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# Integrating Crystal Reports with EnterpriseOne®: Turning the Sky Crystal Clear

By Andy Vanspranghe

***Editor's Note:*** *Have you ever allocated a small amount of time to a task, thinking it would be a piece of cake, only to discover that it's anything but? Some things aren't quite as easy as they would appear they should be; integrating Business Objects' Crystal Reports with JD Edwards® EnterpriseOne is a perfect example. Sure, there are guidelines and manuals that provide "setup instructions". But, as Andy Vanspranghe discovered, those manuals leave out a few key details that can mean the difference between a smooth installation and hair-pulling frustration. Andy is more than happy to share with you the little "gotchas" he learned, the hard way of course, in hopes that your experiences with Crystal Reports will be much clearer.*

## Introduction

Connecting external software to JD Edwards EnterpriseOne is always a bit of a challenge. Data connectors, security plug-ins, authentication—all can be the cause of many headaches. Once you have obtained control over the deployment process, the sky usually gets clearer until… another vendor acquires the software. Clouds come back and new headaches arise, because a new vendor means new rules, and new rules mean new problems. A great example is the December 2003 acquisition of Crystal Reports by Business Objects (BO) Their strategy to incorporate Crystal Reports within their own Business Intelligence suite didn't make things easier for us skilled in JDE®.

In theory, this should be a ten-minute task. But there are so many manual steps and considerations involved that at some point you might find yourself driving through a never-ending tunnel. In this article, I provide a step-by-step overview on how to get this job done. These instructions are directed at system managers and require some knowledge of databases and application servers.

## The Pieces of the Puzzle

First things first: getting your hands on the software. Before you get into download-mode, you should definitely check the supported platforms documentation to make sure your system is compatible with what is required. This information can be downloaded from BO's technical support site (**www.techsupport.businessobjects.com**). Our installation was performed on a Windows 2003 Server with Service Pack 2 installed. We are on EnterpriseOne 8.11 with 8.85 Tool set.

Once you are sure your system is compatible with BO's requirements, then it's time to surf to find all the pieces of the puzzle. Figure 1 lists everything you will need. Throughout this article, I will explain how and where to use every piece.

BO is worthless without a valid license key. All the connectivity features are disabled by default and only a valid key can enable them, so don't forget to call your BO account manager to discuss the financial details!

## System Layout

Before you click on setup.exe, it would be wise to study the deployment process in detail first. Figure 2 illustrates how all the segments connect. I won't bore you with the JDE part, as for this article, I will assume you know all about JAS servers and other aspects of that environment. Let's concentrate on the Business Objects/Crystal Reports side of the picture, focusing on

| Name | Version | Where to obtain |
|---|---|---|
| Business Objects | XI release 2 (*) | BO ESD (Electronic Software Delivery) |
| Crystal Reports | XI release 2 (*) | BO ESD |
| Peoplesoft Integration Kit | | Oracle website/ BO ESD |
| Oracle Application Server | 10.1.2.02 | Oracle website |
| Java runtime environment | 1.4.02 | Java website |
| (*) At the time of this article, XI release 3 has just recently been launched. It is however advised to use release 2. | | |

Figure 1: Required Setup Files



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the BO/CR server. This is the server where all BO/CR processes (reporting, analysing, scheduling, etc.) will be up and running, and security is handled. We will get back to that later on in the article. It's important to note that the only integration between BO and CR is the security and the way reports are accessed and processed. The actual report development is done with an application running on a client computer, as was in the case in previous CR deployments.

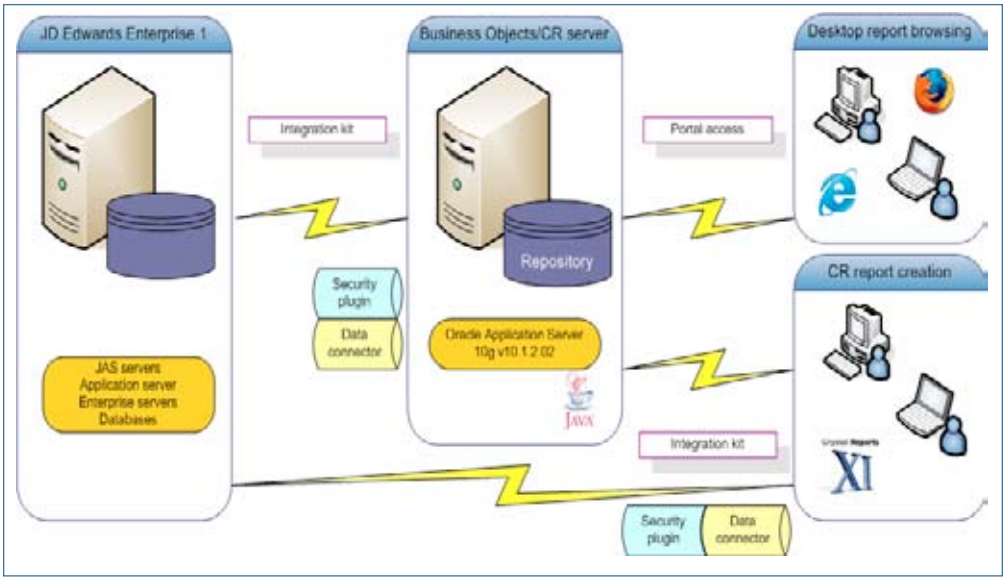


Figure 2: Connectivity Overview

As you can see in Figure 2, there are a lot of connections among the various environments. Report creators access JDE to retrieve table and column information and to refresh reports during design time. The finished reports are published to the BO/CR server and can be accessed by report users through a Web portal BO refers to as Infoview. When the report creators log on to the portal, their access is validated by a security plug-in that connects directly to JDE. You've probably already guessed that the Integration Kit you see in Figure 2, handles all the connections between the BO/CR and the JDE environments. This kit has two parts: a security plug-in to validate user logon and a data connector to retrieve the data from the JDE database. We will get into this piece-by-piece further on.

If you are familiar with BO XI, you might know that it is possible to choose between an IIS and a Java setup (as long as you do not install the Performance Management module, which requires Java; that's another story). Let me make things clear right away: You can forget about the IIS solution when it comes to connecting to JDE; only Java is supported. And to make things even "brighter", you are not allowed to use Tomcat, the application server that is included with BO XI. The only supported application servers are Oracle Application Server (OAS) and WebSphere Application Server (WAS). In our setup, the JDE environment was running on OAS, so we made the logical choice to use it for the BO/CR setup, too.

Now that you have a general idea of how things will look once you have finished installing every piece of the jigsaw, it's time to dive into the setup process.

## BO Repository

In Figure 1, you can see that BO/CR needs a so-called repository. The repository is simply a relational database where metadata is stored. The only metadata that will be stored in our scenario are the Crystal reports and the user information, plus some connectivity data. If you plan to use the same BO server for non-Crystal reporting or analysis (regular BO reporting, Performance Management, OLAP), then this repository will also contain the data required to steer these processes (BO universes, analytics, etc.). Since this is not within the scope of this article, please refer to BO's corporate Website at **www.businessobjects.com** for more information.

Before you can install BO XI, you will need a database (or a schema in an existing database) so that BO can store its metadata. The installation wizard allows you to set up a MySQL database automatically, but MySQL is not supported in this scenario; neither is SQL Server. Only Oracle or DB2 databases are allowed. Although it is possible to store the BO data in an existing schema, it's advisable not to do so. The setup process will create various system tables and you simply don't want these listed among other tables that have nothing to do with BO. I'm sure your DBA will be glad to help you out with the creation of separate schema. If you are planning to use an Oracle database (like we did), keep in mind that the connection has to be established through SQL*Net, using the TNSNAMES.ORA configuration file. Using



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