



An Introduction to the JasperSoft Business Intelligence Suite

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Introduction

The JasperSoft Business Intelligence Suite is a comprehensive Business Intelligence (BI) suite that provides robust reporting, report server, data analysis, and data integration for organizations that want to make faster, better business decisions. It is available in two editions: Open Source and Professional. This white paper introduces the capabilities and components of the suite, and helps readers understand which edition may best meet their business needs. You will learn:

- Why JasperSoft built a Business Intelligence suite
- The key capabilities of the JasperSoft Business Intelligence Suite
- Which component products are included in the JasperSoft Business Intelligence Suite
- How to choose the solution that meets your needs

JasperSoft's Vision: BI for Everyone

According to Forrester Research, enterprises that have deployed Business Intelligence (BI) are now looking for ways to lower overall reporting costs, get BI into the hands of more decision-makers, and integrate more tightly with IT infrastructure.¹ However, BI has been such a massive and expensive undertaking that only large organizations could afford to deploy it in the first place.

JasperSoft's vision is to transform Business Intelligence so that is available for everyone—for organizations large and small, for everyone in the organization, and for administrators of both Open Source and proprietary infrastructures. With a new approach, Business Intelligence can become part of the very fabric of every business.

This vision grew in part from the discovery that the popular JasperReports reporting library is used to embed complex reports into existing applications. Even with its support for handling complex reporting needs, however, JasperReports has its limits. Many organizations need cost-effective ways to fully extend reporting, data analysis, and data integration to the entire organization.

The JasperSoft Business Intelligence Suite, built on top of JasperReports and other open source components, developed from this discovery. Working with existing customers and veteran BI software practitioners, JasperSoft determined that the JasperSoft Business Intelligence Suite must be:

- Not just a platform, but a ready to use **stand-alone BI suite**.
- Seamlessly **embeddable** in existing business applications, such as an ERP or CRM application.
- **Functional**, but not so feature-heavy that it overwhelms average users.
- **Cost-effective** so that it can be deployed across the entire organization.
- Able to leverage **existing IT infrastructure** components, such as open source and proprietary servers and services.
- Offered under **open source and commercial terms** to meet the needs of different organizations (this is also referred to as a dual-license model).

The underpinning technologies and licensing models are not new. JasperSoft's approach to embeddable software and dual-licensing, however, is both refreshing and practical.

Embeddable BI is the only way to broaden the benefits of BI and improve user experiences. By embedding JasperSoft solutions into applications and processes that users rely upon

¹ Gile, Keith. "The Forrester Wave: BI Reporting and Analysis Platforms, Q1 2006." Forrester Research: February 8, 2006.

every day, organizations can truly make better decisions more quickly and with less expense.

The dual-license business model (open source and commercial licensing) is the foundation for high-quality and sustainable development. Everyone contributes in some way to the maintenance, expansion, and evolution of the JasperSoft Business Intelligence Suite. Users who abide by the open source license, for example, contribute their modifications back to the community. Users who purchase a commercial license contribute funds that support product development, in addition to compensating JasperSoft for its additional obligations.

From both a technical and a business perspective, the JasperSoft Business Intelligence Suite is BI for Everyone.

JasperSoft Capabilities

The JasperSoft Business Intelligence Suite brings sophisticated reporting, interactive analysis, and shared services such as security, repository, and scheduling to everyone from casual business users to business analysts and executives.

Fundamentals

- Seamless embeddability using public Java APIs and Web services
- Extensibility through open source
- External authentication
- Role-based authorization
- Security
- Single Sign-On
- Internationalization
- Configurable and replaceable user interfaces

Managed Reporting and Analysis

- Interactive, parameterized report generation
- Shared repository
- Scheduling
- Automated report distribution
- Compliance snapshots
- Managed ad-hoc data access

Operational Reporting

- Graphical report design tool
- Pixel-perfect output to printer, PDF, HTML, XLS, CSV, RTF, TXT, and XML file formats
- Sub-report inclusion for complex reports and dashboards
- Multiple data sources within a single report
- Custom calculations and variables
- Unlimited report size / report virtualization

Interactive Analysis / OLAP

- Data exploration: Drill-down, roll-up, "slice-and-dice," pivot, filter
- Data visualization: multidimensional tables and charts
- Links to detailed reports and other online resources
- Standard XML/A data access protocol and MDX query language

We needed to provide a low-cost flexible reporting solution to our client which was to form part of a large data collection product. In our reporting search, JasperReports stood out in terms of performance, ease of development, easy-to-understand code and obviously, cost. The product went into production with more than 50K hits per day and with more than 150 concurrent users.

– Cognizant – A Leader in Global IT Services – 23,000 consultants

JasperSoft Component Products

The JasperSoft Business Intelligence Suite can be acquired and installed quickly and easily. The JasperSoft Business Intelligence Suite includes several component products for operational reporting, report server (e.g., scheduling and shared services), and interactive analysis (OLAP).

- JasperReports – Reporting Library
- JasperStudio – Graphical Report Designer
- JasperServer – Interactive Reporting Server
- JasperAnalysis – Interactive Data Analysis / OLAP

The JasperSoft Business Intelligence Suite component products are described below.

JasperReports – Reporting Library

JasperReports is a Java reporting library. The JasperReports library is the engine that processes and displays data in comprehensible, pixel-perfect printouts and Web reports. JasperReports is useful for all types of applications, ranging from routine invoice printing to sophisticated executive dashboards.

Its power, performance, and accessibility make it one of the most widely used reporting products in the world. JasperReports is deployed worldwide, and is redistributed in many open source and commercial applications.

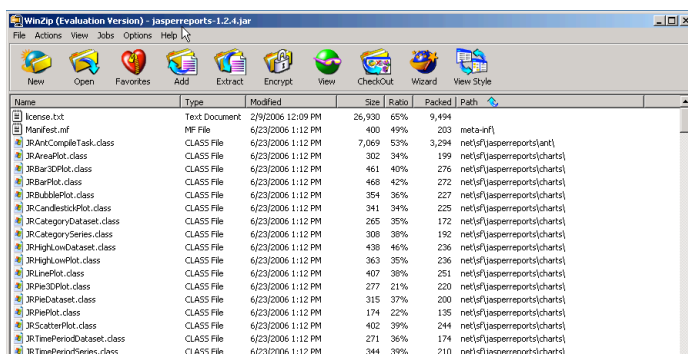


Figure 1: JasperReports is a reporting library. It provides the reporting engine for many applications.

QuickFacts

JasperReports:

- Is a Java reporting library.
- Is the reporting engine embedded in the JasperSoft Business Intelligence Suite.
- Open Source edition can be downloaded from <http://www.jasperforge.org>.
- Fully supported Professional and Developer editions available.

JasperStudio, Powered by iReport – Graphical Report Designer

JasperStudio (the Open Source edition is called iReport) is a graphical report designer for JasperReports and JasperServer. JasperStudio simplifies the process of accessing data sources, defining and designing the report layout, and compiling reports. JasperStudio is typically used by report developers to design reports that others access through the JasperServer or through other business applications. Power users and developers can also create their own reports using JasperStudio.

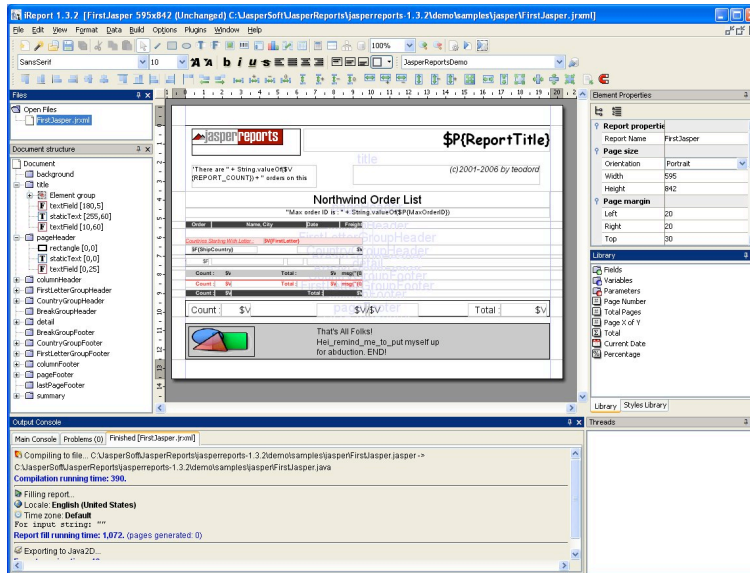


Figure 2: JasperStudio is a graphical report designer that makes it easy to develop and design reports for the JasperSoft Business Intelligence Suite.

QuickFacts

JasperStudio:

- Is used by report developers and power users.
- Exposes and makes it easier to use the JasperReports library.
- Integrates with JasperServer to allow report developers to centrally manage JasperReports resources.
- Open Source edition (iReport) can be downloaded from <http://www.jasperforge.org>.
- Available in Professional and Developer editions with JasperReports.

JasperServer – Interactive Reporting Server

JasperServer is a stand-alone and embeddable ad hoc and interactive reporting server, enabling delivery of mission critical information on a real-time or schedule basis to the Web, to the printer, or to a variety of file formats. Through its support for easy to use self-service Web 2.0 interactive reporting, JasperServer enables users to meet their own reporting needs, without burdening IT or software application developers. JasperServer also provides a common framework infrastructure on top of which reporting, data analysis, and data integration products can be made available. JasperServer provides the following shared services:

- **Security services:** Built-in authentication, or single sign-on integration with external authentication systems such as LDAP.
- **Repository services:** Robust and scalable secure object storage for a broad range of content types.
- **User interfaces:** All out-of-the-box user interfaces applications can be easily customized or replaced using the underlying public integration interfaces.
- **Scheduling services:** Built-in scheduling service provides for offline execution of large or periodic tasks such as standard reports.

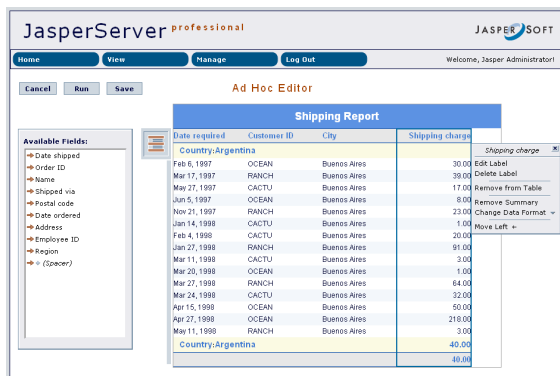


Figure 3: JasperServer manages ad hoc reporting, shared reports, analysis, user access, and other shared services, such as security and add-on modules.

QuickFacts

JasperServer:

- Provides intuitive web-based ad hoc reporting for business users.
- Provides a friendly Web interface for business users to access and interact with reports and analyses.
- Is an interactive report server.
- Can schedule, run, and distribute reports to users and groups.
- Secures reports and analyses based on users and roles.
- Manages shared resources, such as report definitions, images, data source definitions, and so on.
- Provides historical report versioning and auditing for regulatory compliance.
- Can be embedded in (used by) other Web applications.
- Open Source edition can be downloaded from <http://www.jasperforge.org>.
- Available in Professional edition.

JasperAnalysis – Interactive Data Analysis / OLAP

JasperAnalysis is a ROLAP (Relational OnLine Analytical Processing) server and end-user application. It allows users to explore trends, patterns, anomalies, and correlations in data. JasperAnalysis does the work that would be too difficult or too expensive to perform using standard SQL-based reporting.

The primary indicator for when JasperAnalysis is needed is the word “by,” as in, “I want to see sales BY state and year” or “deal size and discount rate BY brand.” Another indicator is when JasperReports are exported to spreadsheets (the XLS file format). While sometimes that means that the layout or formatting may need manipulation, if data leaves a report and ends up in a spreadsheet, it’s usually because additional analysis is needed.

JasperAnalysis includes a back-end server component and a user-facing component.

The JasperAnalysis server component does all the back-end “heavy lifting.” JasperAnalysis server uses semantic metadata mappings to calculate aggregations for large datasets broken down by groups. For example: “sales by state; sales by year; and sales by state and year.” JasperAnalysis server uses the same metadata mappings to assign hierarchical associations, such as “yearly totals can be broken down by quarter,” and “sales by account manager can roll up to region.” The resulting data “cube” definitions are stored and secured in the shared repository. Calculated values are cached by JasperAnalysis server for fast retrieval when users interact with the data.

The JasperAnalysis user-facing component allows business users to interact with the data cubes. It is a Web-based application that allows non-technical users to “slice-and-dice,” pivot, filter, chart, drill-down, or roll-up data. JasperAnalysis allows users to visualize data as tables and charts; visualization capabilities can also be extended to other formats, such as gauges and maps.

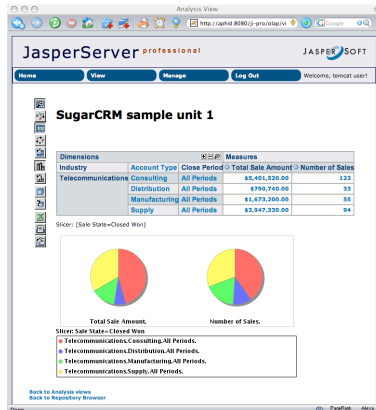


Figure 4: JasperAnalysis provides information and tools that accelerate and improve decision-making.

QuickFacts

JasperAnalysis:

- Is a ROLAP (Relational Online Analytical Processing) server and Web front-end for business users.
- Extends JasperServer with multi-dimensional analysis capabilities, such as pivot, drill-down, and so on.
- Complements JasperReports by allowing users to manipulate data beyond the limitations of SQL based reporting.
- Includes graphical interfaces for OLAP schema design and OLAP view design.
- Open Source edition can be downloaded from <http://www.jasperforge.org>.
- Available in Professional edition.

JasperETL – High Performance Data Integration

JasperETL is a flexible, intuitive, and powerful open source tool for ETL (Extraction, Transformation, and Loading of data). You can graphically design, schedule, and execute data movements and transformations for business intelligence projects, for example to load an Operational Data Store (ODS), Data Mart, or Data Warehouse.

When used as part of the JasperSoft Business Intelligence Suite, organizations can develop, manage, and document data integration processes for more accurate, more comprehensive reporting and online analytical processing (OLAP) with JasperReports, JasperServer, and JasperAnalysis. In common with all JasperSoft Business Intelligence products, JasperETL can also be used stand-alone to provide comprehensive ETL capabilities for other applications and systems.

Because JasperETL is based on open source, you get the best of both worlds: contributions from a large and active open source community, and commercial support, professional services and training from JasperSoft. JasperETL is available in Professional and Open Source editions.

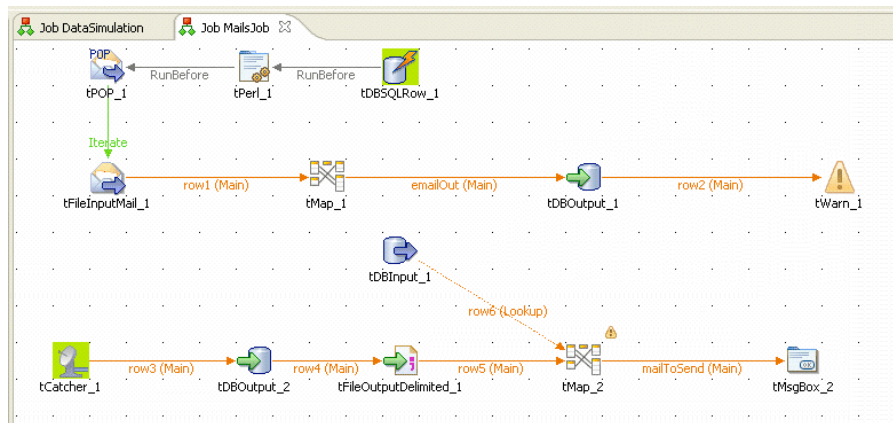


Figure 5: JasperETL provides an intuitive graphical user interface for creating business and technical extract-transform-load (ETL) jobs.

QuickFacts

JasperETL:

- An Eclipse RCP-based platform, with fully “drag & drop” enabled development GUI
- Perl, Java and SQL code generation
- Graphical interfaces for: Business Modeler, Job Designer, Transformations, Code viewer, Metadata management, Job execution, Job scheduling
- Open Source edition can be downloaded from <http://www.jasperforge.org>.
- Available in Professional edition.

How the JasperSoft Business Intelligence Suite Fits in Your Organization

Enterprises that want a stand-alone BI solution can download JasperSoft installers for Windows or UNIX servers. The installed solution is complete and enterprise-ready out of the box.

The JasperSoft Business Intelligence Suite can also be embedded in whole or in part into existing business applications. It is a pure Java application that can be dropped into a Web application container as a WAR (Web Application Archive) file. Other Java applications running in the same Web application container can access the JasperSoft Business Intelligence Suite through published APIs. Non-Java applications, such as those written in PHP or Perl, can access the JasperSoft Business Intelligence Suite through a Web services connector that is included.

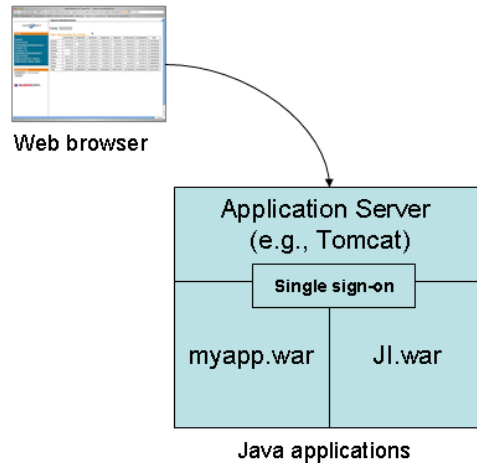


Figure 5: The JasperSoft Business Intelligence Suite can integrate with business applications using the comprehensive set of public Java APIs.

The JasperSoft Business Intelligence Suite is also easily extended so that new modules and engines can inherit your application’s look and feel and share the same metadata repository.

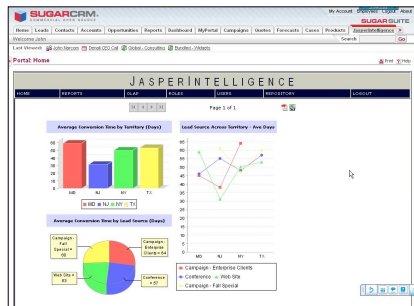


Figure 6: In this example, JasperSoft uses Web services to add managed, secure reporting and analysis capabilities to the SugarCRM application.

Selecting the Solution that is Right for You

JasperSoft solutions are provided in two editions: Open Source and Professional. The primary differences between the two are the rights and obligations defined in the license agreements and value-added services that are bundled with the Professional edition.

Both editions share the same code base, making it very easy to go from Open Source to Professional if your business needs change. Professional editions also include a small number of commercial extensions, such as extended platform support and Web-based, ad hoc data access.

The following key questions will help you determine whether the Open Source or Professional edition is more appropriate for your needs:

	No	Yes
1. Platform Support: Do you need certified support for your operating system, application server, or database platforms?	_____	_____
2. Indemnification: Do you need warranties and indemnification that are typically not available with open source software?	_____	_____
3. Release Lifecycle: Do you need support for older releases because you make infrequent changes to production systems?	_____	_____
4. Distribution Rights: Do you want the right to publicly release modifications or derivative works based on JasperSoft solutions without being bound by the GNU GPL terms and conditions?	_____	_____
5. Support: Do you need the highest level of support for mission-critical or production applications?	_____	_____

If you answered "yes" to any of the questions above, the Professional edition may be the best choice for your organization. If you're still not sure, read the following sections to learn more.

Platform Support

Each release of the Open Source edition is packaged to run on the following platforms:

Operating Systems:	Linux and Microsoft Windows
Web/application servers:	JBoss or Apache Tomcat
Databases:	MySQL
Directory provider:	Hibernate

Professional editions provide additional support for (please contact JasperSoft for most current list of certified platforms):

Operating Systems:	IBM AIX, Sun Solaris, Red Hat Enterprise Linux (RHEL), Novell SUSE Linux, Fedora Enterprise Linux, Mac OS X, Debian Linux, HP-UX, rPath Linux
Web/application servers:	IBM WebSphere, BEA WebLogic, Oracle Application Server (OAS)
Databases:	Oracle, IBM DB2, Microsoft SQL Server, PostgreSQL, EnterpriseDB, Ingres
Directory provider:	LDAP, IBM Tivoli, Microsoft Active Directory

Note that testing and packaging Professional editions on proprietary systems takes additional resources and time. It is one of the factors that influence the cost of JasperSoft Professional Editions and the frequency of the release cycle.

Indemnification

Indemnification and warranties are significant benefits usually offered in commercial software licenses, and usually not offered in open source licenses. Indemnification and warranties are of greatest concern to large organizations, though individuals may also have an interest in these legal protections.

The GNU GPL, which is offered with the Open Source edition, does not provide protections against claims that the software may infringe upon another’s intellectual property rights. This matters because a patent holder, for example, could claim that JasperSoft and users of the JasperSoft software infringe the patent-holder’s intellectual property rights. GNU GPL also does not provide any warranties; if the software is found to be defective, the copyright owner (in this case, JasperSoft), is not obligated to fix the software.

The Professional edition provides indemnification and warranties that are typical of commercial software licenses. Customers should review the license agreements and assess their tolerance for risk (legal and operational).

Release Lifecycle

Open Source editions are frequently updated with new features and fixes at www.jasperforge.org. Individuals, software developers, and some organizations prefer software updates as soon as they're available. Since this type of customer embraces the latest code, older Open Source versions are not supported (contact JasperSoft for details).

I used to be an open source skeptic, but we have had nothing but great experience with open source software that we have employed. JasperReports has been thoroughly stable and effective since we first started using it, and the brisk pace of development means that new functions are made available frequently.

-- Harland Financial Solutions (6000+ customers, \$1B+ revenue)

The Professional editions are updated on regular intervals at a private customer portal. This is to accommodate organizations that prefer a managed release cycle with more changes rolled up into each release. This is to better manage the effort required to integrate changes to production environments. This type of customer updates less frequently, and relies upon the software for mission-critical or production systems. For this reason, older versions of the Professional edition are supported (contact JasperSoft for details).

Making the most of dual-license. Savvy organizations that run the Professional edition routinely download and test the Open Source interim releases in lab environments. This allows them to preview features that will be rolled into the Professional edition, reduces the effort required to do final testing on the Professional edition, and allows them to roll out to production more quickly and with greater confidence.

Distribution Rights

The Open Source edition is covered by the GNU General Public License (GPL). The right to freely use, modify, and redistribute software is fundamental to the GNU GPL agreement. Those who abide by it can do whatever they wish with the Open Source edition for their own organization's use. However, if you intend to release modifications or embed the products in a publicly available application, the entire work must be contributed to the open source community using the same GNU GPL. This is a form of professional courtesy that ensures that the original copyright holder (JasperSoft) does not end up competing against a variation of the original work. The contributions can also be regarded as a form of compensation for the right to freely use the original work.

The Professional edition is covered by a JasperSoft commercial license (as the copyright holder, JasperSoft has the right to release the same software under different terms). JasperSoft may allow organizations to distribute modifications or derivative works under commercial terms. In this case, customers are no longer bound by the GNU GPL, and instead agree to terms in the JasperSoft commercial license.

Still not sure? See which answer fits your organization best.

Do you plan to modify the source code or embed the software in your own application?		
No, I will use the software stand-alone without modifying the code or embedding it in another application or service.	→	GNU GPL OK
Yes, I might modify the code or embed the software in another application or service for my organization's internal use only.	→	GNU GPL OK
Yes, I will contribute modifications or any works that include the software back to the open source community using the GNU GPL open source license.	→	GNU GPL OK
Yes, I will include the software in a commercially distributed product or service. I do not want to license my final application or service with GNU GPL open source license.	→	You may require a commercial license from JasperSoft.

Also see <http://www.gnu.org/licenses/gpl.txt> or the license that accompanied your copy of the software.

Support

Everyone is free to contribute to and receive technical assistance through the JasperForge online communities at www.jasperforge.org. Individuals and organizations that use Open Source editions can also purchase professional technical support on a per-incident or subscription basis. The options are summarized below.

The Professional edition includes a yearly renewable support plan of your choosing. Since a subscription-based plan is included with the Professional edition, incident-based support is not necessary. Gold and Platinum support plans are only offered to Professional edition customers. It offers severity-based response times and other commitments that are important when managing mission-critical and production implementations.

	Per Incident	Silver	Gold	Platinum
Open Source	✓	✓	Not offered	Not offered
Professional	Not applicable	✓	✓	✓

Note: the subscription fees vary for Open Source and Professional editions. For more information, go to http://www.jaspersoft.com/ss_overview.html.

Why JasperSoft?

JasperSoft is the leading supplier of commercial open source Business Intelligence solutions. JasperSoft software provides on-demand and real-time information delivery for mission-critical applications, such as auditing and reporting, customer self-service, compliance management and systems performance and tuning management.

The JasperSoft dual-licensing business model broadens the market for Business Intelligence and creates the foundation for high-quality, sustainable development. JasperSoft's approach to embeddable software extends Business Intelligence to reach more users. This makes it possible for organizations to achieve higher returns from their investments and make better decisions, faster.

JasperSoft's strong technology and ease of integration also stimulates a strong partnership community. The JasperSoft Business Intelligence Suite is already integrated with products from innovative companies such as Novell, SalesForce.com, SpikeSource, Ingres, and SugarCRM. Additional partners include BEA, IBM, Oracle, Sun Microsystems, Eclipse Foundation, EnterpriseDB, Redhat, JBoss Open Source Federation, and MySQL. For referrals to JasperSoft preferred and certified Systems Integrators, visit http://www.jaspersoft.com/pa_partners.html.

Conclusion

JasperSoft is the market leader in open source business intelligence (BI). With more than two million downloads worldwide and more than 6,000 commercial customers in 81 countries, JasperSoft offers the most widely used open source business intelligence software in the world. The JasperSoft Business Intelligence Suite is comprised of an interactive reporting server, graphical and ad hoc report design interfaces, OLAP analysis, an ETL data integration engine, and a Java reporting library for scalable small, medium, and large enterprises, for use as either stand-alone or embedded business intelligence applications. JasperSoft is based in San Francisco and is backed by leading venture capital firms Morgenthaler Ventures, DCM, and Partech International. More information is available at www.jaspersoft.com and www.jasperforge.org.

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