
Reporting engines (servers) comparison

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1. History

1.1 Revision History

Version	Date	Description of Changes	Reason	Made by
0.1	19.09.2006	Created		O.Moroz, D. Boriskin,
1.0	21.09.06	Updated, executive summary added	Updated upon results of internal review	O.Moroz
	25.09.06	LGX Report added		D. Boriskin
	26.09.06	MicroStrategy added		D. Boriskin
	26.09.06	BusinessObjects products added		A. Afanasyev
	26.09.06	Oracle Reports added		O.Moroz
	27.09.06	Synaptris IntelliVIEW added		D. Boriskin
	27.09.06	Applix TM1 added		D. Boriskin
2.0	28.09.06	Comparison analysis Summary and Scope updated		O.Moroz
3.0	16.10.06	Reformatted		D. Boriskin

1.2 Review History

Version	Date	Reviewer	Reference
1.0	22.09.06	E. Povalyaev	Reviewed
2.0	28.09.06	A. Ignatov	Reviewed
2.0	28.09.06	E. Povalyaev	Reviewed

1.3 Approval History

Version	Date	Approved by	Signature or reference

2. Introduction

2.1 Purpose

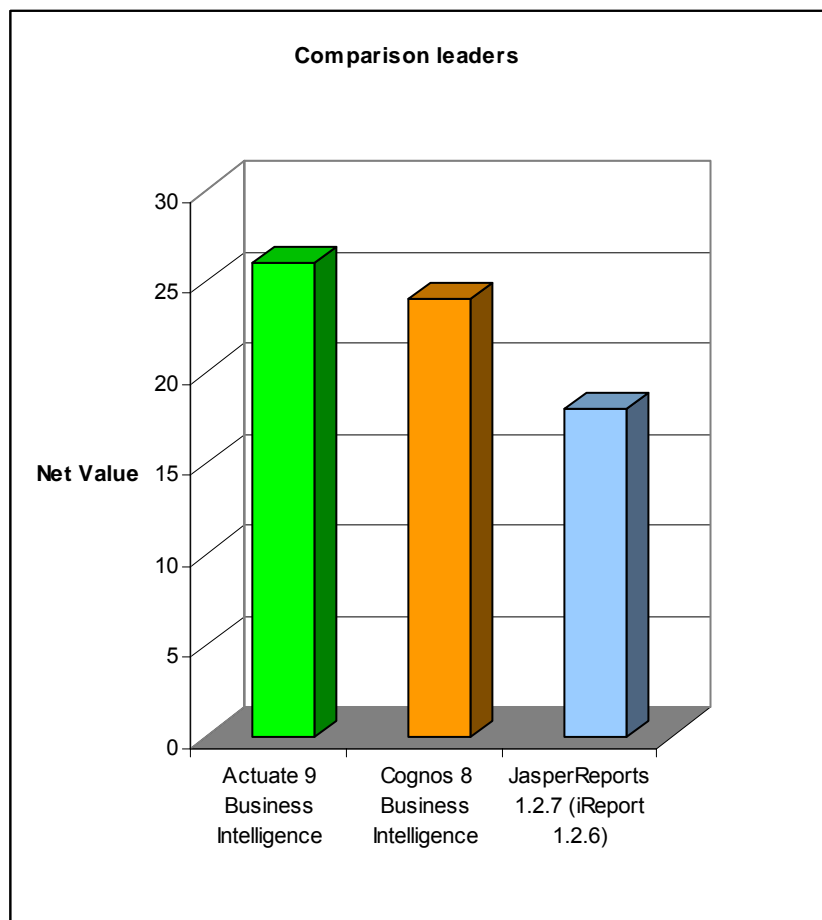
The main purpose of this document is to present the results of the research established by Luxoft to compare several reporting engines and find out the most appropriate solution, which is eminently suitable to business and technical requirements of Customer.

2.2 Summary

We evaluated and compared several reporting engines and solutions available on the market. The evaluated products fall into two groups (embeddable reporting engines and Business Intelligence tools), both potentially useful depending on project context, and we evaluated them separately.

We recommend using JasperReports (**Luxoft Choice**) as open-source Java-based reporting engine solution because of its stability and feature set; an alternative BIRT engine shows promise but is not ready yet.

We recommend using Actuate (**Luxoft Choice**) in the BI category because of its feature set, and Luxoft experience with this product.



2.3 Scope

The scope of this analysis is limited by the explicit list of engines for evaluation, including

- Actuate Business Intelligence;
- Cognos Enterprise;
- Jasper;
- BIRT;
- MS SQL Server 2005 Analysis & Reporting Services;
- LGX Report;
- Microstrategy;
- Crystal Reports (BusinessObjects Enterprise BI);
- Oracle Reports;
- Synaptris IntelliVIEW;
- Applix TM1.

Solutions are evaluated based on the list of criteria specified by the customer and listed below (section 3.1).

2.4 Definitions, Acronyms and Abbreviations

BI – Business Intelligence

3. General information about reporting engines (servers)

3.1 Overview of the reports delivery process

Creating a functional reporting solution requires an understanding of user and business requirements. Existing data sources must be considered and new data stores must be designed to meet reporting needs. From this perspective, the process of creating useful reports consists of three activities:

- **Authoring:** interface for creation of data sources, queries and data sets, and the report definition.
- **Management:** interface for managing and deploying report definition files, shared data sources, and configuration settings; it can also be used to view and export report data.

- **Delivery:** Reports may be delivered to a user on demand or a custom application; it can also be scheduled for delivery through subscriptions. Reports can be delivered in the form of a web page, document, file, or even via e-mail.

To help end users support those activities reporting software must be adaptive to the current enterprise infrastructure, especially to the software that is used by information workers, developers and administrators. And this fact is the key to defining several categories of features that are quite common for today's reporting engines and may be used as a basis for their comparison. Here are those categories:

- **Web Browser support:** Web browser-based solutions have become popular for a number of reasons. User accessibility takes on a completely new definition when special software is not required on the client computer. Of course, a web browser makes information available for viewing over the World Wide Web, but browser-based solutions are also a compelling means to deliver information in a controlled business enterprise environment. Whether users access resources within their corporate intranet environment or over the web, the browser paradigm has significantly changed the approach to application delivery. Some of the traditional challenges with browser solutions are the lack of consistent support for clientside script and components. These issues have largely been resolved with server-side rendering mechanisms that output product-independent HTML content. For viewing offline content, HTML documents require links to external files, such as images, sounds, and video. These issues have also been resolved by using a Multipurpose Internet Mail Extensions (MIME)-encoded format called MHTML or Web Archive to encapsulate binary content within the page definition. Although not supported in all browsers, this format is a viable means to deliver extensible report content for live and offline viewing. HTML 4.0 works on different types of computers across the Internet and within a LAN on newer web browsers, and HTML 3.2 works with older browsers and on portable or hand-held devices.
- **Office Applications support:** Microsoft Office brings together a tremendous assortment of capabilities to assist report users at all levels. Microsoft Excel has been the mainstay tool for data collection and analysis. By rendering a report into Excel, the data may easily be reformatted, modified, or analyzed using formulas and calculations. This capability has been around for several years, but it required writing custom code to use the Excel object model from Access or Visual Basic to produce report data in Excel—this process was tedious at best. Now, pushing complex report data into a useful and well-formatted Excel document is simple. Microsoft Access continues to be the office worker's database of choice. Data tracking and management solutions can be created with minimal cost and effort. Access and Excel both provide the Office Web Components that may be used to view pivot tables and charts.
- **Programmability:** There may be a possibility for reporting engines features to be duplicated in many cases and be extended through program code. Reports may be viewed in place within an application by using an external web browser window, integrated browser control, or a custom report viewer component. Report content may be rendered to a file for persistent storage to directly into a viewer or browser.
- **Subscriptions:** Subscriptions allow users to receive or gain access to reports on a regular schedule. Reports are delivered by e-mail or saved to files where they may be viewed offline at the users' convenience. Report subscriptions may be set up for an individual user or large groups of users using data-driven subscriptions. To put this into perspective, effectively, reports may be delivered to any individual or size group of users in practically any readable format at any place and any time.

- **Report Formats:** In addition to the three HTML rendering formats, document types can be used to control formatting elements, printing layout, and adding other capabilities. The PDF document format remains the most popular means for ensuring that documents are formatted exactly as they were intended. Rendering a report to a Microsoft Excel workbook gives users the ability to continue to massage data and perform calculations.
 - **Importing Data/Exchanging Data:** Not all “reports” may be intended to be read or printed. Reporting engines usually provide several report rendering formats that can be used for export/import and data exchange. For example, using either the Comma-Separated Values (CSV) or XML formats, reporting engines provide a very convenient mechanism for intersystem data exchange or pushing data out to a trading partner.
 - **Ad Hoc Reporting:** Another important component of a reporting platform is the ability for users to easily create their own reports. This means a feature that helps users to create a semantic layer on top of the database data. The semantic layer provides an easy-to-understand model for the user to navigate. Users will not have to understand how to query the underlying database to create reports. Such a possibility gives users an easy-to-use interface for building reports.
-

3.2 Comparison criteria

The following list of criteria is in no particular order.

- 1) Application server support (including WebLogic and JBoss);
 - 2) DBMS support (including Oracle and Sybase);
 - 3) Supported report output formats (DOC/RTF, XLS, HTML, PDF, ODS);
 - 4) Supported report template formats (DOC/RTF, XLS);
 - 5) Support for formulas and macros in XLS and DOC reports;
 - 6) Support for password-protected fields in reports;
 - 7) Support for images and charts in report;
 - 8) Visual tools for report creation;
 - 9) Ad-hoc query capability;
 - 10) OLAP support;
 - 11) Batch report generation (performance, scheduling support, parallel query execution);
 - 12) J2EE/web application integration support;
 - 13) Is it open source;
 - 14) Product and support pricing.
-

4. Reporting engines (servers) comparison

4.1 Actuate 9 Business Intelligence

Actuate 9 Business Intelligence provides a complete line of products to meet the business analysis and reporting needs within the context of a business-specific application experience. The Actuate 9 Collaborative Reporting Architecture blends the open technologies from the Eclipse Foundation BIRT (Business Intelligence and Reporting Tools) project with the scalability, performance and reliability of the Actuate iServer and the interactivity of AJAX

Data Sources	Excellent
Output formats	Good
Application integration	Excellent
Performance	Excellent
Manageability	Excellent
Cost (invert)	Sufficient

(Asynchronous JavaScript and XML) into a unified Business Intelligence environment. The result is dynamic, interactive enterprise reports for any type of deployment and an ad-hoc web reporting environment that allows end-users and IT to collaborate and iterate on report definitions, effortlessly evolve report designs and dynamically craft interactive web reports.

4.2 Cognos 8 Business Intelligence

Cognos 8 Business Intelligence is a BI product with capabilities of reporting, analysis, scorecarding, dashboards, business event management and data integration, on a single, proven architecture. Cognos 8 BI delivers a simplified BI environment that improves user adoption, enables better decision-making, and serves as an enterprise-scale foundation for performance management. Cognos 8 BI architecture is built with Web services to deliver BI from a single extensible and flexible BI platform. Everything is zero-footprint and Web-based.

Data Sources	Good
Output formats	Good
Application integration	Excellent
Performance	Good
Manageability	Excellent
Cost (invert)	Sufficient

4.3 JasperReports 1.2.7 (iReport 1.2.6)

JasperReports is an open source Java reporting tool that has the ability to deliver rich content onto the screen, to the printer or into PDF, HTML, XLS, CSV, and XML files. JasperReports is written in Java and can be used in a variety of Java-enabled applications, including J2EE or Web applications to generate dynamic content. The main purpose of JasperReports is to help create page-oriented ready-to-print documents in a simple and flexible manner.

Data Sources	Satisfactory
Output formats	Good
Application integration	Satisfactory
Performance	Satisfactory
Manageability	Sufficient
Cost (invert)	Satisfactory

iReport is a visual report builder/designer for JasperReports written in java. iReport allows users to visually edit complex reports with charts, images, subreports, and more. iReport is integrated with JFreeChart, one of the most diffused open source chart libraries for java. The data to print can be retrieved through several ways including multiple JDBC connections, TableModels, JavaBeans, XML, etc.

4.4 JasperIntelligence 1.1.0

JasperIntelligence is the web platform project for JasperReports, iReport, JasperServer (business intelligence server designed for operational and departmental reporting and analytics), and JasperAnalysis. JasperIntelligence is an open source business intelligence platform from JasperSoft, providing common services like security and metadata management, and the capability to easily add additional functionality.

Data Sources	Good
Output formats	Good
Application integration	Good
Performance	Satisfactory
Manageability	Satisfactory
Cost (invert)	Sufficient

4.5 Eclipse BIRT

BIRT is an Eclipse-based open source reporting system for web applications, especially those based on Java and J2EE. BIRT has two main components: a report designer based on Eclipse, and a runtime component that you can add to your app server. BIRT also offers a charting engine that lets you add charts to your own application.

Data Sources	Sufficient
Output formats	Sufficient
Application integration	Satisfactory
Performance	Sufficient
Manageability	Sufficient
Cost (invert)	Good

4.6 Microsoft SQL Server 2005 Reporting Services (SRSS)

SSRS is a comprehensive and extensible reporting platform, which includes an integrated set of processing components, programmatic interfaces, and tools. Processing components are the basis for the multilayered architecture of SSRS and interact with each other to retrieve data, process layout, render, and deliver a report to a target destination. SSRS supports two categories of components:

Data Sources	Poor
Output formats	Satisfactory
Application integration	Satisfactory
Performance	Good
Manageability	Satisfactory
Cost (invert)	Excellent

1) Processors Ensure integrity of SSRS and supply an infrastructure that enables developers to add a new functionality (extensions). Processors itself are not extendable in this release of SSRS.

2) Extensions Assemblies that are invoked by processors and perform specific processing functionality, such as data retrieval. Developers can write custom extensions.

4.7 LGX Report

LGX Report is one of a family of web-based business intelligence applications created by LogiXML, Inc. LGX Report is used to design and generate web-based reports based on a wide range of data sources, such as Microsoft SQL Server, Microsoft Access, MySql, Cache and Oracle, as well other data sources accessible

Data Sources	Excellent
Output formats	Excellent
Application integration	Satisfactory
Performance	Good
Manageability	Good
Cost (invert)	Sufficient

through ODBC. The platform LGX Report hosted on is ASP.NET. The process of rendering the XML file to the report cannot be customized in the sense that you have no programmatic control over what is happening, but there is a lot of control over how the XML page is created to get some control over how a report looks.

4.8 MicroStrategy

The MicroStrategy 8 platform provides a solid business intelligence (BI) product for analytic and enterprise reporting. The offering provides strong OLAP capabilities with extended access to SAP BW cubes, along with strong administration and security capabilities and solid Microsoft Office integration capabilities. MicroStrategy includes an enterprise reporting component (Report Services) within the core product; however, limitations in data access lower the overall appeal of the

Data Sources	Excellent
Output formats	Good
Application integration	Good
Performance	Satisfactory
Manageability	Satisfactory
Cost (invert)	Satisfactory

production reporting mechanism. Overall, MicroStrategy is a strong performer in both enterprise and analytic reporting with a greater emphasis on analytic reporting.

4.9 Crystal Reports (BusinessObjects Enterprise BI)

BusinessObjects company has a very complex product: BusinessObjects BI (Business Intelligence). This product is integrated platform for data integration and visualization for enterprise.

BusinessObjects Enterprise XI - powers the management and secure deployment of specialized tools for reporting, query and analysis, performance management, and analytic applications on a proven, scalable, and open-services oriented architecture.

Data Sources	Excellent
Output formats	Good
Application integration	Good
Performance	Excellent
Manageability	Satisfactory
Cost (invert)	Satisfactory

4.10 Oracle Reports

Oracle Reports is the *enterprise reporting* component of Oracle's Business Intelligence (BI) offering. It enables an organization to convert data into information, and publish the information securely and reliably. Oracle Reports provides the tools to create reports in pixel-perfect printable format and to publish reports on the corporate Web site as true Web pages. Oracle Reports is an

Data Sources	Good
Output formats	Good
Application integration	Good
Performance	Good
Manageability	Satisfactory
Cost (invert)	Poor

award-winning solution that has successfully fulfilled the enterprise reporting needs of thousands of organizations for a decade and a half. Its extremely scalable and high-performance capabilities allow to publish reports to several thousand end users. It leverages Oracle Application Server Platform Security and Identity Management to make sure that the information is only available to authorized users. Furthermore, Application Programming Interfaces (APIs) documented in Reports Software Development Kit (RSDK), can be used to easily extend existing functionality or create completely new functionality to fit the business requirements.

4.11 Synaptris IntelliVIEW

IntelliVIEW is a reporting solution that allows users to create interactive and pre-formatted reports (simple, parameterized and scheduled reports) from all popular database (Oracle, DB2, MSSQL etc) and abstract data sources. Using IntelliVIEW Designer, report-creators can connect to databases and create rich, interactive reports without the need for complex programming.

IntelliVIEW Report Analyzer is used to view, analyze data, create charts, print and export reports to multiple formats, and distribute them through email.

Data Sources	Good
Output formats	Good
Application integration	Good
Performance	Satisfactory
Manageability	Satisfactory
Cost (invert)	Satisfactory

4.12 Applix TM1

The Applix company line of products called TM1. Basically, this is a MOLAP (multidimensional OLAP) solution as it uses linked hypercubes of data to analyze and to summarize large arrays of data in real time. TM1 applications are promoted by the company as a helper to financial professionals for consolidating of financial data and analyze this data. TM1 is based on OLAP (On-Line

Analytical Processing) technology which enables users to quickly view and understand large sets of complex business data. Analysts, managers and executives can view data across multiple dimensions and drill down into the specific data underlying those summaries. TM1 does all the calculating in RAM, providing much faster response times - up to a million times faster - compared to OLAP engines that store their data on a disk drive.

Data Sources	Excellent
Output formats	Good
Application integration	Satisfactory
Performance	Good
Manageability	Satisfactory
Cost (invert)	Satisfactory

5. Comparison analysis

In this paragraph are shown most perspective report engines. The main candidates for further research will be chosen next. In the conclusion the basic actions on risks minimization at a choice of report engines are considered.

5.1 Comparison matrix

The report engines comparison matrix is presented in the Appendix A.

5.2 General remarks about report engine comparison

First, we should note that all the reporting tools under consideration break up into two main categories:

- embeddable reporting engines, usually also including report design tools; and
- enterprise-class Business Intelligence solutions, usually including report engines and design tools *per se*, as well as analytic capabilities, server components for collaborative work, report scheduling, and integration with various business-specific applications.

The first category is represented here by JasperReports and BIRT, and the second includes all other products.

Both categories of products can be useful depending on specific project requirements, e.g. embeddable reporting engine might be the easiest solution when there is a need for the specific report-generation functionality with predefined set of templates, and the BI solution may serve as the basis for the enterprise-wide information portal that integrates with business-specific application data or serves them as portlets.

Therefore we will evaluate the two groups more or less separately.

5.3 Embeddable Engines

Of the two engines examined, JasperReports looks more mature and stable. It supports more output formats than BIRT, and the report generation component is more efficient and scalable.

Both engines are open source, but their further development might take differing courses: JasperReports is developed under the aegis of JasperSoft with the ultimate goal of inclusion to JasperIntelligence product, and BIRT is a part of Eclipse Foundation, thus emphasizing the development tools/platform side.

At this time we recommend using JasperReports as an embeddable Java reporting engine.

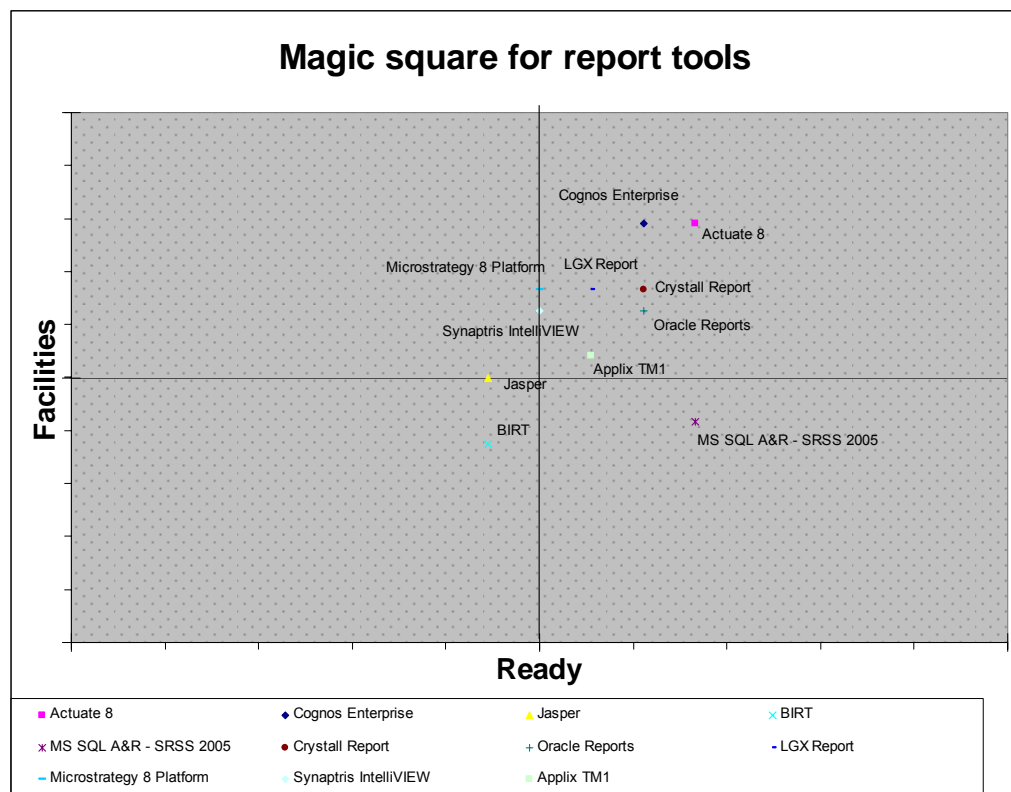
5.4 Business Intelligence solutions

To choose the winning solutions we did two sequential steps. First, we chose two aggregated criteria (described below), rated the solutions on these criteria, and plotted the results on the grid. Second, we filtered the products that are unsuitable for the customer environment.

The first aggregated criterion is «Readiness», meaning roughly the inverse of the effort needed to put it into production use, including (inverted) cost, manageability and

performance parameters. The second criterion is «Facilities», including all other parameters (such as data source support, application integration, output formats and templates support) plus manageability. Manageability is aggregated twice because it affects both solution readiness for production and the potential diversity of supported features.

Some of the products in this category, while being good and solid BI solutions, seem unsuitable to the customer's requirements. For example, MS Reporting Services only works with the data in MS SQL Server database and can be deployed in the context of SQL Server installation. While it can be accessed via web services interface, it's clearly unable to reach live data in Oracle and/or Sybase DB as well as be deployed in application servers of choice. Oracle Reports, on the other hand, works with Oracle data (as well as with other JDBC data sources, such as Sybase) and can be invoked from any Java application, but needs Oracle Application Server for deployment, which might add significant maintenance and support costs.



Looking at the plot we see that there are two clear leaders in this category – Actuate and Cognos, with Crystal Reports the close third. Both top solutions are mature and functionally rich, integrate easily with J2EE-based applications and Oracle database, and can be deployed in JBoss as well as WebLogic. The main Crystal Reports drawback is its limited scalability in the standalone server mode that requires more programming effort for embedding the engine in the business application.

Other products meriting consideration are Microstrategy (limited scalability, unclear pricing) and IntelliVIEW (relatively poor ready-to-use capabilities, no OLAP support). JasperIntelligence and LGX have even less functionality and we consider them too poor for further examination. Applix TM1 seems pretty good in terms of performance and functionality, including strong OLAP support, but it seems that much of the functionality is implemented on the Windows-based client (unfortunately the public documentation lacks much technical detail) and the pricing is not available at the moment.

The choice between the leaders is more complicated. They are mostly functionally equivalent, but nevertheless might differ significantly in specific areas; e.g. Cognos pricing is more convoluted than Actuate's, and for some licensing arrangements (user/server count, configuration) Cognos might be as much as twice more expensive than Actuate; ad-hoc query building capabilities of Cognos are more flexible and user-friendly than Actuate's, though Actuate provides powerful e.Spreadsheet component that allows the user to play with dynamic data right in the Excel sheet.

All in all, we suggest to use Actuate as business intelligence solutions based on Customer defined criteria with taking into account their priorities.

Appendix A. Comparison table

Table 1 Comparison table (#1)

#	COMPARISON CRITERIA	Actuate 9 Business Intelligence	Cognos 8 Business Intelligence	JasperReports 1.2.7 (iReport 1.2.6)	JasperIntelligence 1.1.0	Eclipse BIRT 2.1.1	MS SQL A&R - SRSS 2005
1	App server support						
1.1	JBoss	Y (no support)	Y	Y (embeddable Java)	Y	Y	not applicable
1.2	WebLogic	Y	Y	Y (embeddable Java)	N	Y	not applicable
2	DB support						SQL Server
2.1	Oracle	Y	Y	Y (JDBC, Hibernate)	Y (JDBC, Hibernate)	Y (JDBC)	not applicable
2.2	Sybase	Y	Y	Y (JDBC, Hibernate)	Y (JDBC, Hibernate)	Y (JDBC)	not applicable
3	Report formats						
3.1	output DOC/RTF	Y (RTF)	Y (RTF)	Y (RTF)	Y (RTF)	N	N
3.2	output XLS	Y	Y	Y	Y	N	Y
3.3	output HTML	Y	Y	Y	Y	Y	Y
3.4	output PDF	Y	Y	Y	Y	Y	Y
	output ODS	N	N	N	N	N (planned)	Y
3.5	templates DOC/RTF	N	N	N	N	N	N
3.6	templates XLS	Y	Y	N	N	N	N
3.7	formulas support in XLS	Y	N	N	N	N	N
3.8	macros support for DOC, XLS	N	N	N	N	N	N
3.9	p/w protected fields in DOC	N	N	N	N	N	N
3.10	images in report	Y	Y	Y	Y	Y	Y
3.11	charts in report	Y	Y	Y	Y	Y	Y



#	COMPARISON CRITERIA	Actuate 9 Business Intelligence	Cognos 8 Business Intelligence	JasperReports 1.2.7 (iReport 1.2.6)	JasperIntelligence 1.1.0	Eclipse BIRT 2.1.1	MS SQL A&R - SRSS 2005
4	Visual tool for report creation	Y	Y	3rd-party (iReport etc.)	3rd-party (iReport etc.)	Y	Y (Workgroup, Standard, Enterprise)
5	Ad-hoc reporting support	Y	Y	N	Y	N	Y (Enterprise)
6	OLAP support	Y	Y	N	Y	N	Y
7	Report generation						
7.1	performance	Very high, scalable	High, scalable	High, scalable	High, scalable	Medium, report in mem	High, scalable
7.2	scheduling capabilities	Y	Y	Programmatic	Y	N	Y
7.3	parallel query execution	N	?	N (can be programmed explicitly)	N	N	Y
8	J2EE/web application integration support	Y		Y	via JasperReports	Y	
8.1	set report parameters	Y	Y	Y	N	Y	not applicable
8.2	start report generation	Y	Y	Y	N	Y	not applicable
9	Open source	N	N	Y	Y	Y	N
10	Product pricing	\$500/named user	Avg 300\$ per user	N/A	N/A	N/A	\$3,899 - \$24,999 per processor or \$739 with 5 CALs - \$13,969 with 25 CALs per server
11	Support pricing	?	10000\$ for SDK	N/A	N/A	N/A	?

Table 2 Comparison table (#2)

#	COMPARISON CRITERIA	Crystal Reports XI	OracleReports 10g Release 2	LGX Report v7.4.0	MicroStrategy Platform 8	Synaptris IntelliVIEW v3.5	Applix TM1 v9.0
1	App server support						
1.1	JBoss	Y (own server)	N (runs on OracleAS)	N	N	Y (J2EE compatible)	Y (J2EE compatible)
1.2	WebLogic	Y (own server)	N (runs on OracleAS)	N	Y (portal integration)	Y (J2EE compatible)	Y (J2EE compatible)
2	DB support						
2.1	Oracle	Y	Y	Y	Y	Y	Y
2.2	Sybase	Y	Y (JDBC)	Y	Y	Y	Y
3	Report formats						
3.1	output DOC/RTF	Y	Y	Y	Y	Y	Y
3.2	output XLS	Y	Y	Y	Y	Y	Y
3.3	output HTML	Y	Y	Y	Y	Y	Y
3.4	output PDF	Y	Y	Y	Y	Y	Y
	output ODS	N	N	Y	N	N	N
3.5	templates DOC/RTF	N	N	N	N	N	N
3.6	templates XLS	N	N	N	N	N	Y
3.7	formulas support in XLS	N	Y	N	Y	N	Y
3.8	macros support for DOC, XLS	N	N	N	N	N	N
3.9	p/w protected fields in DOC	Y	N	N	N	N	N
3.10	images in report	Y	Y	Y	Y	Y	Y
3.11	charts in report	Y	Y	Y	Y	Y	Y
4	Visual tool for report creation	Y	Y	Y	Y	Y	Y
5	Ad-hoc reporting support	Y	Y	Y (LGX Ad-hoc)	Y	N	Y
6	OLAP support	Y	Y	Y (LGX OLAP)	Y	N	Y
7	Report generation						

#	COMPARISON CRITERIA	Crystal Reports XI	OracleReports 10g Release 2	LGX Report v7.4.0	MicroStrategy Platform 8	Synaptris IntelliVIEW v3.5	Applix TM1 v9.0
7.1	performance	Very High, Scalable	High, Scalable	?	High, scalable	High	High, scalable
7.2	scheduling capabilities	Y	Y	?	Y	Y	Y
7.3	parallel query execution	N	N	?	Y	N	Y
8	J2EE/web application integration support	Y	Y (Java client, Web Services)			Y	Y
8.1	set report parameters	Y	Y	Y	Y	?	Y
8.2	start report generation	Y	Y	Y	Y	Y	Y
9	Open source	N	N	N	N	N	N
10	Product pricing	670 USD - developer edition (3211 - 5 users); 7500 USD - Crystal Report Server 5 concurrent accesses; + 3129 USD - Advanced developer	20,000USD per processor	Free (LGX Report and LGX OLAP Express), \$995 - \$9,995 per processor (LGX Ad-Hoc)	?	Have not information	?
11	Support pricing	195 USD for one product (on-line and phone calls); base offline support - cost free	4,400 USD for software update license and support (5 years)	\$749 - \$4,999	?	Have not information	?