
crystalreports.com **Information Security**

- ▶ *Secure Information on Demand with
crystalreports.com*

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Audience: Customers interested in the security aspects of the crystalreports.com service

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Introduction

crystalreports.com Security: World-Class Security for Your Data

Information security tops the list of concerns for nearly every organization. You need to share important and often sensitive information—internally among employees as well as externally with customers, partners, and suppliers. Effectively and safely sharing data in a secure manner gives organizations a competitive advantage, helping them make better use of information assets while minimizing the risk of exposing critical information. We built crystalreports.com using the highest possible security mechanisms and controls—including multiple firewalls, data encryption, and password protection—to ensure your data is secure yet sharable. All this security is accomplished while presenting users with a simple and intuitive interface—freeing users to focus on analyzing the data with the comfort of knowing their information is being maintained securely.

At crystalreports.com, we know security is important to you—that’s why security is our top priority. crystalreports.com provides state-of-the-art security to ensure your data is never compromised. We devote significant resources to continually develop our world-class security infrastructure. The result is security and privacy for your data.

With crystalreports.com, you enjoy all the protection and peace of mind that our security infrastructure can provide:

- ▶ Experienced, professional engineers and security specialists dedicated to round-the-clock data and systems protection
- ▶ Implementation of proven, up-to-date security technologies—including proprietary architecture developed for crystalreports.com
- ▶ Ongoing evaluation of emerging security developments and threats
- ▶ Complete redundancy throughout the entire crystalreports.com online infrastructure
- ▶ Total commitment to a secure, scalable, and reliable system

Audience

This white paper is designed for anyone who has questions regarding the information security procedures Business Objects employed when designing crystalreports.com.

Purpose

In this white paper, we outline the many levels of security that ensure your data is secure—allowing your organization to share critical information safely. You gain an understanding of how we ensure the safety of your organization’s data within crystalreports.com.

crystalreports.com Overview

An on-demand business intelligence (BI) solution used for reporting, crystalreports.com allows organizations to securely share information inside and outside the organization. crystalreports.com uses the power of Crystal Reports® XI to access and deliver information from any data source.

With crystalreports.com, you have the choice of two service levels—basic and premium. Basic service is free with your purchase of Crystal Reports XI. Our premium service is a subscription service that builds upon the basic service by adding enhanced features like multiple content types, additional security controls, and scheduling.

There are two user roles in crystalreports.com—publishers and viewers. Publishers own their respective report spaces. Viewers are invited by publishers and are allowed read-only access to the publisher’s report space. Read below for more details about publisher and viewer security.

Built on BusinessObjects XI Industry-Leading Technology

Built using BusinessObjects™ XI, crystalreports.com enables your organization to take advantage of the industry’s leading platform for reporting. BusinessObjects XI contains built-in security features that thousands of customers use to securely manage and share data. Living with the most extreme data security requirements, our customers trust and depend on BusinessObjects XI to deliver information in a secure fashion.

Service Features

Key service features you receive with crystalreports.com include:

Standard team structure to manage the service on an ongoing basis

- ▶ Team of experts staffed or on-call 24/7
- ▶ Proactive monitoring with automated alarming and alerting

State-of-the-art hardware and software infrastructure

- ▶ HP ProLiant blade servers with full fault-tolerance
- ▶ Clustered hardware and software—ensuring high availability

Data center facility and bandwidth

- ▶ Housed in OpSource’s world-class data center facility
- ▶ Redundant IP connections via multiple service providers
- ▶ Proven success in hosting and operations with OpSource

Best-in-class security architecture

- ▶ Redundant firewalls and intrusion detection/prevention
- ▶ Proactive security processes—executed on a regular basis
- ▶ SAS 70 Type II compliance

Comprehensive disaster recovery solution

- ▶ Daily backup of data
- ▶ Offsite storage of critical files
- ▶ Site disaster recovery contingency plan

Hosting Service Security Details

crystalreports.com is as secure as any of the leading online financial services companies. Configured by experts and systematically tested before going into production, our security infrastructure gives you proven, up-to-date firewall protection, intrusion detection systems, Secure Socket Layer (SSL) encryption, and other security technologies.

Physical Security

Our production equipment is located within OpSource's professionally managed facility, which provides 24/7 physical security, redundant electrical generators, redundant cooling systems, and backup equipment designed to keep servers continually up and running.

Perimeter Defense

Our network perimeter is protected by multiple firewalls and monitored by intrusion detection systems from industry-leading security vendors. In addition, crystalreports.com monitors and analyzes firewall logs to proactively identify security threats.

Data Encryption

crystalreports.com uses the strongest encryption products to protect your data and communications, including 128-bit VeriSign SSL Certification. The padlock icon in the browser lets you know your data is fully shielded from unauthorized access while in transit.

User Authentication

To access crystalreports.com, you need a valid username and password combination. User authentication details are encrypted via SSL while in transmission.

Application Security

Our robust application security model prevents crystalreports.com customers from accessing other customers' data—ensuring only authorized users can access your organization's information.

Internal Systems Security

Inside perimeter firewalls, the systems are safeguarded by network address translation (NAT), port redirection, IP masquerading, nonroutable IP addressing schemes, and more. For security purposes, we do not publicly detail the specific configuration of these features.

Operating System Security

crystalreports.com enforces tight operating system-level security by using a minimal number of access points to all crystalreports.com production servers. We protect all operating system accounts using strong passwords. crystalreports.com maintains support for all operating systems at each vendor's recommended patch levels for security. We further strengthen operating system security by disabling and/or removing any unnecessary accounts, protocols, and processes.

Database Security

Whenever possible, for additional security, we recommend controlling database access at the operating system and database connection level. Access to production databases is restricted to a limited number of points.

Reliability and Backup

Network components, SSL accelerators, load balancers, web servers, and application servers are configured in a redundant configuration. Databases storing customer data are served by clustered database servers for redundancy and fault-tolerance. Customer data is stored on enterprise-class disk storage using a redundant array of inexpensive disks (RAID) and multiple data paths. Data hosted on crystalreports.com is protected against loss by the OpSource Optimal On-Demand backup process. This process extracts, compresses, encrypts, and pushes the backup data to the vault securely via the internet. The vault authenticates the data and either does a full backup or delta (partial) backup, depending on our schedule. We employ two methods of protection—BRTTP and encryption. BRTTP is Backup Restore Transport Protocol that has added network connectivity resumption support to the protocol. This means that, in the event of any kind of network failure, a backup and restore task will recover and resume its functions from where it left off. crystalreports.com backup and restore sessions are secured using strong 128-bit encrypted secure sessions.

Disaster Recovery

If our production facilities are rendered unavailable, crystalreports.com is poised to use a geographically remote disaster recovery facility. Our disaster recovery plans are in place, and we test them regularly.

Protecting Your Data Stream

Your data travels between your PC and your report space on crystalreports.com through the public internet using a 128-bit encrypted secure session. This security feature protects report publishers and viewers alike—whether they are using the crystalreports.com basic or premium service.

The crystalreports.com hardware load balancers reside in a secure perimeter network called a DMZ (demilitarized zone) with tightly controlled access. Our DMZ is a secure network created between two specially configured network security devices called firewalls. The DMZ solution allows us to provide you with fast and secure access to information.

Our load balancers perform encryption and decryption of your data—keeping it safe and secure when working on the internet. From the DMZ, your data is transported safely into the crystalreports.com application.

Two separate firewall layers protect the crystalreports.com application from the public internet. In our application, we employ user-level security to control access into the reporting infrastructure. By using reverse-proxy for customer requests, we securely allow application-only access through the third firewall layer into the reporting infrastructure. User sessions are not allowed past the third firewall layer.

The reporting infrastructure is built upon BusinessObjects XI, and uses native BusinessObjects XI security to build hard partitions between the separate user report spaces hosted on crystalreports.com. This means your data never mixes with data from other users or other organizations. Application security as it relates to report spaces is detailed further in this document.

Firewalls, Encryption, and IDS

The crystalreports.com internet firewalls use port blocking—allowing you to access our hardware load balancers only on ports 80 and 443. Port 80 is used for unsecured access to common web pages, while port 443 allows 128-bit SSL to encrypt and protect your report publishing and viewing activities. As soon as you log on, your session is encrypted and secure. Figure 1 shows the layers of protection that keep your crystalreports.com data secure.

Both of the enterprise firewall layers are secured using multiple strategies across various Open Systems Interconnection (OSI) layers—in addition to access control measures. We regularly test our configurations for resiliency and the ability to repel attempted intrusions.

We have implemented an intrusion detection solution (IDS) that builds on the strength of stateful inspection (also known as dynamic packet filtering) and integrates intrusion prevention technology into the firewall—providing application-level attack protection at the network perimeter.

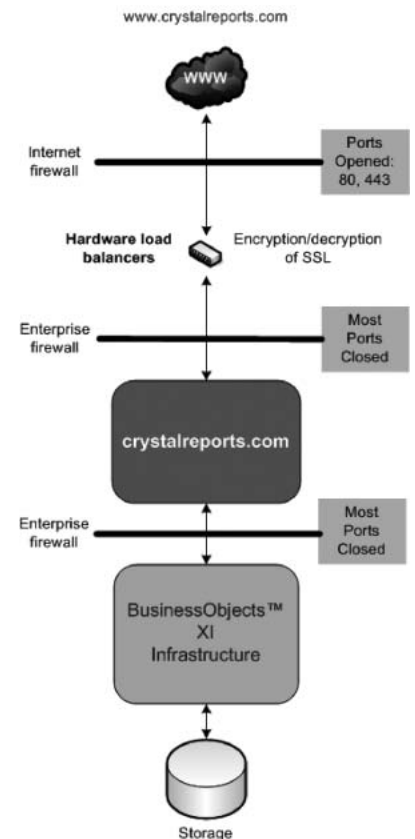


Figure 1: Layers of protection secure your crystalreports.com data.

Access by User Type

The crystalreports.com login process determines the kind of access granted to a user. The levels of access granted are dependent upon both the type of user and shared report spaces. crystalreports.com allows two types of users—viewers and publishers.

Viewer Accounts

Viewers work in user accounts that can view, load, and analyze reports. They can only view reports and report spaces to which they have been invited. Viewer accounts are created when a customer with a publisher account invokes the invitation process.

Upon login, viewers can view reports in report spaces where a publisher has specifically granted them access.

For example, in Figure 2, Jenny and Kris can view both Kris' and Paul's report spaces. Deepa can view only Paul's report space, and Pierre can view only Kris' report space. This is because Paul has invited Deepa, Jenny, and Kris to view his report space, while Kris has invited Jenny and Pierre as viewers to her report space.

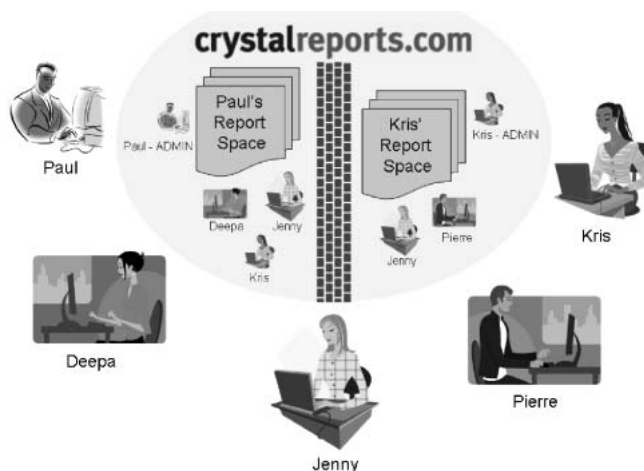


Figure 2: Your crystalreports.com access level depends on your user type and designated report spaces.

Publisher Accounts

Publishers employ user accounts that can view and analyze reports as well as load data and share their report spaces with other users. Currently, crystalreports.com does not allow delegated access or multiple administrators of report spaces.

Upon login, publishers are granted administrative access to their own report space AND view-only permissions to report spaces where another publisher has specifically granted them access. Publishers can only administer their own report spaces.

For example, looking at Figure 2 again, Paul can administer his own report space, but he cannot view Kris' report space. Kris can administer her own report space and she can view Paul's report space. This is because Paul invited Kris as a viewer to his report space, while Kris has only invited Pierre and Jenny as viewers to her report space. Only publishers can invite viewers to their report space.

Report Space Security

A report space is an area where publishers store their documents. It is secured by a logical and programmatic security boundary. Report spaces are separated using security features native to BusinessObjects XI and crystalreports.com. Access to your report space is controlled by the BusinessObjects XI component called the Central Management Server (CMS).

The CMS uses BusinessObjects XI security to verify the user name and password against the system database while acting as the system auditor. This component is responsible for maintaining a database of information about the crystalreports.com system that other components can access as required. The data stored by the CMS includes information about users and groups, security levels, BusinessObjects XI content, and servers.

By maintaining a database of users and their associated object rights, the CMS enforces who has access to the individual report spaces and the types of tasks they are able to perform. These tasks include the viewing and publishing of reports and vary by account type. For example, a premium user can specify access permissions at the folder level. Users can choose to share part or all of their report space. When users create a folder, they can choose to share just that folder and its contents with other users—giving them an additional level of control over who sees what information.

Data Access and Security

At this point, the crystalreports.com service does not allow access to data from behind your firewall. A Crystal Reports feature called Saved Data is used to cache data with your report template prior to uploading to the crystalreports.com service. As part of our future roadmap for crystalreports.com, we will provide the ability to run Crystal Reports against your operational data or data warehouse, as long as it is exposed through a web service (e.g., salesforce.com).

Conclusion

crystalreports.com employs multiple layers of security to allow organizations to safely and securely share their data with customers, partners, and suppliers. With crystalreports.com, your data is safe from unwanted intrusion—in an infrastructure you can trust. For more details, please visit crystalreports.com.

► www.businessobjects.com

For a complete listing of our sales offices, please visit our web site.

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