IBM Information Management software

Deploying Business Objects® Crystal Reports® Server on IBM® InfoSphere™ Balanced Warehouse™ C-Class Solution for Windows®

Installation & Configuration Guide

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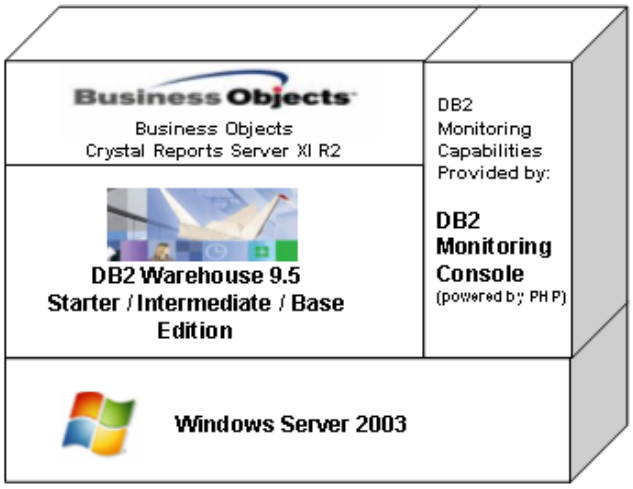
1. Introduction

The IBM® InfoSphere™ Balanced Warehouse™ C-Class data warehousing solution provides a repository of your company's historical data and allows for analysis of such data without impacting your business systems. The complete data warehousing solution includes IBM InfoSphere Warehouse software and IBM hardware in a pre-integrated, pre-tested configuration that is easy to deploy and maintain. A reporting solution such as Business Objects® Crystal Reports® Server can be added as an integrated component to the C-Class solution.

This document demonstrates the integration of Business Objects Crystal Reports Server XI Release 2 with the InfoSphere Balanced Warehouse C-Class solution for Windows®. The subsequent chapters outline step-by-step instruction on the installation and configuration of Crystal Reports Server in the following two C-class architectures.

1.1 Single C-Class Server Architecture

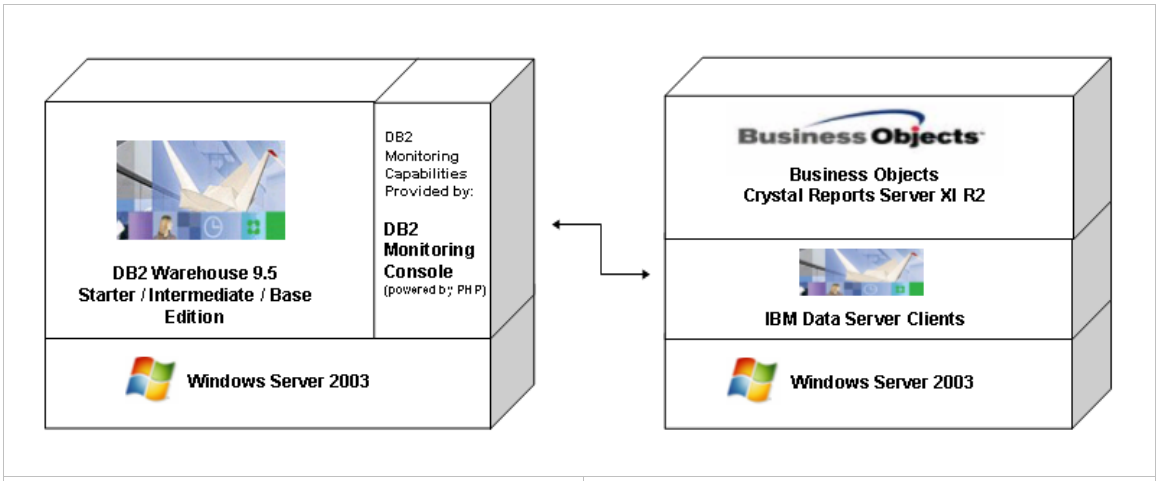
In this architecture, the InfoSphere Balanced Warehouse C-Class components and the Crystal Reports Server components reside on the same machine as illustrated in the diagram below.



C-Class Server Node

1.2 Remote C-Class Server Architecture

In this architecture, the InfoSphere Balanced Warehouse C-Class components reside on the C-Class machine and the Crystal Reports Server components reside on another machine accessing source data on C-Class machine as illustrated in the diagram below.



C-Class Server Node | *Crystal Reports Server Node*

Crystal Reports Server requires the use of a database to store information about the system and its users. This database is known as the Central Management Server (CMS) database. The CMS database stores information about the Crystal Reports Server system. Other components of the Crystal Reports Server can access this information as required.

You can choose to create the CMS database on any node where a DB2 instance is installed. As illustrated in this configuration, you will create the CMS database in the DB2 instance pre-installed on the *C-Class Server Node*.

You will also need to install and configure IBM Data Server Clients product on the *Crystal Reports Server Node* to access CMS database on the *C-Class Server Node*.

Product Information Resources

For details on installing and configuring Crystal Reports Server, refer to the *Crystal Reports Server XI Release 2 Installation Guide for Windows* available at: *http://support.businessobjects.com/documentation/product_guides/*

For information about IBM InfoSphere Balanced Warehouse C-Class solution, visit IBM website at:
http://www-306.ibm.com/software/data/db2bi/balanced-warehouse/c-class.html

2. Integrating Crystal Reports Server with IBM C-Class Solution

This section describes the installation and configuration steps required to deploy Crystal Reports Server XI R2 on Windows in the single and remote C-Class Architectures.

Before installing the Crystal Report Server product, refer to the documentation included with your Crystal Reports Server product distribution media for a complete list of system requirements and pre-installation instructions.

2.1 Installing and Configuring Crystal Reports Server XI R2

The instructions below will take you through the steps to install, configure and validate the deployment of Crystal Reports Server.

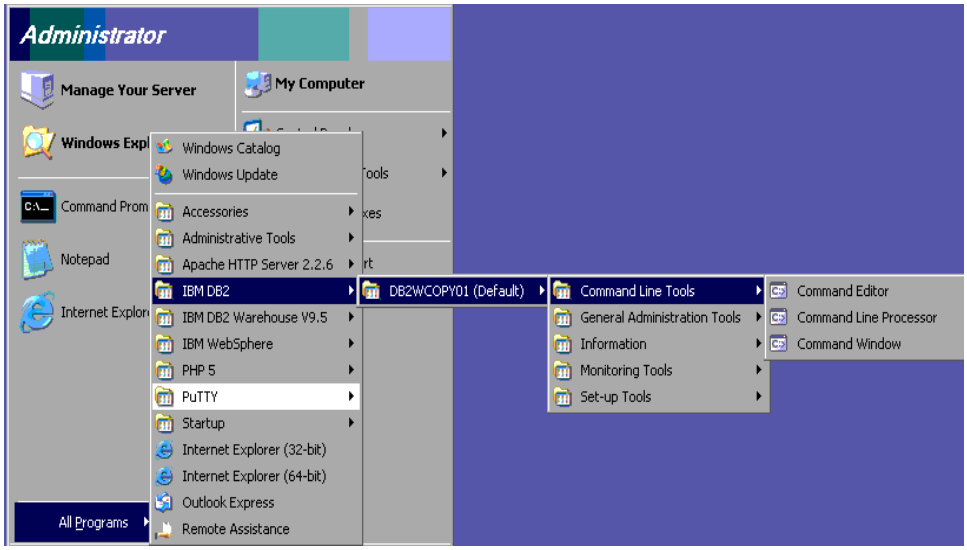
2.1.1 Configuring the CMS database

In this section, you will create and configure the CMS database in the DB2 instance pre-installed on the *C-Class Server Node*.

Creating the CMS database on DB2

- Launch a DB2 command Line Processor (CLP) window.

  On Windows, click ***Start > Programs > IBM DB2 > DB2instance > Command Line Tools > Command Line Processor***



- From the DB2 CLP window, create the CMS database with the following command:

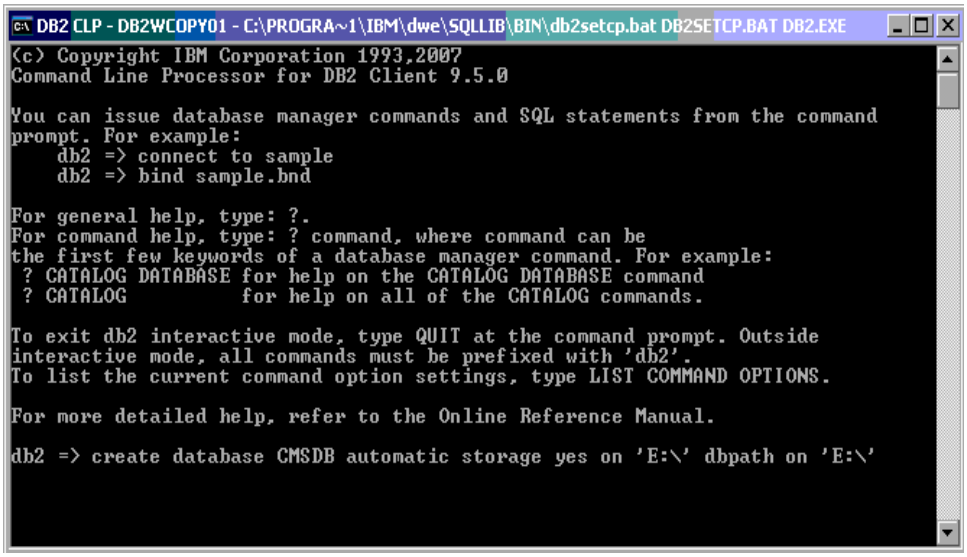
```
db2 => create database <database_name> automatic storage
yes on <path> dbpath on <dbpath>
```

Note:

*<**database_name**> is the user-defined name of the CMS database.*

*<**path**> is a list of storage path where you want to create the CMS database. In Windows, this means the list of drives where you want to store data. Since the CMS database is small, it's recommended that you specify only one drive.*

*<**dbpath**> is the database path associated with the CMS database you are creating. If you do not specify this explicitly, the database path will be set to the first <path> listed in the CREATE DATABASE command.*



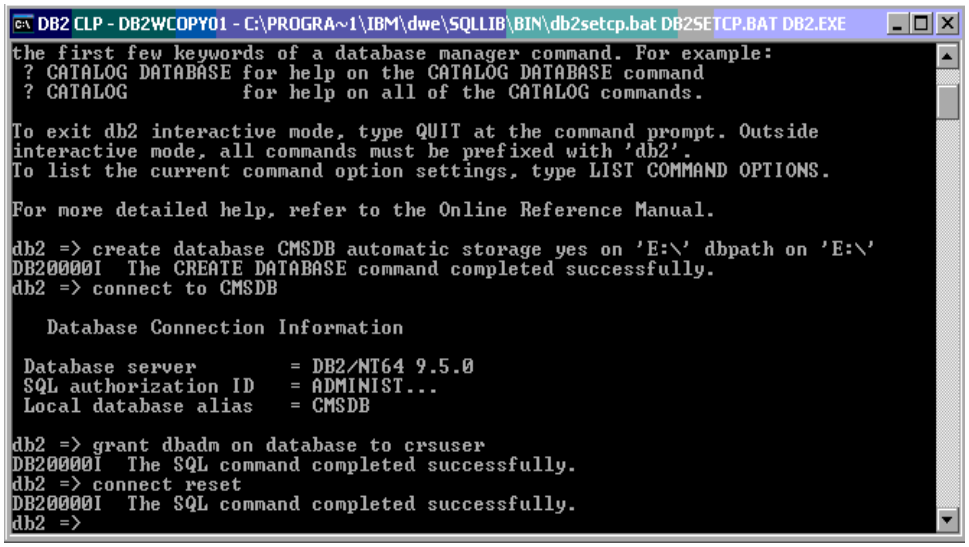
Setting up a database account for Crystal Reports Server

- Create or select a user account that provides Crystal Reports Server with the appropriate privileges to access the CMS database. Add this user account to the Administrators group. On Windows, execute the following steps to create a new user account:
  - Click ***Start > Programs > Administrative Tools > Computer Management***.
  - Expand ***Local Users and Groups,*** right click on ***Users*** and select ***New User***.
  - Enter the new user information and password. Click ***Create*** and close the ***New User*** window.
  - The new user will appear on the right pane. Right click on the username and select ***Properties***.
  - Select ***Member Of*** and click ***Add,*** then click ***Advanced***.

- Click ***Find Now*** and double click on ***Administrators,*** then click ***OK***.
- Close the ***Properties*** window and the ***Computer Management*** window.

- Connect to the CMS database and grant DBADM authority on the database to the user account created in the previous step. From the DB2 CLP window, execute the following commands:

```
db2 => connect to <database_name>
db2 => grant dbadm on database to <userid>
db2 => connect reset
```



2.1.2 Installing and configuring IBM Data Server Clients

If you choose to deploy Crystal Report Server in the **Remote C-Class Server Architecture**, you will need to install and configure IBM Data Server Clients on the *Crystal Reports Server Node*.

The Data Server Clients is required to establish database communication between the client on *Crystal Reports Server Node* and the CMS database on *C-Class Server Node*. During the installation of Crystal Reports Server, the installation process will make connection to the CMS database to store Crystal Reports Server information.

Installing IBM Data Server Clients

If the Data Server Clients product has not been installed on your *Crystal Reports Server Node,* you can install it at this time.

- The Data Server Clients product code is available for download at: *http://www-1.ibm.com/support/docview.wss?rs=71&uid=swg21288113*
- For detailed information about installing the Data Server Clients, refer to ***Part 2 Installing IBM Data Server clients*** section in *Quick Beginnings for IBM Data Server*

Clients Guide at:
ftp://ftp.software.ibm.com/ps/products/db2/info/vr95/pdf/en_US/db2ite951.pdf

Configuring IBM Data Server Clients

During the configuration step, you will catalog the *C-Class server node* and the CMS database as follow:

- From the *Crystal Reports Server Node*, use DB2 CLP to catalog the *C-Class Server Node* with the following commands:

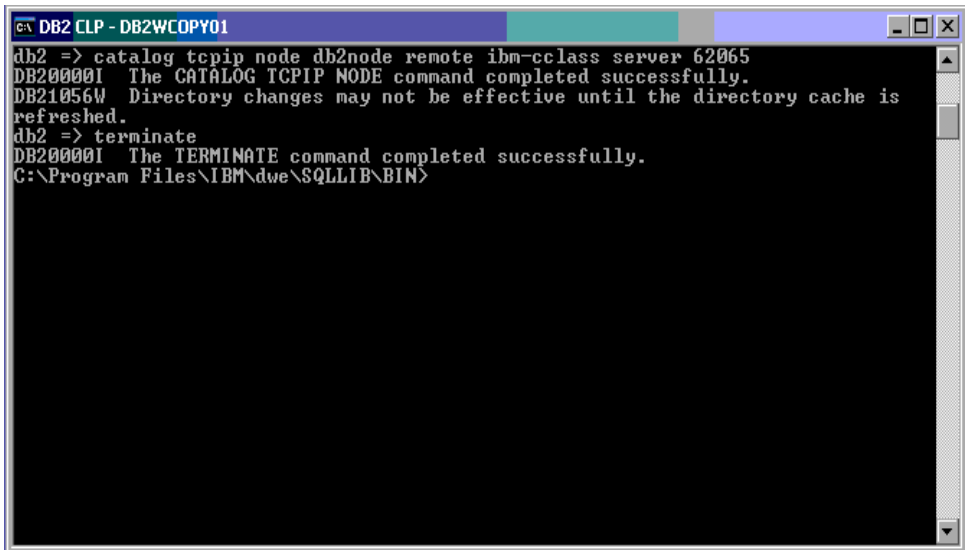
```
db2 => catalog tcpip node <node_name> remote <hostname or
ip_address> server <service_name or port_number>

db2 => terminate
```

Note:

*<**node_name**> is the user-defined name assigned to the node you are cataloging.*

*<**hostname** or **ip_address**> is the hostname or IP address of the remote database server (C-Class Server Node).*

*<**service_name** or **port_number**> is the service name or port number of the DB2 instance in which the CMS database is created.*



- From the *Crystal Reports Server Node*, use DB2 CLP to catalog the CMS database with the following commands:

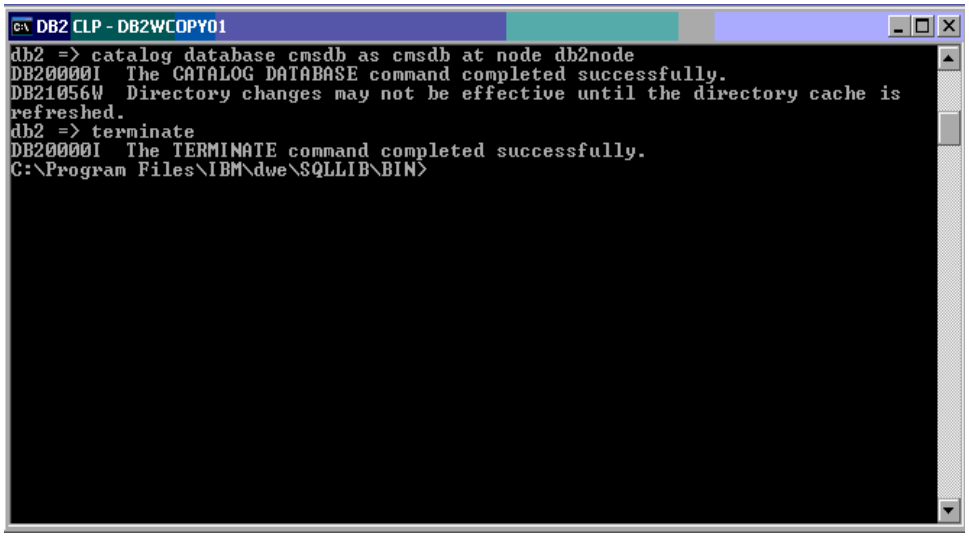
```
db2 => catalog database <database_name> as <database_alias>
at node <node_name>

db2 => terminate
```

Note:

*<**database_name**> is the name of the CMS database created on the C-Class Server Node.*

*<**database_alias**> is a user-defined alias of the remote database as it appears in the DB2 client's database directory.*

*<**node_name**> is the name of the C-Class Server Node you have cataloged in the previous step.*



For more information about configuring the Data Server Clients, refer to ***Chapter 4 Client-to-Server Communication Configuration Overview*** section in *Quick Beginnings for IBM Data Server Clients Guide* at: *ftp://ftp.software.ibm.com/ps/products/db2/info/vr95/pdf/en_US/db2ite951.pdf*

2.1.3 Installing Crystal Reports Server

- If you choose to deploy Crystal Report Server in the **Single C-Class Server Architecture**, perform the following installation steps on the *C-Class Server Node*.
- If you choose to deploy Crystal Report Server in the **Remote C-Class Server Architecture**, perform the following installation steps on the *Crystal Reports Server Node.*

Installing on a non-system drive

If you are installing Crystal Reports Server onto a drive other than the default system drive (that is the drive containing your operating system files), read this section.

You can install Crystal Reports Server on any drive on your machine. The Setup program will install Crystal Reports Server files only on the drive that you specify.

Note: You will need to have sufficient space on the system drive for the installation program to proceed.

There is one exception to this rule. If you previously installed another Business Objects product, such as Crystal Reports, the Crystal Reports Server Setup program will automatically use the existing common directory for any Business Objects product shared files that it adds. If this common directory is on the system drive, Crystal Reports Server automatically installs its shared files there.

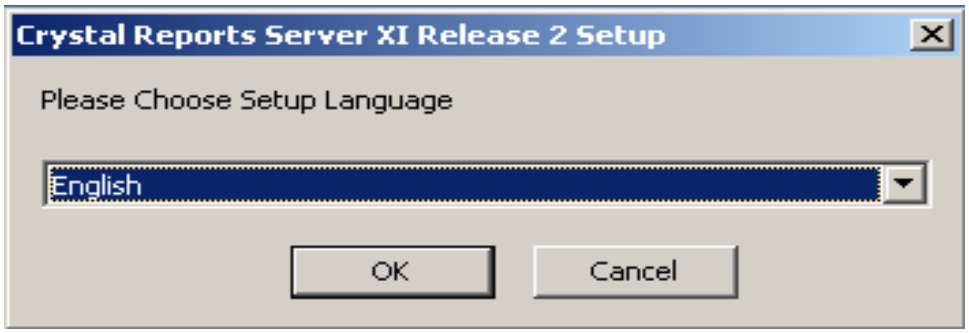
To install several Business Objects products on a non-system drive, install Crystal Reports Server first. All Business Objects products that you install subsequently will use this same non-system drive for their shared files.

Full stand-alone Installation

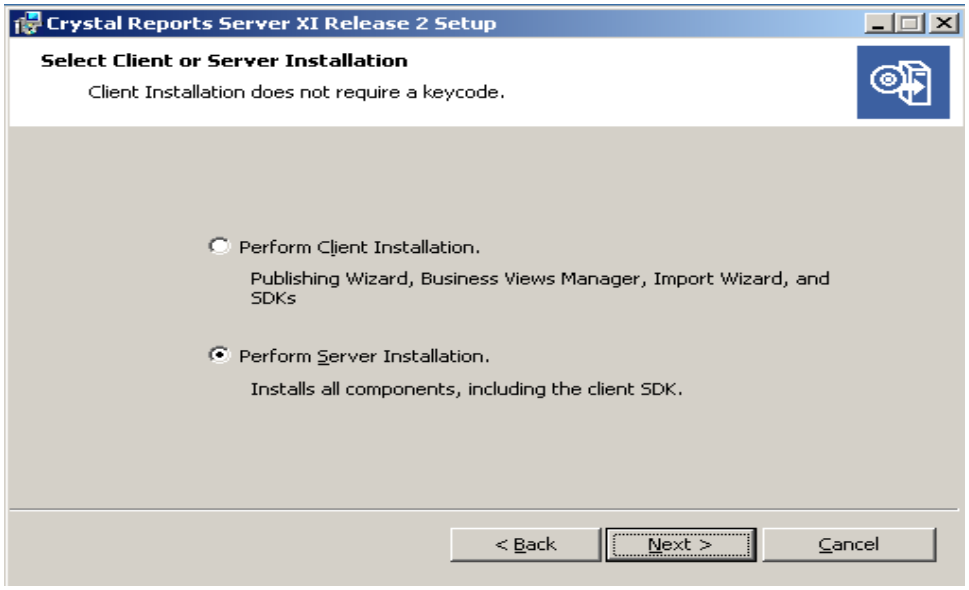
This installation scenario offers the quickest way to install Crystal Reports Server. When you choose to perform the stand-alone installation, all the client and server components of Crystal Reports Server are installed on the local machine. Follow the steps below to install Crystal Reports Server.

- Unless Autoplay is enabled for your CD-ROM drive, run ***setup.exe*** from the win32 directory of the Crystal Reports Server product distribution media.

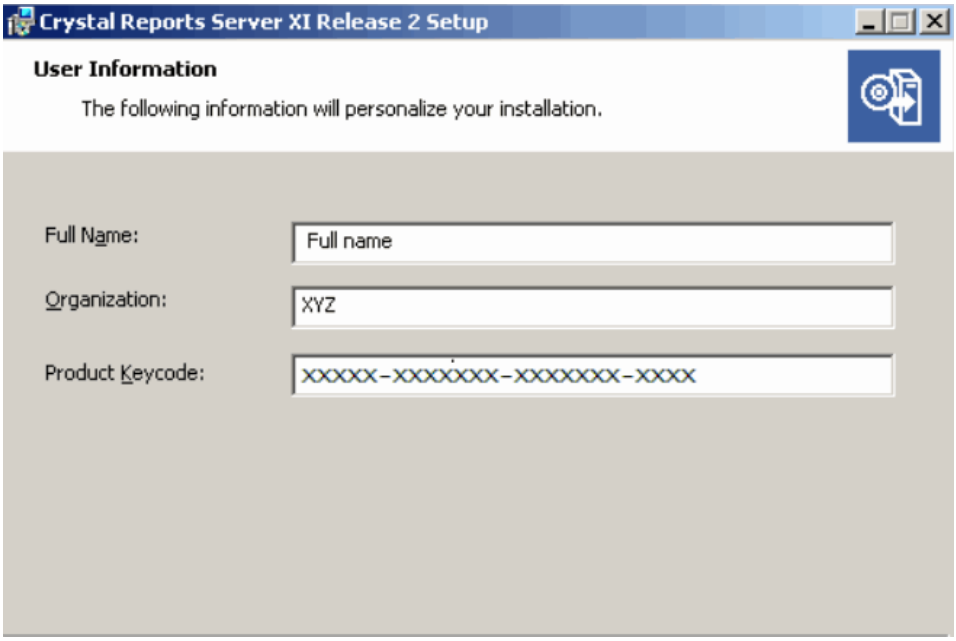
  In the ***Setup Language*** dialog box, choose the language of your choice and click ***OK***.



- Proceed to accept the license agreement.
- In the ***Select Client or Server Installation*** dialog box, choose ***Perform Server Installation*** to perform the full stand-alone installation. Click ***Next*** to proceed.

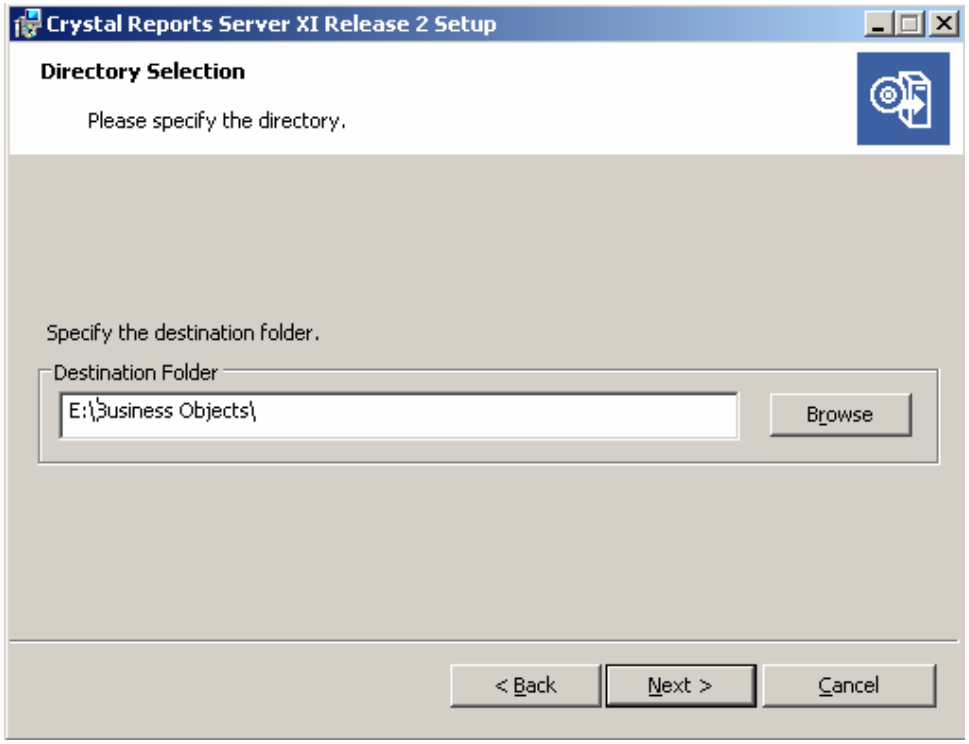


- Enter the License key for Crystal Report Server XI R2 and click ***Next*.**

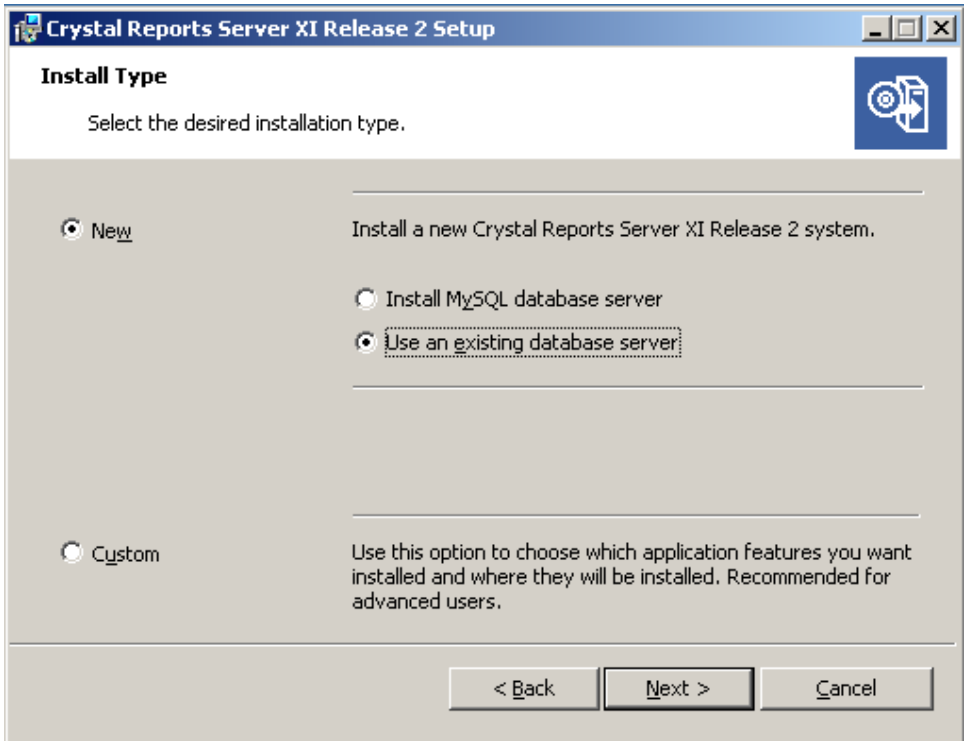


- In the ***Directory Selection*** dialog box. Select a location and click ***Next***.

  Note: You can choose to install on a drive other than the default location. The Setup program will install the shared files on the location you specify. These common files are also used by Business Objects products such as Crystal Reports.

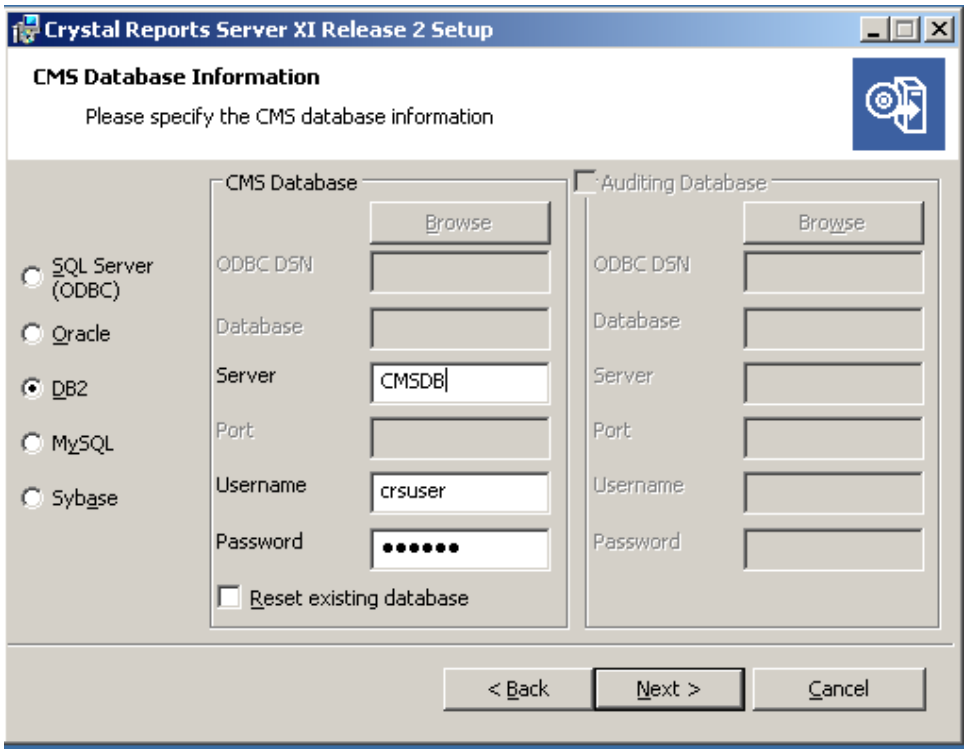


- In the ***Install Type*** dialog box, click ***New*** and select ***Use an existing database server*** option. Click ***Next*** to proceed.

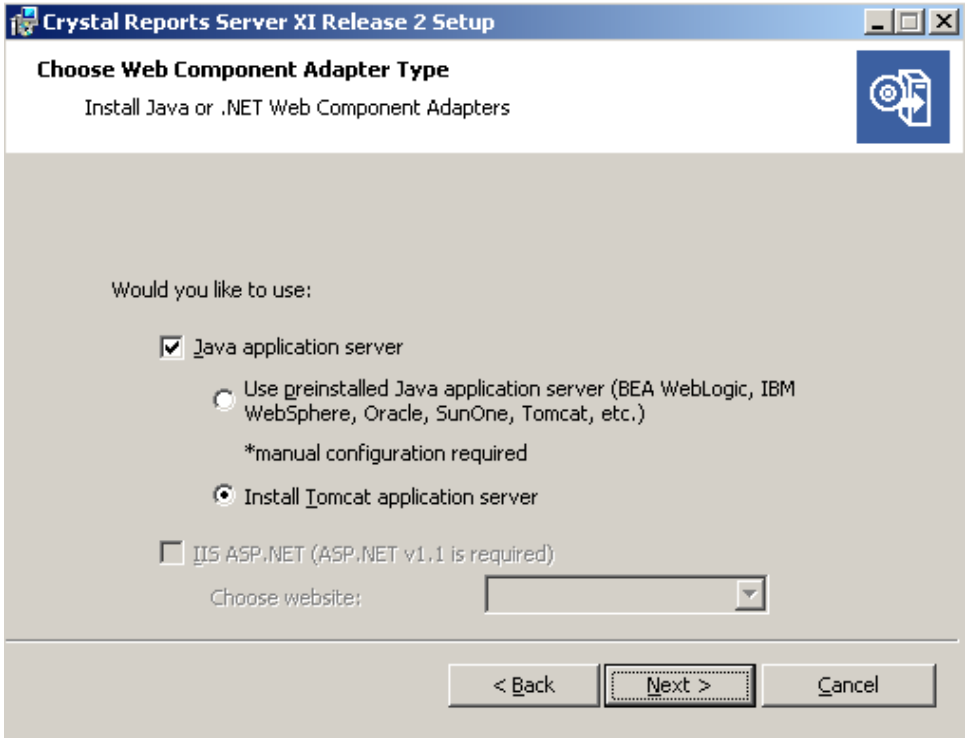


- In the ***CMS Database Information*** dialog box, fill in the following information:
  - Select ***DB2*** as the database connection type.
  - In the ***Server*** field, enter the database alias name of the CMS database. Database alias names are local synonyms given to local or remote databases. If you do not specify an alias name when you create or catalog the CMS database, the database manager uses database name as the alias.
  - In the ***Username*** and ***Password*** field, enter the database login ID and password that has DBADM authority on the CMS database.
  - Click ***Next*** to proceed.

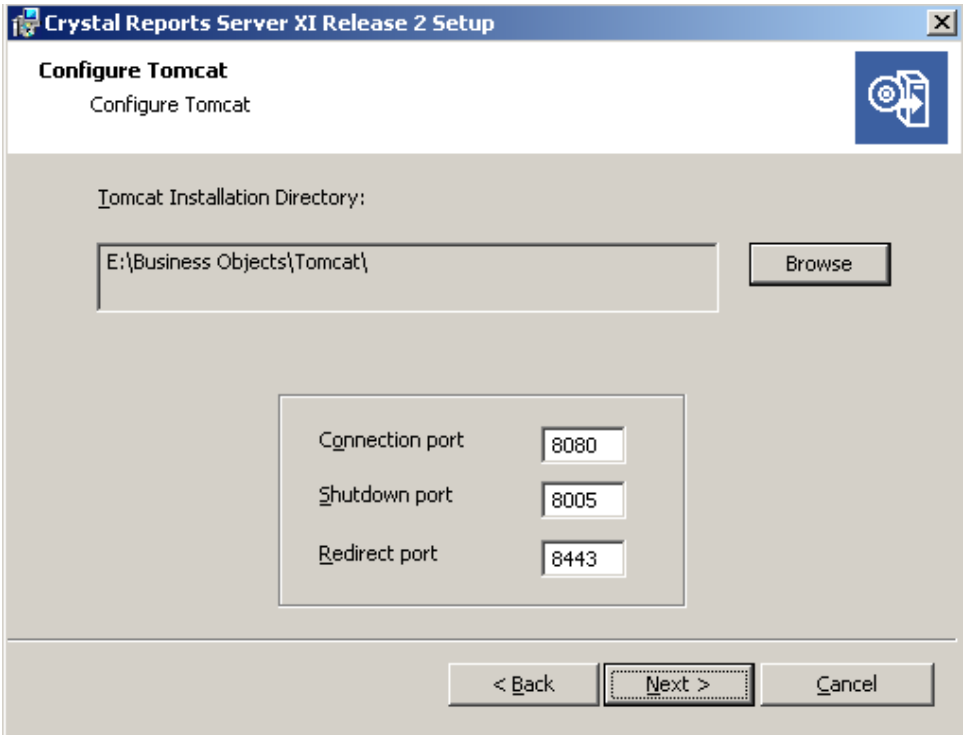
  The Central Management Server will use this information during startup and connect to the CMS database.



- In the ***Choose Web Component Adapter Type*** dialog box, select ***Java application server*** and ***Install Tomcat application server***. Click ***Next*** to proceed.



- In the ***Configure Tomcat*** dialog box, verify that the Tomcat installation directory is correct and adjust all other settings as necessary. Click ***Next*** to proceed.



- When you reach the ***Start Installation*** dialog box, click ***Next***.
  During the installation process, you may be prompted to restart the local machine. When the installation program has finished copying files, you will be given the opportunity to register your product at that time or register later.
- Click ***Finish***. *T*he installation of Crystal Reports Server is now completed. Proceed to the next step to verify that you can access the Crystal Reports Server.

2.1.4 Accessing Crystal Reports Server

You can access Crystal Reports Server from the Administration Launchpad to manage all aspects of Business Objects Business Intelligence platform.

To launch the Administration Launchpad from a web browser, go to the following page:

```
http://<webserver>:8080/businessobjects/enterprise115/adminlaunch/launchpad.html
```

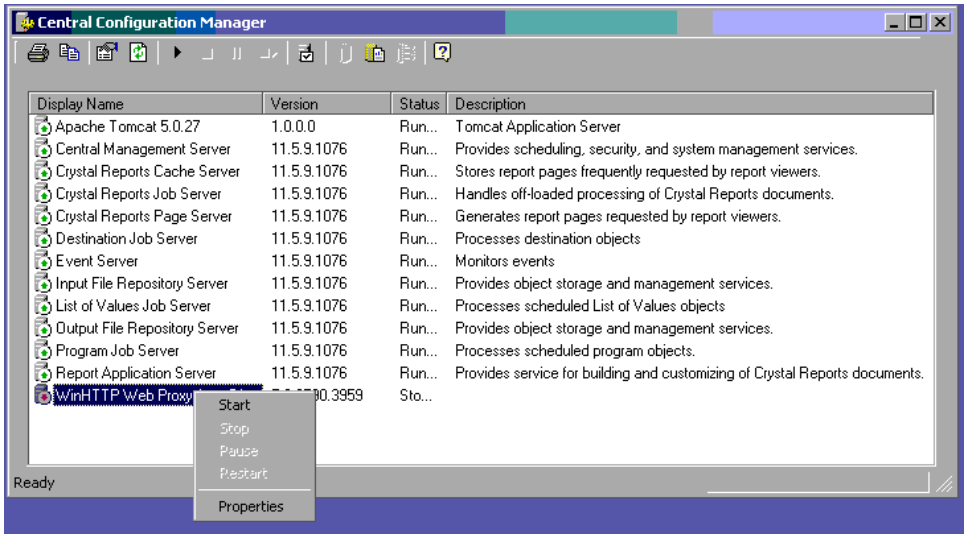
Note:

*<**webserver**> is the name of the web server machine where Tomcat is installed. If you changed this default virtual directory on the web server, you will need to adjust your URL accordingly. If necessary, change the default port number 8080 to the number you provided when you installed Crystal Reports Server.*

If you cannot access the Administration Launchpad from the web browser, follow the steps below to access the ***Central Configuration Manager*** and ensure that all of the servers listed are both started and enabled.

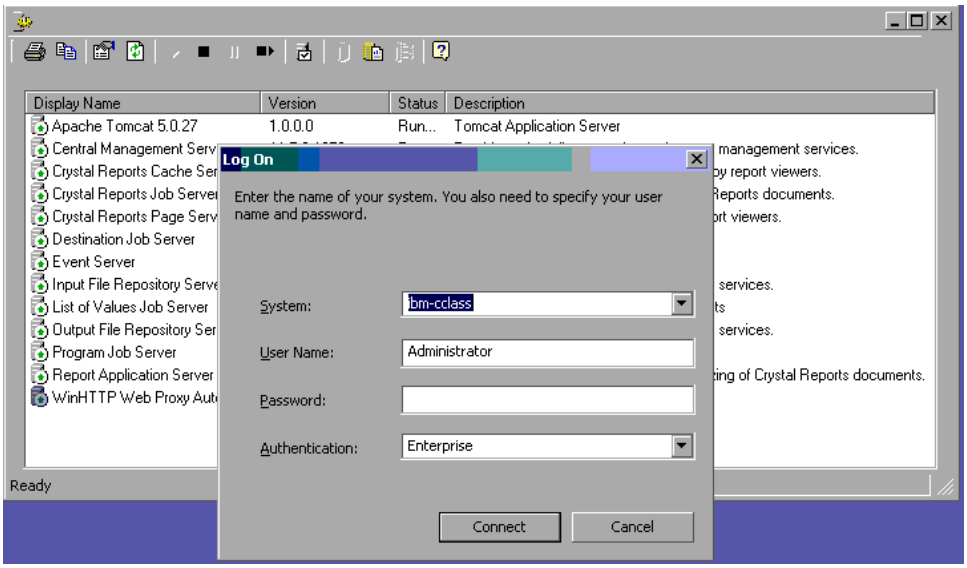
To ensure that all servers are started

- On Windows, click ***Start > Programs > Business Objects > Crystal Reports Server > Central Configuration Manager***
- In the ***Central Configuration Manager*** window, verify that all the servers listed have a status of ***Running***. If there are any servers that have a status of ***Stopped***, they must be started.
- To start a server, right-click the server name and select ***Start*** from the submenu.

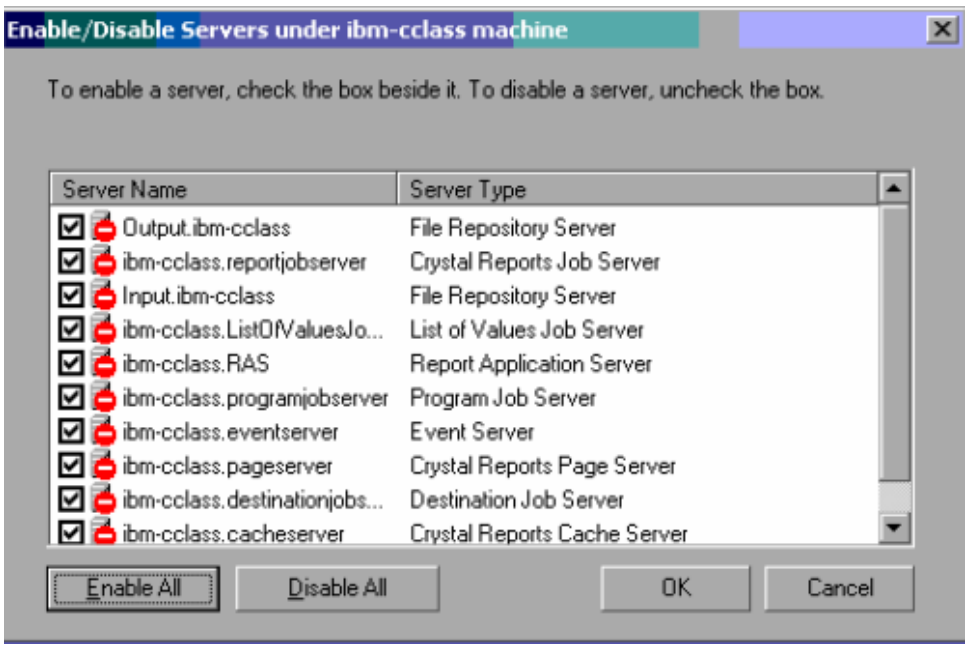


To ensure that all servers are enabled

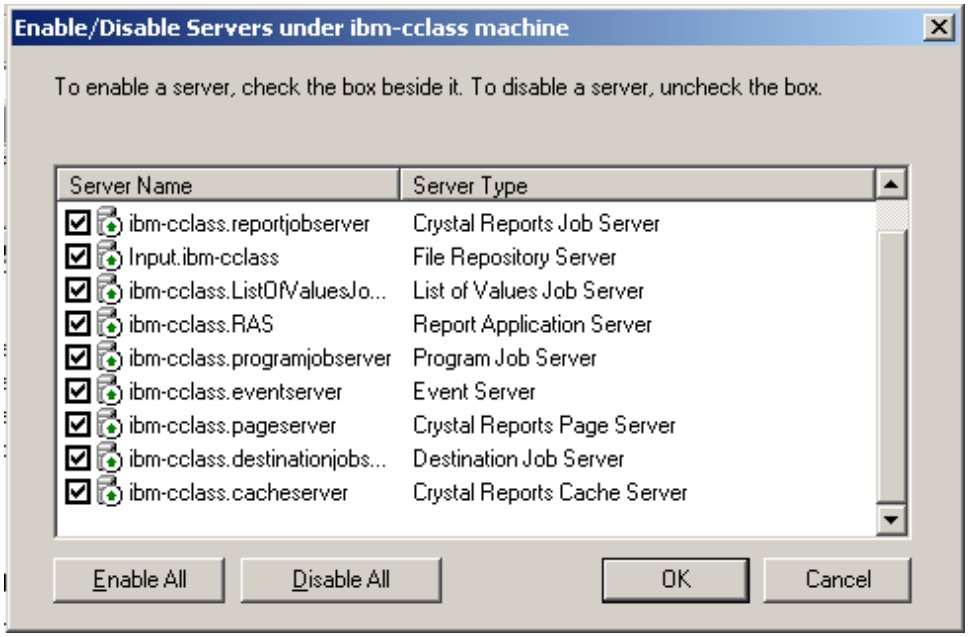
- After all servers are started, you must ensure that they are also enabled. To do this, click the ***Enable/Disable Servers*** icon on the toolbars. You will be presented with a log on window. In the ***Log On*** dialog box, fill in the following information:
  - In the ***System*** field, enter the server name where Crystal Reports Server is installed.
  - In the ***User Name*** field, enter ***Administrator***.
  - Leave the ***Password*** field blank.
  - From the ***Authentication*** list select ***Enterprise*** and click ***Connect***. You will be logged on to the Crystal Reports Server system.



- In the "***Enable/Disable Servers under <server_name> machine***" dialog box, ensure that all servers show the green icon. This indicates that the servers are enabled. If any servers have the Do-Not-Enter icon, these servers are disabled and need to be enabled. To enable, select the checkbox to the left of the server and click ***OK***.



- Now when you re-open the "***Enable/Disable Servers under <server_name> machine***" dialog box, all the servers should be enabled.



2.1.5 Applying Crystal Report Server Service Packs

Depending on how Crystal Reports Server product maintenance is refreshed at the time of product distribution, you might need to install additional service packs after the installation of Crystal Report Server is completed. The Crystal Report Server XI R2 Service Pack 3 is the minimum requirement for Crystal Report Server to work on

Windows in a 64-bit environment. If your product distribution media has not been refreshed to include SP3, you will need to download and apply SP3 along with its prerequisite service packs where applicable. Please consult with your product distributor for detailed information on the level of service pack required.

Crystal Report Server XI R2 SP3 is available for download at:
http://support.businessobjects.com/downloads/service_packs/crystal_reports_server.asp

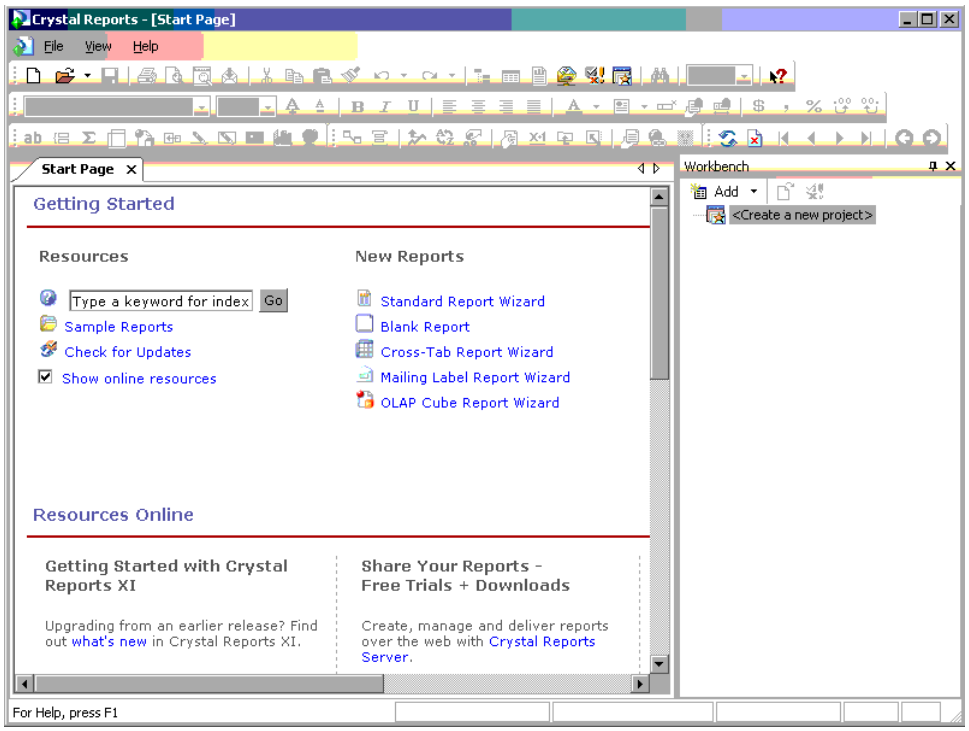
For the latest service pack information for Crystal Report Server, visit:
http://support.businessobjects.com/downloads/service_packs/default.asp

2.1.6 Accessing Sample Crystal Reports

Sample reports are installed by default, so you can verify your installation and learn your way around Crystal Reports Server.

- On Windows, click ***Start > Programs > Crystal Reports XI Release 2***

  From the ***Crystal Reports*** window, select ***Sample Reports*** and choose a report folder to view the reports.



3. Accessing DB2 Data Sources from Crystal Reports

This section describes how to setup connection to a local or a remote DB2 data source so Crystal Reports can access data stored in DB2 database and produce reports on that data.

3.1 Setting up Connection to Remote DB2 Data Sources

If you deploy Crystal Report Server in the ***Remote C-Class Server Architecture***, you must first configure Client-to-Server connection to establish database communication between DB2 client on the *Crystal Reports Server Node* and remote database on the *C-Class Server Node*.

If you deploy Crystal Report Server in the ***Single C-Class Server Architecture***, proceed to section ***3.2 Accessing Data Sources from Crystal Reports***.

3.1.1 Configuring Client-to-Server Connection

Follow the steps below to catalog the *C-Class Server Node* and the remote DB2 database from DB2 client.

Cataloging a TCP/IP Node from DB2 Client

From the *Crystal Reports Server Node*, use DB2 CLP to catalog the *C-Class Server Node* with the following commands:

```
db2 => catalog tcpip node <node_name> remote <hostname or
ip_address> server <service_name or port_number>

db2 => terminate
```

Note:

*<**node_name**> is the user defined name assigned to the node you are cataloging.*

*<**hostname** or **ip_address**> is the hostname or IP address of the remote database server (C-Class Server Node).*

*<**service_name** or **port_number**> is the service name or port number of the DB2 instance in which the remote database is created.*

Cataloging a Remote Database from DB2 Client

From the *Crystal Reports Server Node*, use DB2 CLP to catalog the remote database with the following command:

```
db2 => catalog database <database_name> as <database_alias>
at node <node_name>

db2 => terminate
```

Note:

*<**database_name**> is the name of the remote database created on the C-Class Server Node that contains the data source you want to access.*

*<**database_alias**> is a user-defined alias of the remote database as it appears in the DB2 client's database directory.*

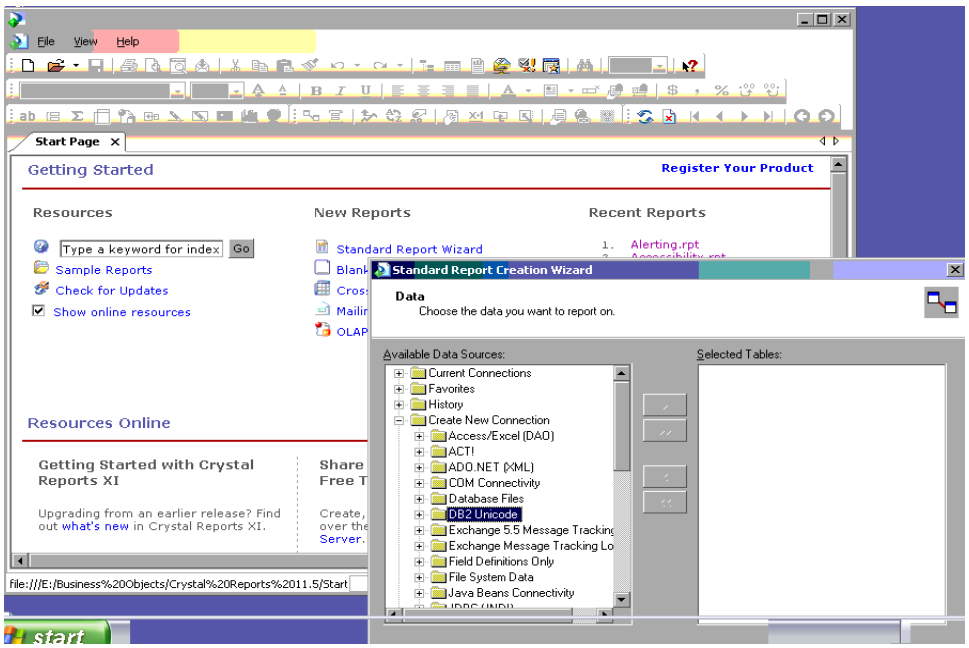
*<**node_name**> is the name of the C-Class Server Node you have cataloged in the previous step.*

For more details on this topic refer to the *Quick Beginnings for IBM Data Server Clients Guide* at:
ftp://ftp.software.ibm.com/ps/products/db2/info/vr95/pdf/en_US/db2ite951.pdf

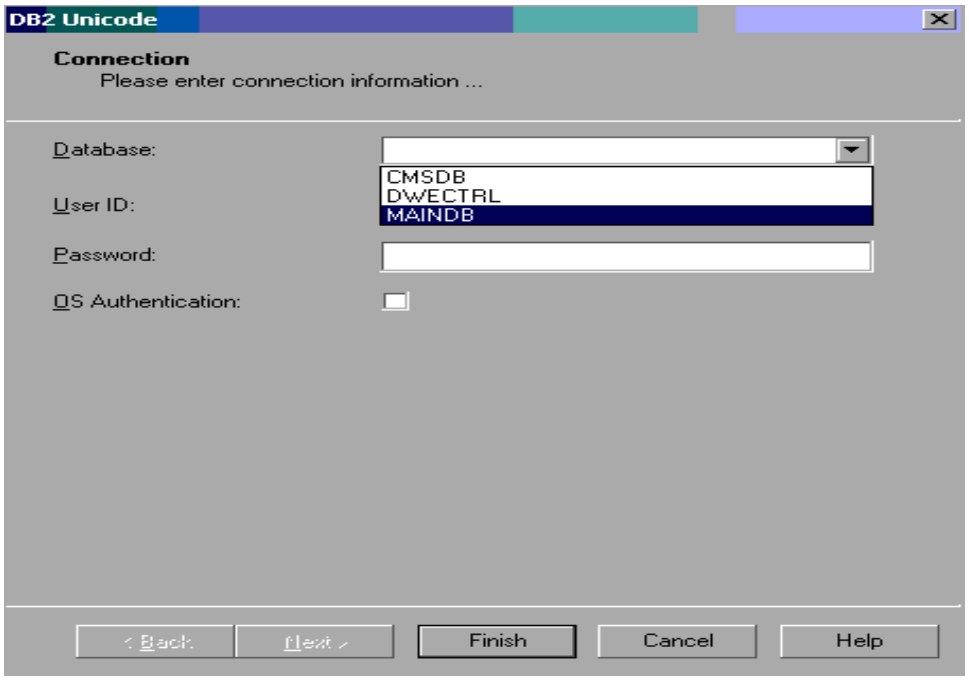
3.2 Accessing DB2 Data Sources from Crystal Reports

You can access the DB2 data sources from any Report Wizards. The following steps illustrate how to access DB2 data sources from a Standard Report Wizard.

- On Windows, click ***Start > Programs > Crystal Reports XI Release 2***
- From the Crystal Reports window, click ***Standard Report Wizard*** under the ***New Reports*** section.
- From the ***Standard Report Creation Wizard*** window, expand the ***Create New Connection*** folder and double click on ***DB2 Unicode***.

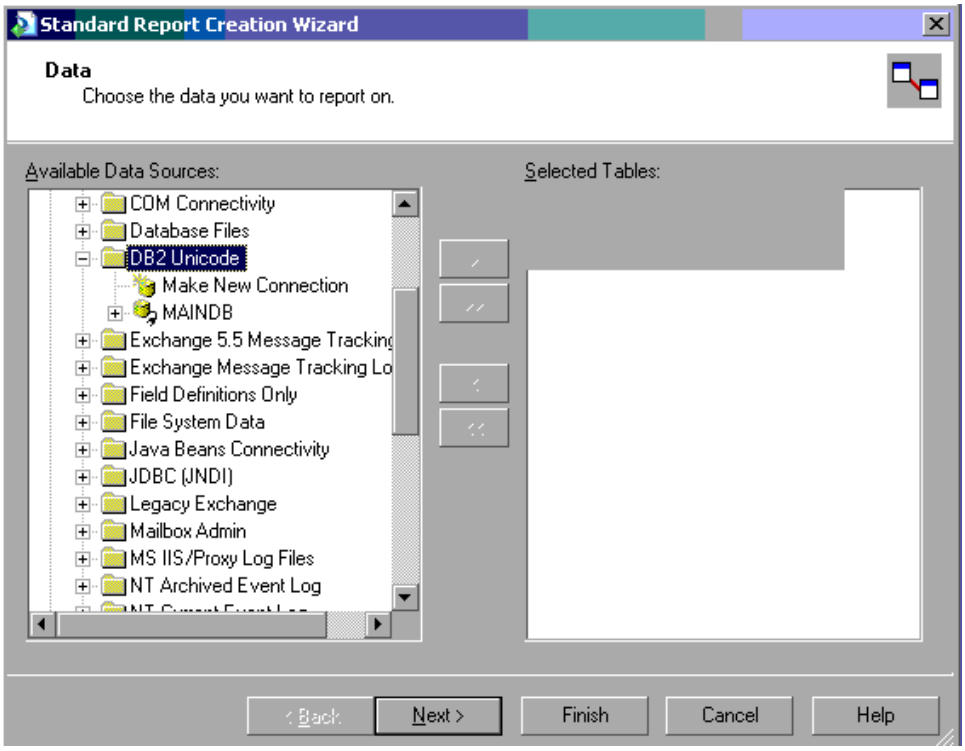


- From the ***Connection*** window, click on the pull-down list to select a database that contains the data source you want to access. Login with an authorized database user account to connect to the data source. Click ***Finish***.

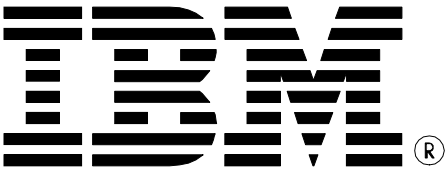


- From the ***Standard Report Creation Wizard*** window, you will see the source database selected above listed under the ***DB2 Unicode*** folder.

  Now you can refer to the appropriate Crystal Reports documentation for information about creating and publishing new reports.



Now that you have completed the installation and configuration of Crystal Reports Server on the InfoSphere Balanced Warehouse C-Class solution, you can consult the Business Objects product documentation for more information about using Crystal Reports Server product for reporting purposes.



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Printed in Canada
04/2008

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