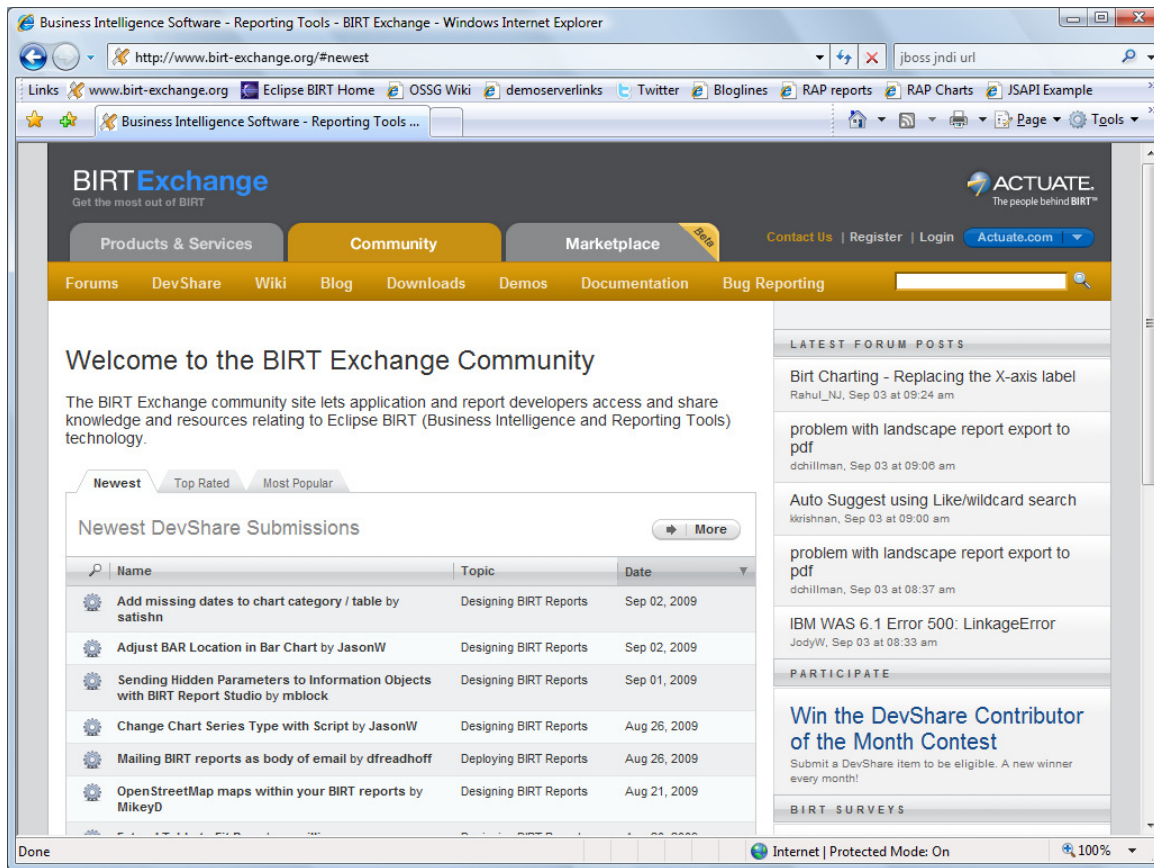
BIRT Exchange Community Site

Centralized Knowledge Hub for BIRT Developers

Access Downloads, Demos, Tutorials, Tips & Techniques, Webinars

Easy for users to contribute content, share knowledge

Enables developers to be more productive and build applications faster



www.birt-exchange.org

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Getting BIRT-y with JBoss

Virgil Dodson – vdodson@birt-exchange.com
Twitter: [@birtexchange](https://twitter.com/birtexchange)
Evangelist, Actuate/BIRT Exchange

Prakash Aradhya
Sr. Product Manager, Red Hat

September 3, 2009

BIRT Momentum

Sample BIRT Adopters



Actuate BIRT Technology Family

Complementing and Extending Eclipse BIRT

