

Deploying IBM[®] Cognos[®] 8
Business Intelligence
Reporting on IBM[®] InfoSphere[™]
Balanced Warehouse C-Class
for Windows[®] and Linux[®]

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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. It allows for Business Intelligence (BI) applications to use such data for analysis, reporting and presenting the business information in order to improve decision making.

IBM Cognos 8 BI Reporting solution provides access to a complete list of self-serve report types enabling you to personalize the style and quality of BI delivered to your key stakeholders. The solution operates from a single metadata layer and provides advanced features such as multilingual reporting, drag-and-drop authoring, interactive visualizations and charting abilities, complex multi-page layouts, and many others. These characteristics make IBM Cognos 8 BI Reporting a great addition to your C-Class solution.

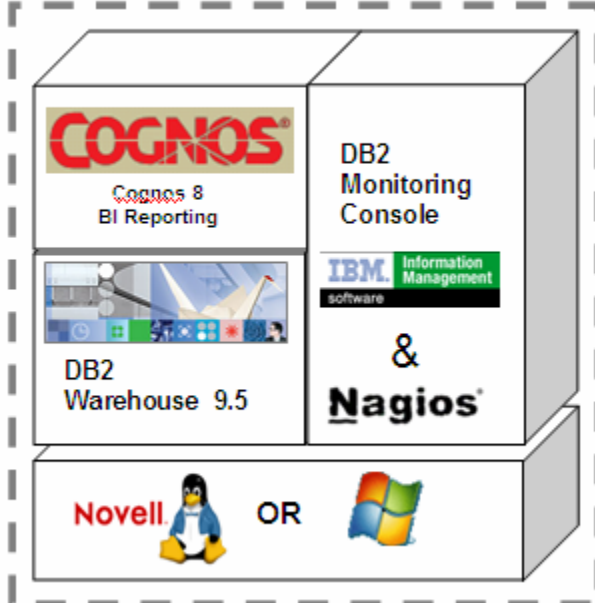
The purpose of this document is to explain the necessary steps to deploy IBM Cognos 8 BI Reporting in an IBM InfoSphere Balanced Warehouse C-Class environment, be it on Windows or Linux platforms.

1.1 Deployment Strategy

Cognos 8 BI Reporting allows the distributions of its components in different machines in order to accommodate different customers' needs and preferences. For example, one could choose to install the gateway on a separate computer. You may choose this option if you have existing Web servers available to handle Cognos component requests. For details on distributing Cognos 8 Reporting components see *Cognos 8 Business Intelligence Installation and Configuration Guide*.

In this document we describe a single-box deployment strategy. It means all Cognos BI Reporting components will be installed in the same server where the C-Class solution is running. See diagram below.

IBM System x / IBM BladeCenter



Product Information Resources

For details on installing and configuring Cognos 8 BI Reporting, refer to the *Cognos 8 Business Intelligence Installation and Configuration Guide*, located in the documentation folder of your Cognos 8 BI Reporting installation CD or image.

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. Deploying Cognos 8 BI Reporting

In this section, we will explain in details all steps necessary to install and set up Cognos 8 BI Reporting on an IBM InfoSphere Balanced Warehouse C-Class environment. The list below provides an overview of the whole process:

- 1) Install Cognos 8 Reporting
- 2) Check the default settings
- 3) Create the content store database
- 4) Create the content store database user
- 5) Set up the database client
- 6) Update the Java environment
- 7) Set up Linux environment variables
- 8) Configure the web server
- 9) Configure Cognos 8 server component properties
- 10) Start the services
- 11) Test the installation

2.1 Pre-requisites

Before proceeding, make sure the following items are true for your environment.

- The C-Class appliance has been successfully deployed in your machine.
- You are logged in with a user account with sufficient privileges (**Administrator** on Windows and **root** on Linux).
- The DB2 server is running. If not, execute the **db2start** command from the command line.
- Apache HTTP server is installed in your computer.
 - In a Linux C-Class environment, Apache is included as part of the SUSE operating system.
 - In a Windows C-Class environment, if you have selected the optional **DB2 Monitoring Console** component during the C-Class deployment, Apache HTTP server is installed for you. Otherwise, you can download the installation package from <http://httpd.apache.org/download.cgi>

2.2 Installing Cognos 8 Reporting

In this step we will use Cognos 8 Installation Wizard to install the reporting components to your computer. The screenshots below were taken from an installation on Windows, but the instructions also apply for installations on the Linux platform. Whenever there are any differences in the instructions for Windows or Linux platforms, we will mark that instruction with either **[WINDOWS]** or **[LINUX]**.

- Insert your Cognos 8 BI Reporting installation CD.
- **[WINDOWS]** Start the installation wizard by executing file `issetup.exe` located under the directory `win32` of your installation disk.

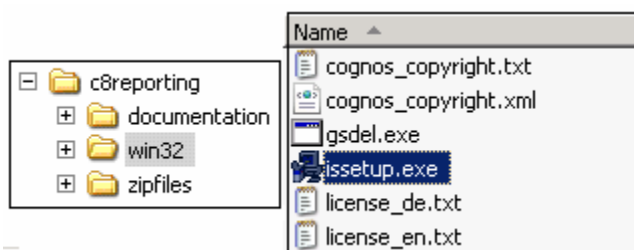


Figure 1 Installation Wizard location (Windows)

- **[LINUX]** Start the installation wizard by executing the file `issetup` located under the `linuxx386` directory of your installation disk.
- The Welcome screen will appear and you can select the wizard language.

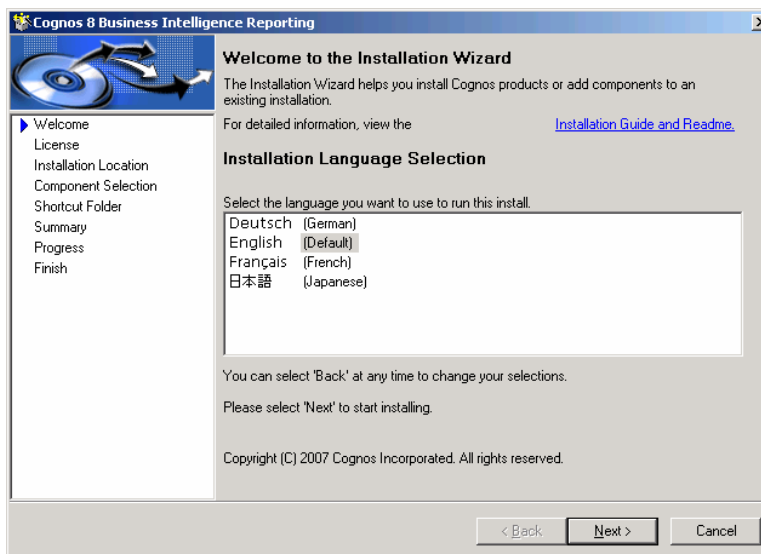


Figure 2 Language selection screen

- Accept the License Agreement on the next screen.

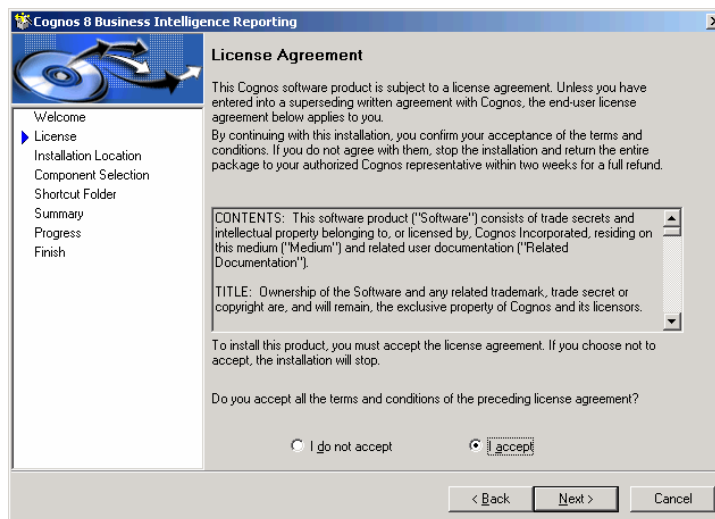


Figure 3 License Agreement screen

- Accept the default installation directory:
 - [WINDOWS] C:\Program Files (x86)\cognos\c8
 - [LINUX] /opt/cognos/c8

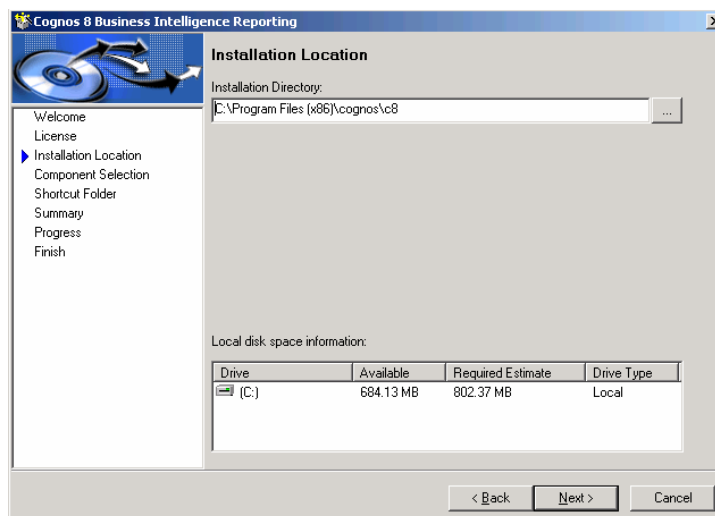


Figure 4 Installation Location screen

- On the next screen, accept the default component selection. This setup will not install the Cognos Content Database (an instance of an Apache Derby database), since we will be using DB2 to store the Content Store database.

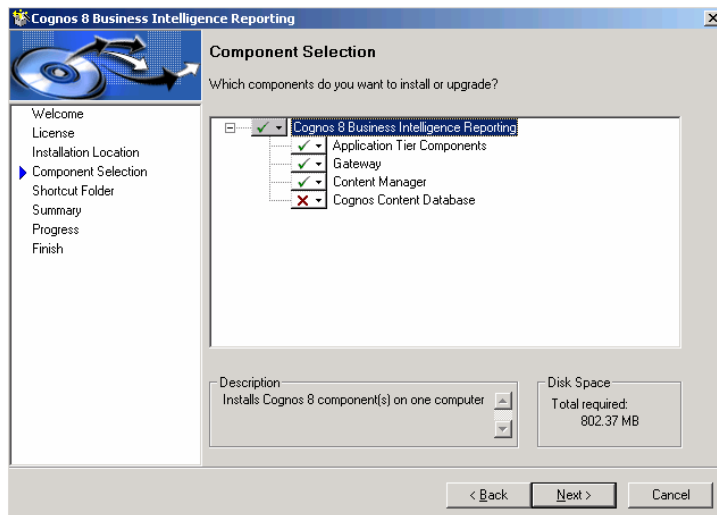


Figure 5 Component Selection screen

- Click next for the next two screen to start the installation.

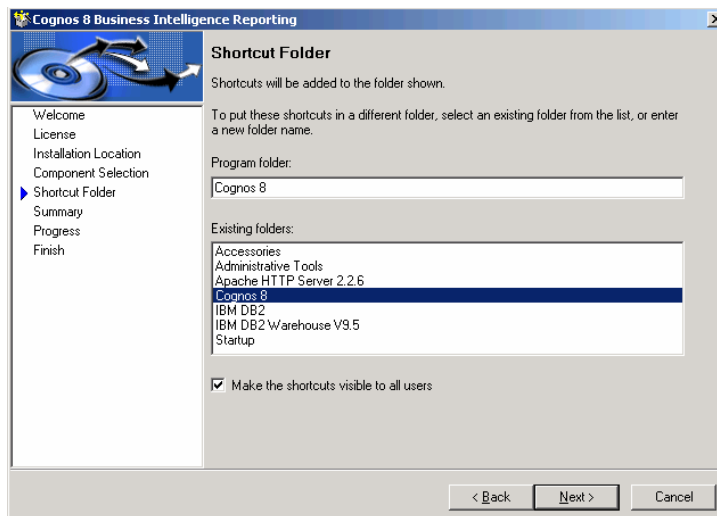


Figure 6 Shortcut folder screen

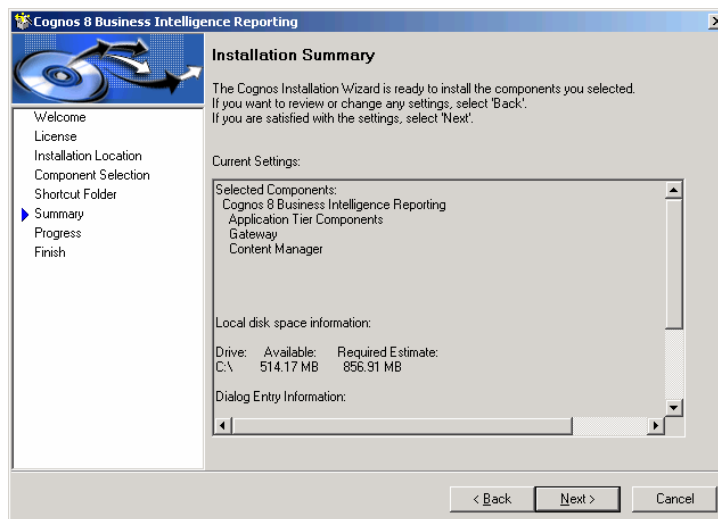


Figure 7 Installation summary screen

- Wait until all components are installed to your machine.

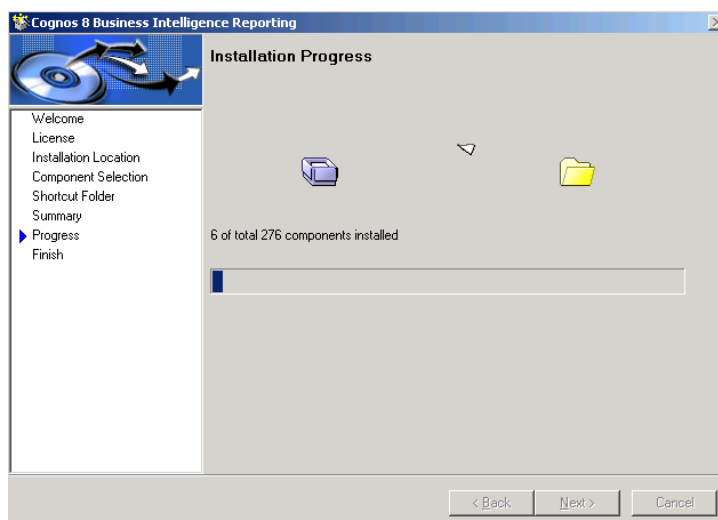


Figure 8 Installation progress screen

- Click finish to exit the wizard, but don't start the Cognos Configuration tool yet. First you will need to set up the environment as described in the next sections.

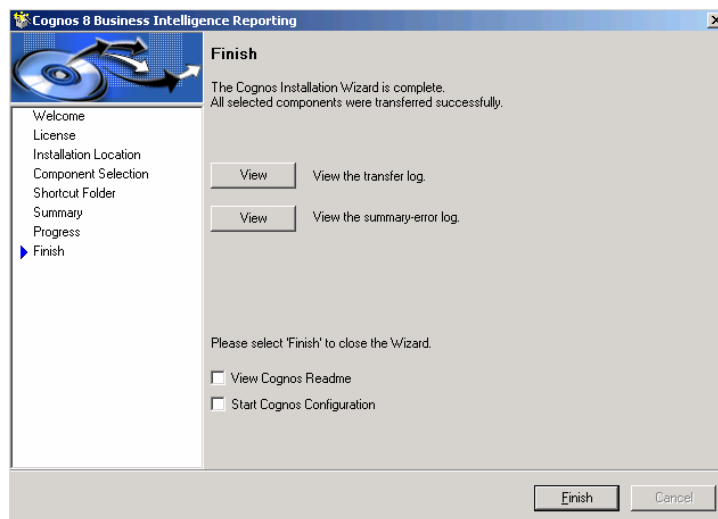


Figure 9 Installation finish screen

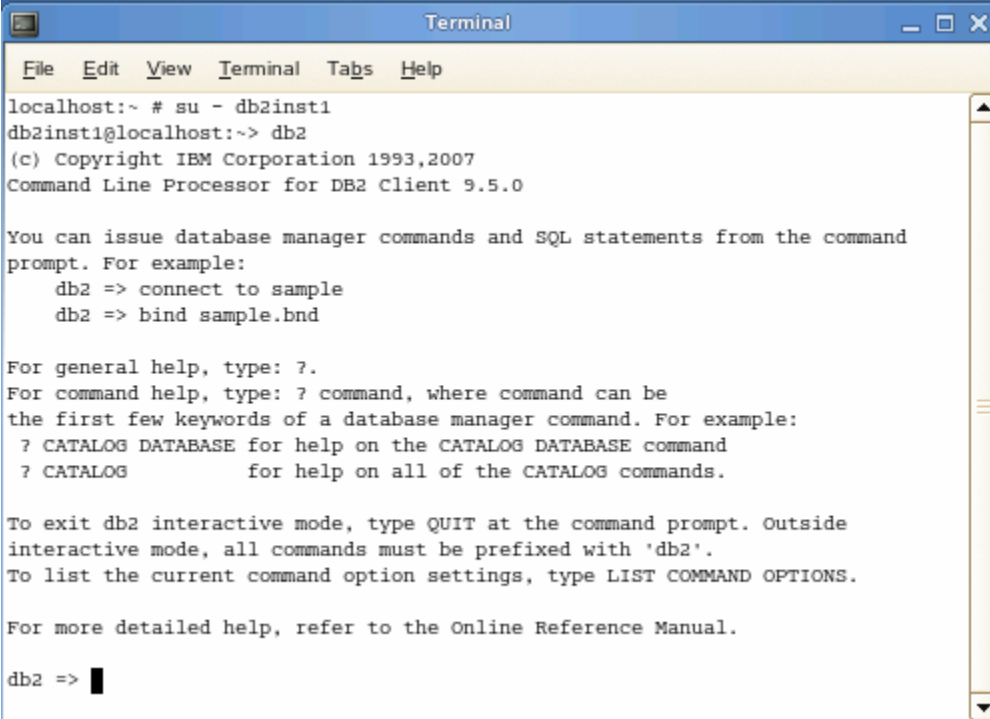
2.3 Setting Up the Environment

This section will describe the necessary tasks to set up your system for Cognos 8 BI Reporting.

2.3.1 Create the Content Store Database

The content store is a database that Content Manager uses to store global configuration data, global settings (such as the language and currency formats shown in the user interface), connections to data sources, and product-specific content.

- Open the DB2 CLP (Command Line Processor):
 - [WINDOWS] Access **Start → All Programs → IBM DB2 → DB2WCOPY01 (Default) → Command Line Tools → Command Line Processor.**
 - [LINUX] From a terminal window, type the following commands:
 - **su db2inst1** → Switches to **db2inst1** user.
 - **db2** → Starts DB2 CLP.



```

localhost:~ # su - db2inst1
db2inst1@localhost:~> db2
(c) Copyright IBM Corporation 1993,2007
Command Line Processor for DB2 Client 9.5.0

You can issue database manager commands and SQL statements from the command
prompt. For example:
  db2 => connect to sample
  db2 => bind sample.bnd

For general help, type: ?.
For command help, type: ? command, where command can be
the first few keywords of a database manager command. For example:
  ? CATALOG DATABASE for help on the CATALOG DATABASE command
  ? CATALOG           for help on all of the CATALOG commands.

To exit db2 interactive mode, type QUIT at the command prompt. Outside
interactive mode, all commands must be prefixed with 'db2'.
To list the current command option settings, type LIST COMMAND OPTIONS.

For more detailed help, refer to the Online Reference Manual.

db2 => █

```

Figure 10 Starting DB2 CLP on Linux

- Create the Content Store database:

```
db2 => CREATE DATABASE <dbName> AUTOMATIC STORAGE YES ON
'<storagePath>' COLLATE USING SYSTEM PAGESIZE 4 K
```

<dbName> is the user-defined name of the Content Store database.

<storagePath> is a list of paths that will be used to table space containers where for automatic storage table spaces.

[LINUX] This value is always **/db2fs**

[WINDOWS] This will be the list of drive letters that are used for database storage.

E.g.: a C3000_500GB configuration has 2 drive letters mapped to the external storage, so you would use the value **D: , E:**.

E.g.: C1000_50GB, C1000_100GB and C1000_150GB configurations have no external storage, so you would use the value **C:**.

```

C:\DB2 CLP - DB2WCOPY01 - db2
C:\Program Files\IBM\dwe\SQLLIB\BIN>db2
(c) Copyright IBM Corporation 1993,2007
Command Line Processor for DB2 Client 9.5.0

You can issue database manager commands and SQL statements from the command
prompt. For example:
    db2 => connect to sample
    db2 => bind sample.bnd

For general help, type: ?.
For command help, type: ? command, where command can be
the first few keywords of a database manager command. For example:
? CATALOG DATABASE for help on the CATALOG DATABASE command
? CATALOG           for help on all of the CATALOG commands.

To exit db2 interactive mode, type QUIT at the command prompt. Outside
interactive mode, all commands must be prefixed with 'db2'.
To list the current command option settings, type LIST COMMAND OPTIONS.

For more detailed help, refer to the Online Reference Manual.

db2 => CREATE DATABASE c8store AUTOMATIC STORAGE YES ON 'D:,E:' PAGESIZE 4096_
DB200001 The CREATE DATABASE command completed successfully.
db2 => _

```

Figure 11 Creating Content Store database

- Next, connect to the newly created database and perform the following tasks:

```
db2 => CONNECT TO <dbName>
```

<dbName> is the user-defined name of the Content Store database

- Create a 32KB size bufferpool;

```
db2 => CREATE BUFFERPOOL BP_32K IMMEDIATE SIZE AUTOMATIC
PAGESIZE 32 K
```

- Create a user temporary table space with a page size of 4KB;

```
db2 => CREATE USER TEMPORARY TABLESPACE TS_USER_TEMP
PAGESIZE 4 K MANAGED BY AUTOMATIC STORAGE EXTENTSIZE 32
PREFETCHSIZE 32 OVERHEAD 5.5 TRANSFERRATE 0.03 BUFFERPOOL
IBMDEFAULTBP NO FILE SYSTEM CACHING
```

- Create a system temporary table space with a page size of 32KB;

```
db2 => CREATE SYSTEM TEMPORARY TABLESPACE TS_SYSTEM_TEMP
PAGESIZE 32 K MANAGED BY AUTOMATIC STORAGE EXTENTSIZE 4
PREFETCHSIZE 4 OVERHEAD 5.5 TRANSFERRATE 0.03 BUFFERPOOL
BP_32K NO FILE SYSTEM CACHING
```

- Update the “locktimeout” parameter to 240 seconds.

```
db2 => UPDATE DB CFG FOR <dbName> USING locktimeout 240
```

<dbName> is the user-defined name of the Content Store database.

```

C:\DB2 CLP - DB2WCOPY01 - db2
db2 => CREATE DATABASE c8store AUTOMATIC STORAGE YES ON 'D:,E:' PAGESIZE 4096
DB20000I The CREATE DATABASE command completed successfully.
db2 => CONNECT TO c8store

Database Connection Information

Database server          = DB2/NT64 9.5.0
SQL authorization ID    = ADMINIST...
Local database alias    = C8STORE

db2 => CREATE BUFFERPOOL BP_32K IMMEDIATE SIZE AUTOMATIC PAGESIZE 32768
DB20000I The SQL command completed successfully.
db2 => CREATE USER TEMPORARY TABLESPACE TS_USER_TEMP PAGESIZE 4 K MANAGED BY AUT
OMATIC STORAGE EXTENTSIZE 16 PREFETCHSIZE 16 OVERHEAD 3.69 TRANSFERRATE 0.07 BUF
FERPOOL IBMDEFAULTBP NO FILE SYSTEM CACHING
DB20000I The SQL command completed successfully.
db2 => CREATE SYSTEM TEMPORARY TABLESPACE TS_SYSTEM_TEMP PAGESIZE 32 K MANAGED B
Y AUTOMATIC STORAGE EXTENTSIZE 16 PREFETCHSIZE 16 OVERHEAD 3.69 TRANSFERRATE 0.0
7 BUFFERPOOL BP_32K NO FILE SYSTEM CACHING
DB20000I The SQL command completed successfully.
db2 => UPDATE DB CFG FOR c8store USING locktimeout 240
DB20000I The UPDATE DATABASE CONFIGURATION command completed successfully.
SQL1363W One or more of the parameters submitted for immediate modification
were not changed dynamically. For these configuration parameters, all
applications must disconnect from this database before the changes become
effective.
db2 =>

```

Figure 12 Setting up Content Store database

- Disconnect from the database and exit DB2 CLP.

```
db2 => terminate
```

- From the command line, restart the DB2 instance using the commands:

```
db2stop force
db2start
```

```

db2 => CONNECT RESET
DB20000I The SQL command completed successfully.
db2 => quit
DB20000I The QUIT command completed successfully.

C:\Documents and Settings\Administrator>db2stop force
06/02/2008 15:06:51 0 0 SQL1064N DB2STOP processing was successful.
06/02/2008 15:06:52 1 0 SQL1064N DB2STOP processing was successful.
SQL1064N DB2STOP processing was successful.

C:\Documents and Settings\Administrator>db2start
06/02/2008 15:06:57 0 0 SQL1063N DB2START processing was successful.
06/02/2008 15:06:57 1 0 SQL1063N DB2START processing was successful.
SQL1063N DB2START processing was successful.

C:\Documents and Settings\Administrator>

```

Figure 13 Restarting the DB2 instance

2.3.2 Create Content Store user account

The next step is to create the user account that Cognos 8 will use to access the Content Store database.

- [WINDOWS] Access Windows' Computer Management application at **Start → Administrative Tasks → Computer Management**. Then, click on the **System Tools → Local Users and Groups → Users** node on the left side tree. You should see a list of users in the right panel. Access the menu **Action → New User...** A window will open where you can type in the Cognos 8 user information. Make sure you uncheck the option **"User must change password at next logon"**. Click the **Create** button to create the new user.

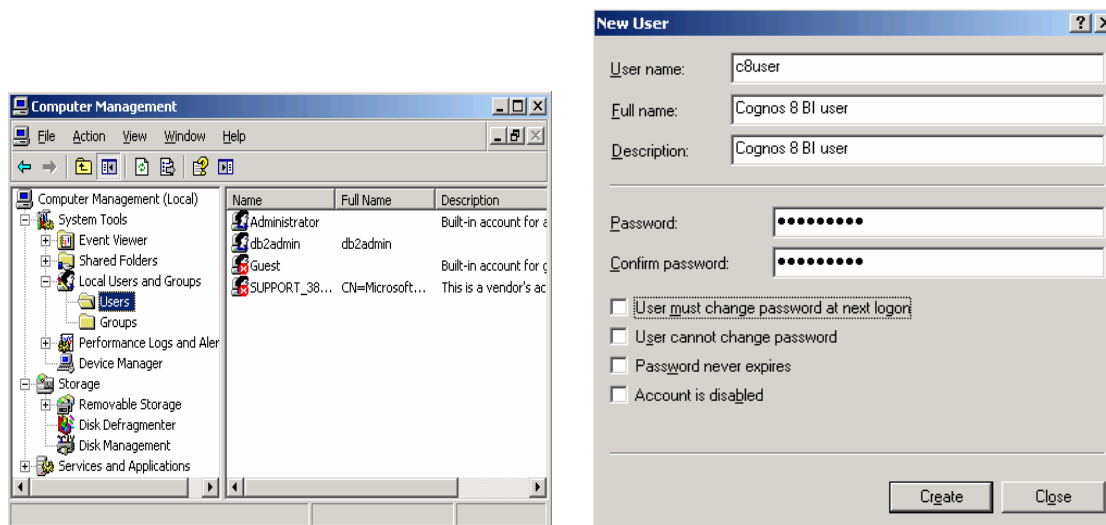


Figure 14 Cognos 8 user creation on Windows

- [LINUX] From the terminal console (root account), use the following commands to create the Cognos 8 user account, which belongs to the **db2grp1** group, and set a password for it:

```
localhost:~ # useradd -gdb2grp1 <username>
localhost:~ # passwd <username>
```

<userName> the new Cognos 8 user's name.

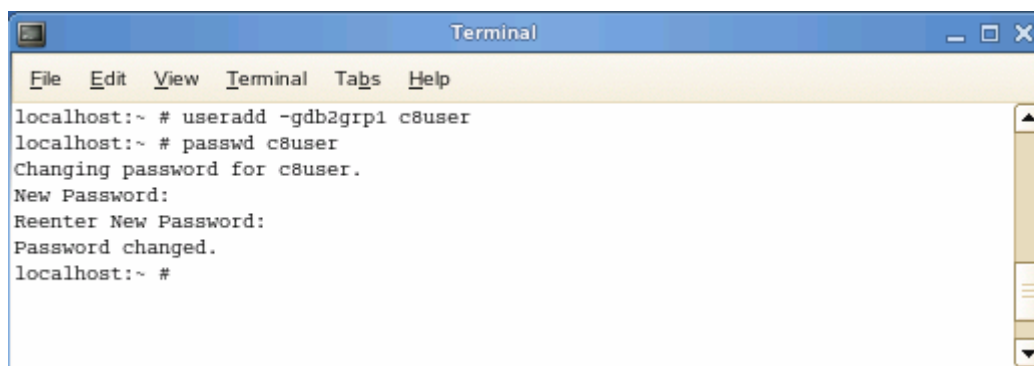


Figure 15 Cognos 8 user creation on Linux

- Again, using DB2 CLP, grant the newly created user with the following DB2 privileges to the Content Store database.

```

db2 => CONNECT TO <dbName>
db2 => GRANT CREATETAB, CONNECT, IMPLICIT_SCHEMA ON
DATABASE TO USER <userName>
db2 => GRANT USE OF TABLESPACE TS_USER_TEMP TO USER
<username> WITH GRANT OPTION
db2 => GRANT USE OF TABLESPACE USERSPACE1 TO USER
<userName> WITH GRANT OPTION
db2 => terminate

```

<dbName> name of your Content Store database

<userName> Cognos 8 user's name.

```

C:\ DB2 CLP - DB2WCOPY01 - db2
the first few keywords of a database manager command. For example:
? CATALOG DATABASE for help on the CATALOG DATABASE command
? CATALOG          for help on all of the CATALOG commands.

To exit db2 interactive mode, type QUIT at the command prompt. Outside
interactive mode, all commands must be prefixed with 'db2'.
To list the current command option settings, type LIST COMMAND OPTIONS.

For more detailed help, refer to the Online Reference Manual.

db2 => connect to c8store

      Database Connection Information

Database server      = DB2/NT64 9.5.0
SQL authorization ID = ADMINIST...
Local database alias = C8STORE

db2 => GRANT CREATETAB, CONNECT, IMPLICIT_SCHEMA ON DATABASE TO USER c8user
DB20000I The SQL command completed successfully.
db2 => GRANT USE OF TABLESPACE TS_USER_TEMP TO USER c8user WITH GRANT OPTION
DB20000I The SQL command completed successfully.
db2 => GRANT USE OF TABLESPACE USERSPACE1 TO USER c8user WITH GRANT OPTION
DB20000I The SQL command completed successfully.
db2 =>

```

Figure 16 Granting privileges to Cognos user

2.3.3 Set up the Database Client

Our purpose in this section is to set up database client and the JDBC driver. In our case, both the Content Manager and the DB2 server are running in the same machine, which means we don't need any extra set up for the DB2 client.

As for the JDBC driver, follow the steps below:

- [WINDOWS] Copy the DB2 JDBC driver file to the “**lib**” directory of Cognos web components.
 - Source: C:\<progFilesDir>\IBM\dwe\SQLLIB\java\db2java.zip
 - Target: C:\<progFilesx86Dir>\cognos\c8\webapps\p2pd\WEB-INF\lib

<progFilesDir> the Windows “Program Files” directory

<progFilesx86Dir> the Windows “Program Files (x86)” directory

- [LINUX] Copy the DB2 JDBC driver file to the “lib” directory of Cognos web components.
 - Source: /opt/ibm/dwe/V9.5/db2/V9.5/java/db2java.zip
 - Target: /opt/cognos/c8/webapps/p2pd/WEB-INF/lib
- Rename the **db2java.zip** file in the target directory to **db2java.jar**.

2.3.4 Update the Java Environment

Cognos 8 cryptographic services use a specific .jar (Java Archive) file named “**bcprov-jdknn-*nnn*.jar**” that must be placed in your Java Runtime Environment (JRE). This file provides additional encryption and decryption routines that are not part of a default JVM (Java Virtual Machine) installation.

On Windows, the Cognos 8 BI Reporting installation includes a JRE, thus you can skip this section if you want to use the provided JRE. In case you want to set another JRE to be used by Cognos, follow the instructions below:

- [WINDOWS] Access **Start → Control Panel → System** to open the System Properties window. Go to the **Advanced** tab and click the **Environment Variables** button. Create (if it does not exist yet) the **JAVA_HOME** variable under **System Variables** section.

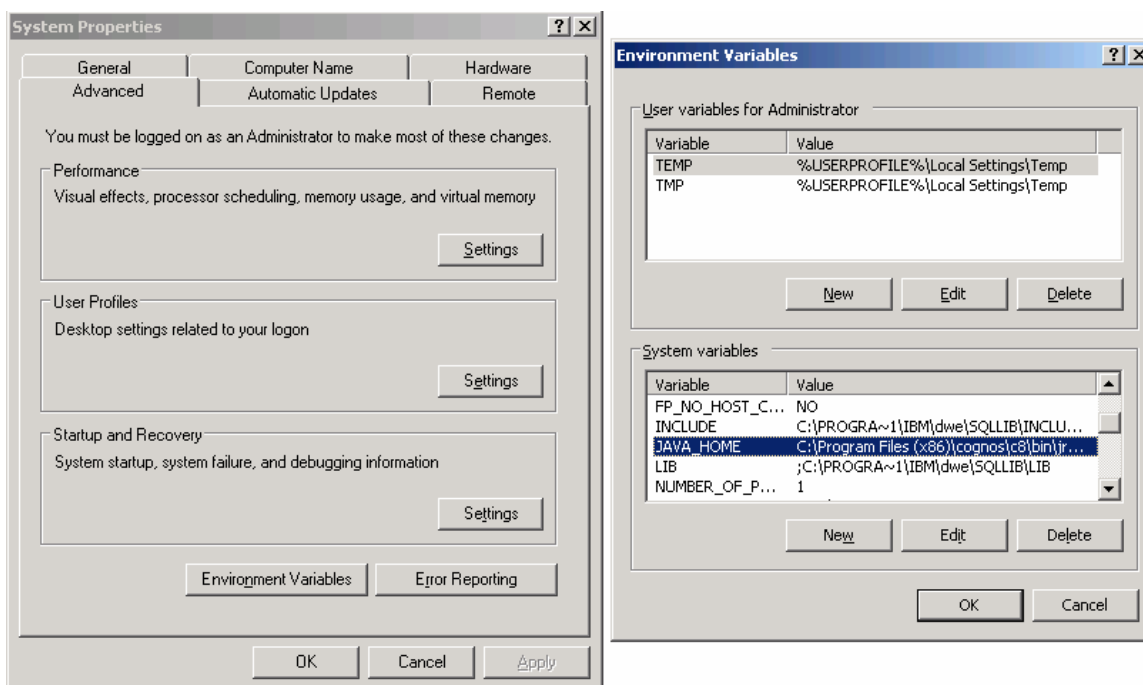


Figure 17 Defining the JAVA_HOME variable

- [WINDOWS] Copy the **bcprov-jdknn-*nnn*.jar** file to your JVM's **lib\ext** directory.
 - Source: `C:\<progFilesx86Dir>\cognos\c8\bin\jre\1.5.0\lib\ext\bcprov-jdknn-nnn.jar`
 - Target: `<JAVA_HOME>\lib\ext`

<progFilesx86Dir> is the Windows "Program Files (x86)" directory

<JAVA_HOME> is your JVM home directory

On Linux, there is no default JRE bundled with Cognos 8 installation, so you will need to set up your system as follows:

- [LINUX] Using the **YaST** tool, install Sun's Java Virtual Machine. The RPMs can be found either in the SLES installation DVD or the C-Class Partners Toolkit for Linux DVD. You will need to install the following RPMs:
 - `java-1_4_2-sun-devel-1.4.2.13-0.2`
 - `java-1_4_2-sun-1.4.2.13-0.2`

NOTE: For detailed instructions on how to install Sun's Java Virtual Machine RPMs, please see Appendix A - Installing Sun's JVM 1.4.2.

- [LINUX] Copy the **bcprov-jdknn-*nnn*.jar** file to the JVM's **lib\ext** directory.
 - Source: `/opt/cognos/c8/bin/jre/1.5.0/lib/ext/bcprov-jdknn-nnn.jar`
 - Target: `/usr/lib/jvm/java-1_4_2-sun-1.4.2.13/jre/lib/ext`
- [LINUX] Setting the **JAVA_HOME** variable will be explained in section 2.3.5 together with other necessary environment variables.

2.3.5 Configure Linux Environment Variables

In this step, we will set the value of some environment variables necessary to the Cognos 8 BI Reporting application. We also want to make sure that:

- 1) The variables will be set every time the user logs into the system and not only for the current session;
- 2) They will be set to all users that need it.

Error! Reference source not found. lists the variables and the respective values to be set along with the users that will need them.

Variable	Value	Users
PATH	<code>/usr/lib/jvm/java-1_4_2-sun-1.4.2.13/jre/bin</code>	root <c8User>
LD_LIBRARY_PATH	<code>/opt/cognos/c8/cgi-bin:/opt/ibm/dwe/V9.5/db2/V9.5/lib32</code>	root <c8User>
JAVA_HOME	<code>/usr/lib/jvm/java-1_4_2-sun-1.4.2.13/jre</code>	root <c8User>
<i><c8User> is the Cognos user you created in section 2.3.2.</i>		

Table 1 Environment variables for Linux

The following steps will guide you to properly set up the environment variables:

- [LINUX] From the terminal console (root user), type the following command to open the **vi** editor and edit file `"/root/.bashrc"`:

```
localhost:~ # vi /root/.bashrc
```

- Type `"i"` to go to INSERT mode.
- Type in the following text:

```
PATH=/usr/lib/jvm/java-1_4_2-sun-1.4.2.13/jre/bin:${PATH}
export PATH
LD_LIBRARY_PATH=/opt/ibm/dwe/V9.5/db2/V9.5/lib32
export LD_LIBRARY_PATH
JAVA_HOME=/usr/lib/jvm/java-1_4_2-sun-1.4.2.13/jre
export JAVA_HOME
```

- Save the file and exit **vi** (Press the **ESC** key, then type `":wq"` and press **ENTER**).

IMPORTANT NOTE: *We didn't include the `"/opt/cognos/c8/cgi-bin"` because it causes Firefox not to work properly. Therefore, you will need to add it manually every time you need to use the Cognos Configuration tool.*

- Since we also the Cognos user to have access to the same functionality, we need to repeat the same procedure using file `"/home/<c8User>/.bashrc"`, where `<c8User>` is the Cognos user id.
- Finally, apply the configuration you just created, and manually add the missing value to the LD_LIBRARY_PATH.

```
localhost:~ # . /root/.bashrc
localhost:~ # LD_LIBRARY_PATH=/opt/cognos/c8/bin:$LD_LIBRAR
Y_PATH
```

```
localhost:~ # export LD_LIBRARY_PATH
```

2.3.6 Configure the Web Server

Before you can access any of the Cognos 8 web applications, you must configure your Web server. For our C-Class environment, the web server in question is the Apache HTTP server. For a Linux C-Class environment, it is installed as part of the SLES operating system. For a Windows C-Class environment it is installed as well when you select the DB2 Monitoring Console component.

You will need to configure the virtual directories for the directories containing Cognos 8 web files as depicted in the following table:

Alias	Directory	Permission
cognos8	[WINDOWS] C: / <progFilesx86> / cognos / c8 / webcontent [LINUX] / opt / cognos / c8 / webcontent	Read
cognos8/cgi-bin	[WINDOWS] C: / <progFilesx86> / cognos / c8 / cgi-bin [LINUX] / opt / cognos / c8 / cgi-bin	Execute

- Open the **httpd.conf** file in a text editor.
 - [WINDOWS] C: \ <progFilesx86> \ Apache Software Foundation \ Apache2.2 \ conf \ httpd.conf
 - [LINUX] / etc / apache2 / httpd.conf
- Add the text below to the end of the **httpd.conf** file. Note that **<cognosInstallDir>** will vary according to your operating system:
 - [WINDOWS] C: / <progFilesx86> / cognos / c8
 - Where **<progFilesx86>** is the Windows “Program Files (x86)” directory.
 - Note that you should use “/” and not “\” as path separator
 - [LINUX] / opt / cognos / c8

```
ScriptAlias /cognos8/cgi-bin "<cognosInstallDir>/cgi-bin"
<Directory "<cognosInstallDir>/cgi-bin">
    Options ExecCGI
    Allow from all
</Directory>

Alias /cognos8 "<cognosInstallDir>/webcontent"
```

```
<Directory "<cognosInstallDir>/webcontent">
  Options Indexes MultiViews
  Allow from all
</Directory>

DirectoryIndex index.html
```

- Save your changes to the file and exit the text editor.
- [WINDOWS] Restart Apache HTTP Server by accessing **Start → All Programs → Apache HTTP Server 2.2.x → Control Apache Server → Restart**
- [LINUX] Restart the Apache HTTP Server by running the following command on the terminal console:

```
localhost:~ # /etc/init.d/apache2 restart
```

NOTE: The Apache configuration provided above is not concerned about the security of files served by the Apache HTTP server. Please contact your system administrator in order to fine tune Apache's configuration to comply with the security policies of your environment.

2.4 Configuring Cognos 8 Server Components

In this section, you will run the Cognos 8 Configuration Tool in order to set up Cognos 8 components.

2.4.1 Cognos Configuration

You can use Cognos Configuration Tool to set up the server components of Cognos 8 BI Reporting suite. For now, you will use this tool to set up the connection properties to the Content Store database you create in a previous, and optionally configure a mail server and notification database.

- Start the Cognos Configuration Tool
 - [WINDOWS] Access the menu **Start → All Programs → Cognos 8 → Cognos Configuration**
 - [LINUX] Execute the command:

```
localhost:~ # /opt/cognos/c8/bin/cogconfig.sh
```

- When the application is open, you can see on the left-hand side the “Explorer” window which gives you access to all configuration items organized as a tree. When you select any item in the Explorer tree, the panel on the right-hand side will display a table containing the related properties and their corresponding value. To modify a property, just click on its value and alter it as you like.
- In the Explorer window, under **Data Access → Content Manager** you will find the item **Content Store**, which is a default configuration created for you. Right-

click the **Content Store** item and click Delete. Content Manager must be configured to access only one content store.

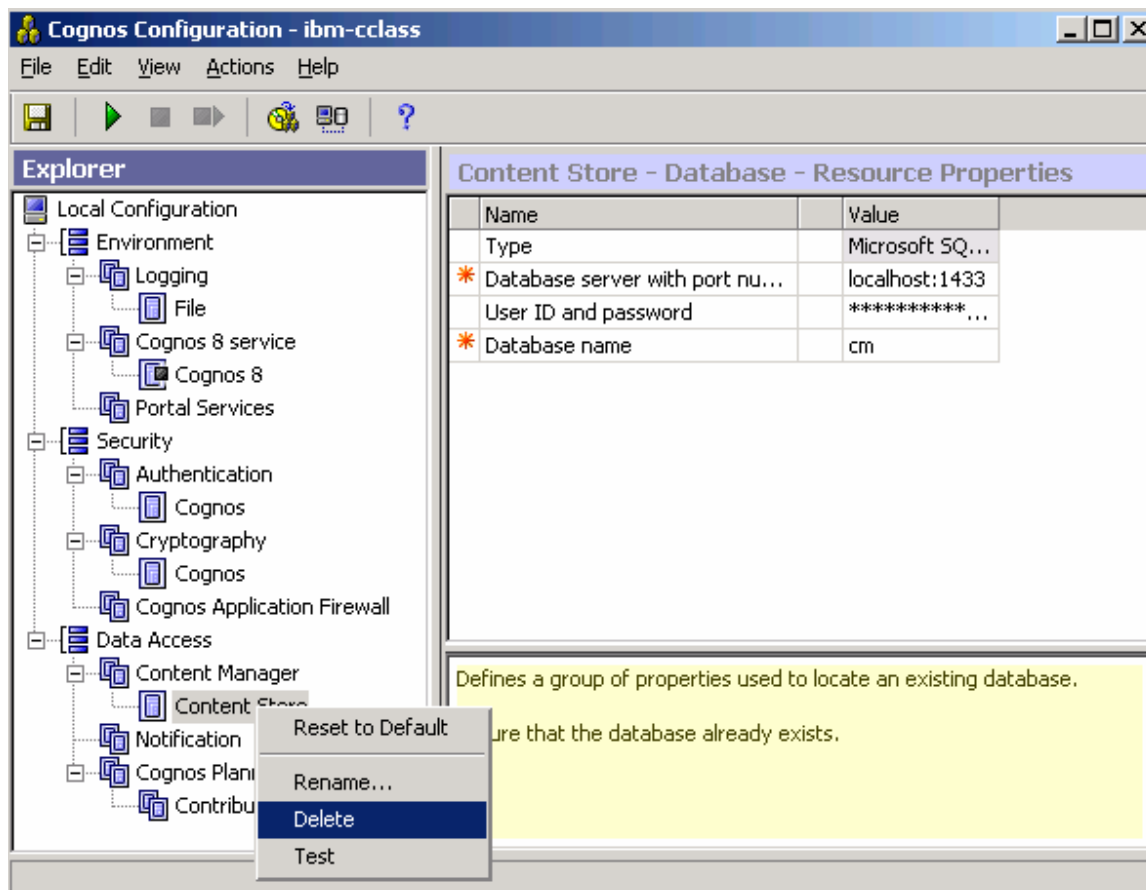


Figure 18 Delete the default Content Store configuration

- Right-click the **Content Manager** item and then click **New resource** → **Database**
 - In the **Name** box, type a name for the resource.
 - In the **Type** box, select **DB2 database**

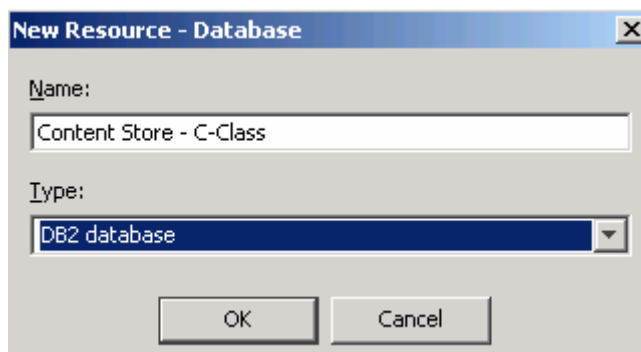


Figure 19 Create Content Store resource

- In the Properties window, provide the appropriate values
 - **Database name:** the name of your content store database
 - **User ID and password:** name and password of the user you created in section 0.

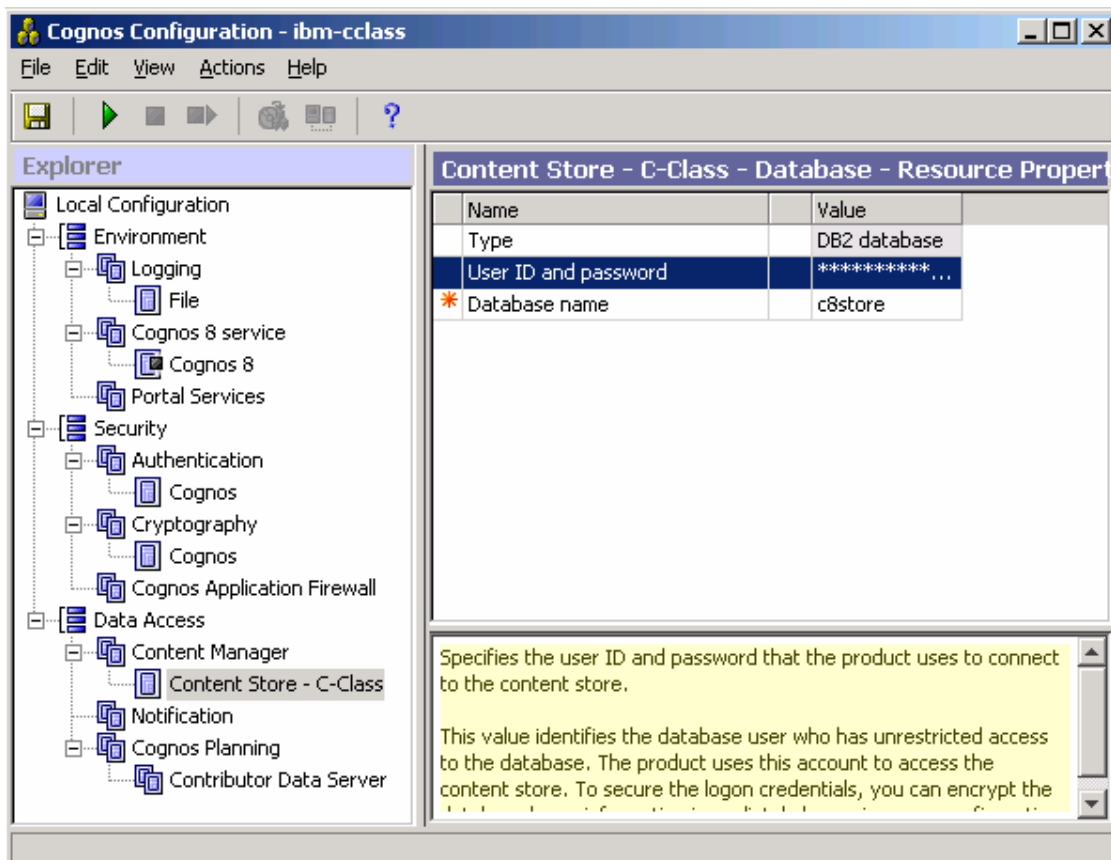


Figure 20 Content Store setup window

- Now that you entered all the connection properties, you should test them to make sure there are no errors. In the Explorer window, right-click on the Content Store

resource you created and click **Test**. *NOTE:* make sure your DB2 data server is running.

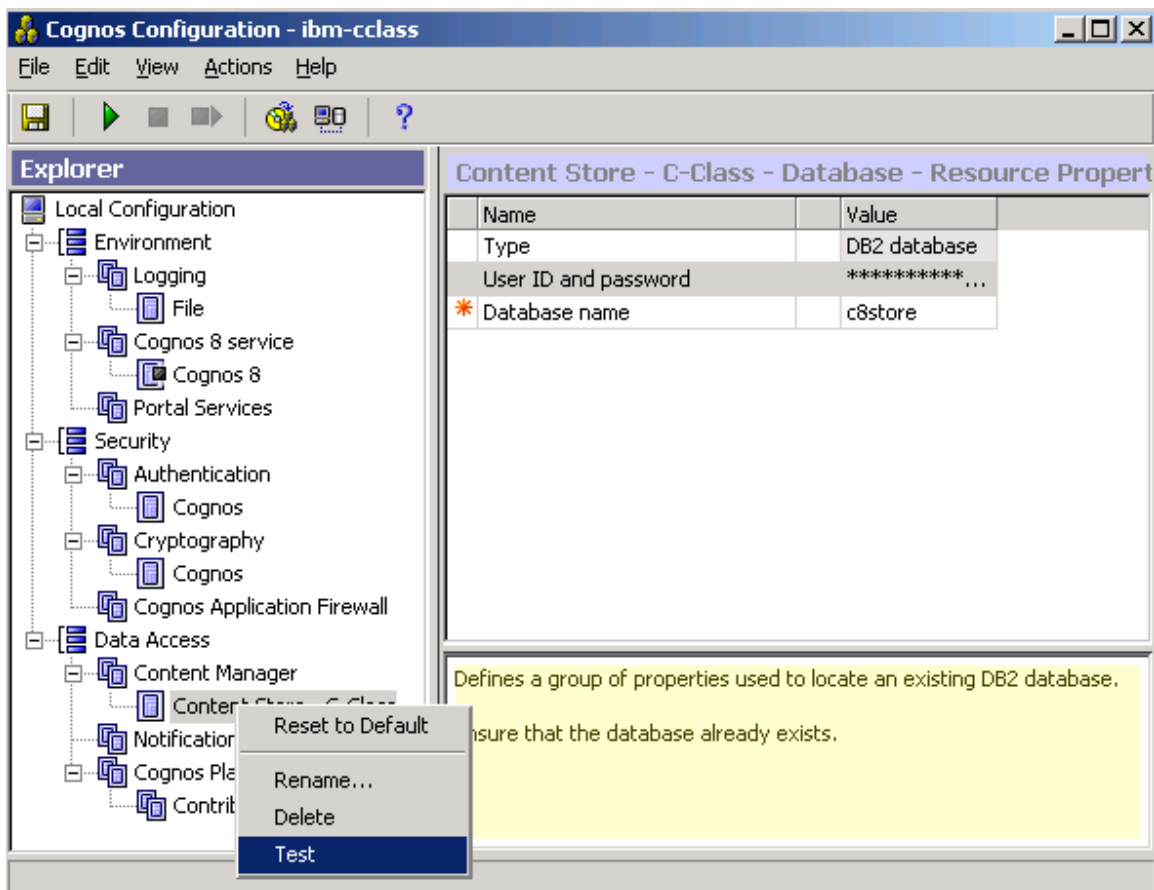


Figure 21 Testing connection to Content Store

- Since this is the first time you are executing the tool, it will first encrypt your logon credentials and then test the connection to the Content Store database. You should see the success window as in Figure 22. If you get an error message, click the details button for more information on how to fix it. If necessary retype the user/password information and database name to make sure you have the proper values set up.



Figure 22 Connection test successful

- Optionally, if you want the Cognos application to send reports by email you must set up an email server account. In the Explorer window, click on **Data Access** → **Notification** and enter your email server properties on the right-hand side panel.
 - Just as you did if the Content Store setup, you can right-click on the **Notification** node and then **Test** in order to test the connection to your email server.

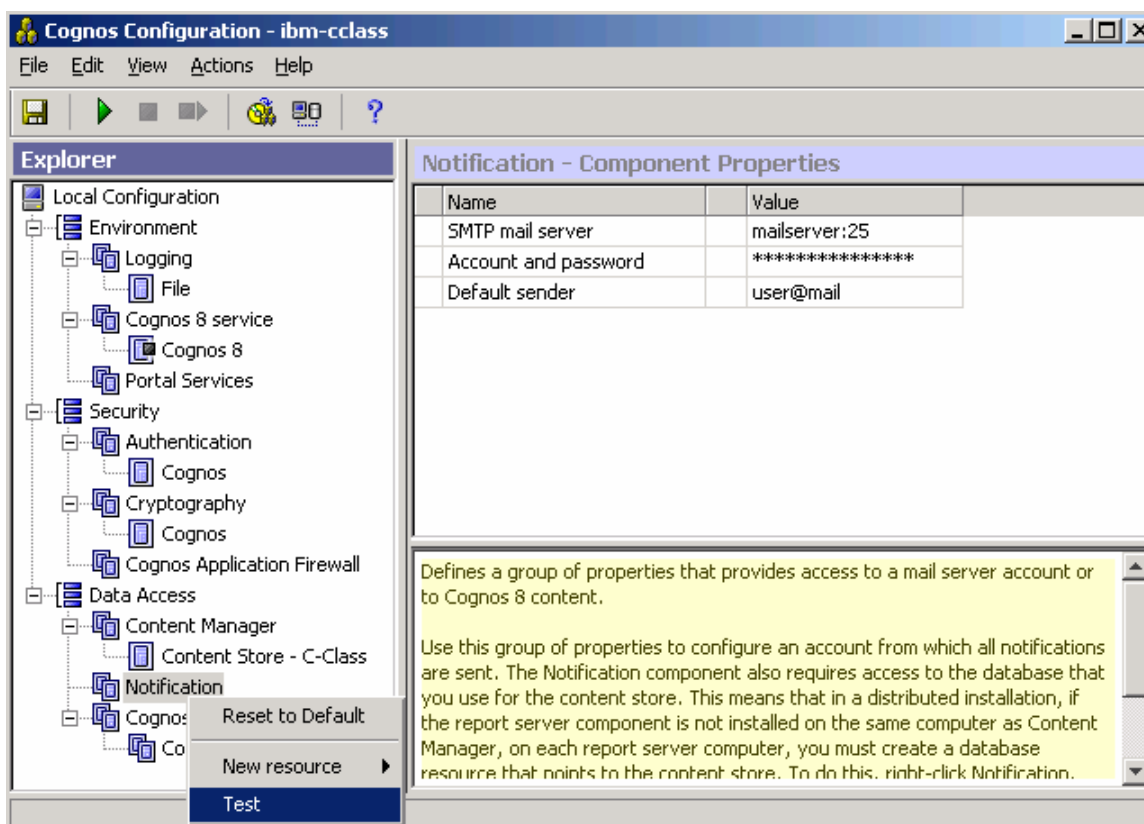


Figure 23 Setting up a email server account

- Now it is time to test the Cognos 8 configuration as a whole. In the Explorer window, click on **Local Configuration**. Then again, right-click it and click on **Test**. A window will open showing the test progress. This operation might take a while to complete.

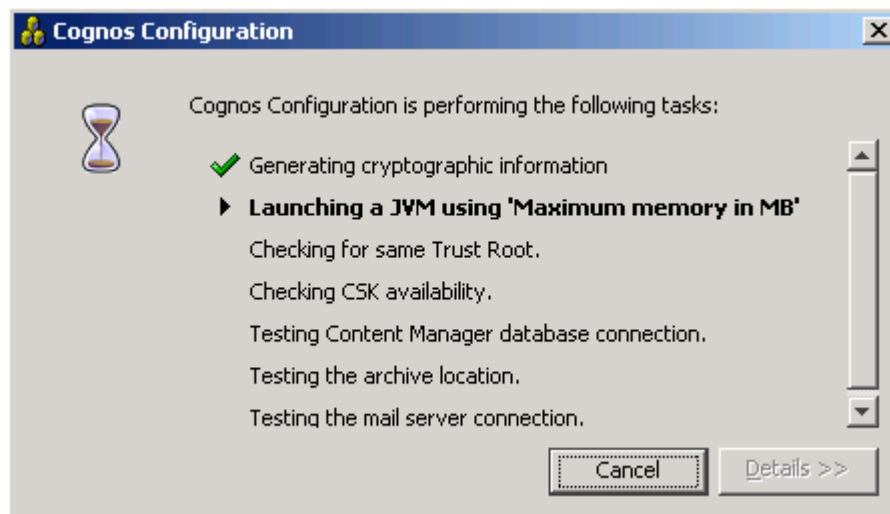


Figure 24 Local configuration test

- From the **File** menu, click **Save**. It will open a window showing the task progress.

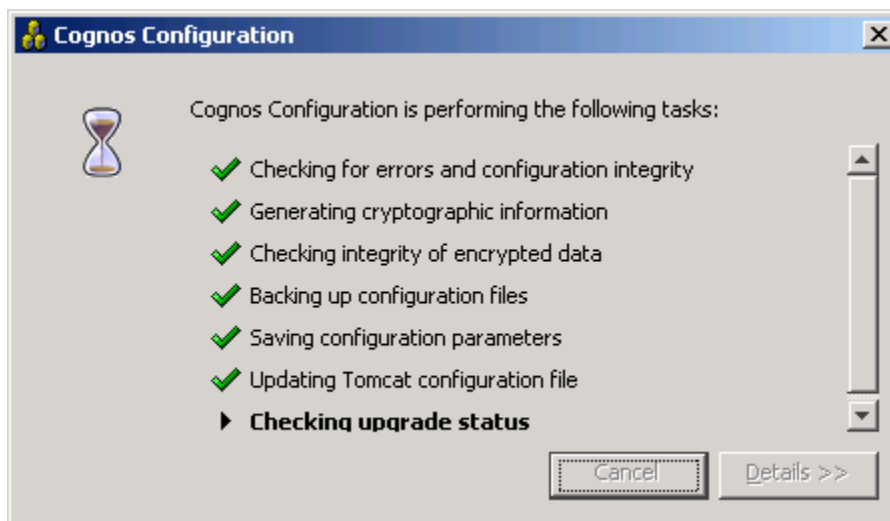



Figure 25 Save configuration task in progress

2.5 Starting Cognos 8 Service

Now that your Cognos 8 configuration is completed and tested, you can start Cognos 8 service. For that, you will use the Cognos Configuration tool again.

- From the Cognos Configuration tool, click on the **Start** button  located in the application toolbar. That will open window showing the task progress. If you want to more information of what is happening during the service initialization process, click the **Details** button.

NOTE: The very first time you start the Cognos 8 service, it will take longer to execute because the application will initialize the content store database.

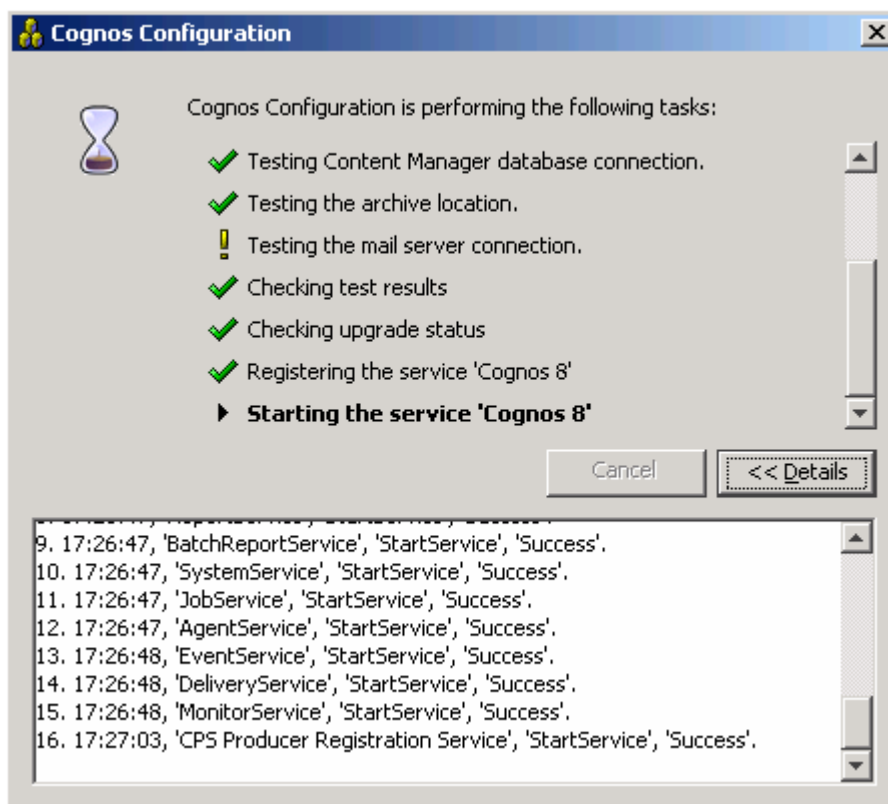
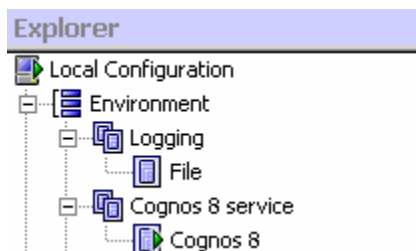


Figure 26 Starting Cognos 8 service

- After the service is initialized you will notice that some icons in the Explorer tree have a green arrow to indicate the new status.



- Similarly, to stop Cognos 8 service click the **Stop** button . To stop and start again the service, click Restart button .

2.5.1 Automatic start of Cognos 8 service

If you want to have the Cognos 8 service automatically started during the operating system's boot sequence, follow the instructions below. Otherwise, you will have to manually start the service every time you need to access Cognos 8 components.

- Open a text editor and create a file named `cognos` under the `/etc/init.d` directory. You can find the contents for this file in Appendix B - `/etc/init.d/cognos`
- .
- Similarly, create a file named `cognos` under the `/etc/sysconfig` directory. You can find the contents for this file in Appendix C - `/etc/sysconfig/cognos`.
- Execute the command below to add the Cognos 8 service to the boot order of SLES.

```
localhost:~ # chkconfig -a cognos
```

- Execute the command below to create a soft link to the Cognos 8 service file.

```
localhost:~ # ln -s /etc/init.d/cognos /usr/sbin/rccognos
```

- After rebooting your system, Cognos 8 service will be automatically started. You can use the following commands to start, stop or get the status of the service:
 - o `rccognos start`
 - o `rccognos stop`
 - o `rccognos status`

3. Deploying Cognos 8 Samples

The Cognos 8 samples illustrate product features and technical and business best practices. You can also use them for experimenting with and sharing report design techniques, and for troubleshooting.

In this section we go through the steps necessary to properly install and set up Cognos 8 samples.

3.1 Install Cognos 8 Samples

Follow the instructions below to install Cognos 8 Samples

- Insert the Cognos 8 BI Samples CD.
- [WINDOWS] Start the installation wizard by executing file `issetup.exe` located under the directory `win32` of your installation disk.

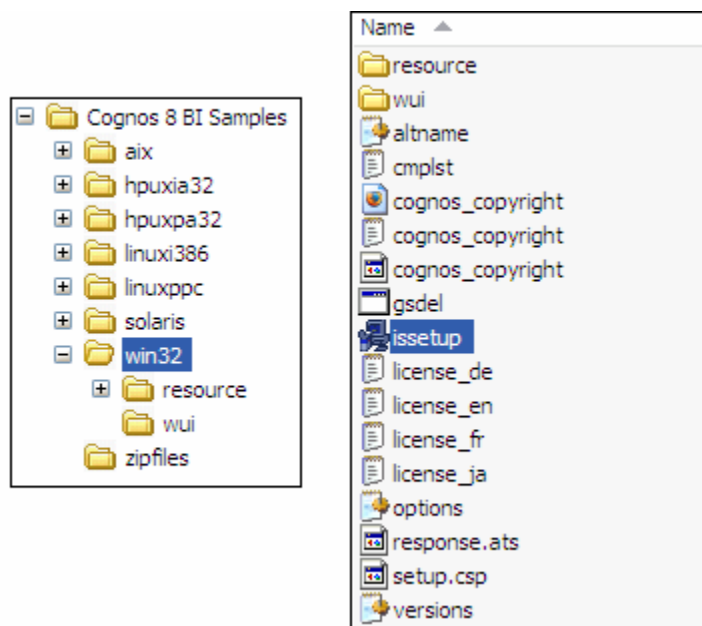


Figure 27 Installation Wizard location (Windows)

- [LINUX] Start the installation wizard by executing the file `issetup` located under the `linux386` directory of your installation disk.
- The Welcome screen will appear and you can select the wizard language.

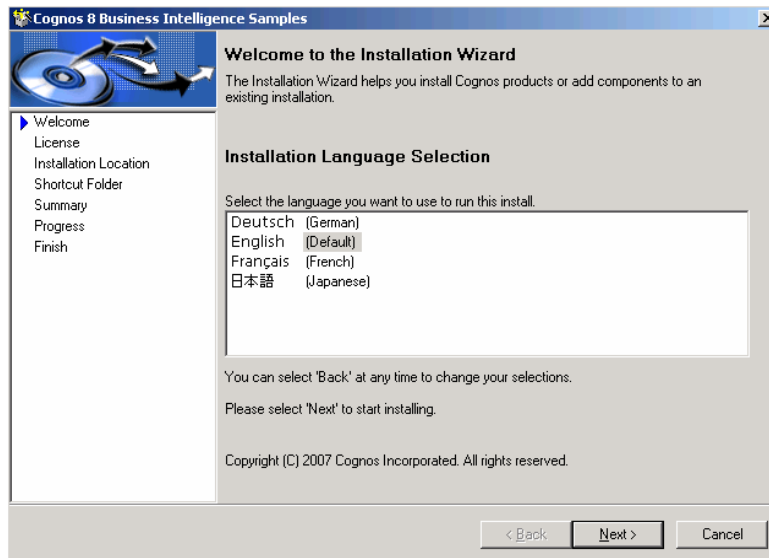


Figure 28 Language selection screen

- Accept the License Agreement on the next screen and press **Next**.



Figure 29 License Agreement window

- In the Installation Location screen, enter the same location where Cognos 8 files were installed. When asked if you want to make a backup of all replaced files, select **No**.

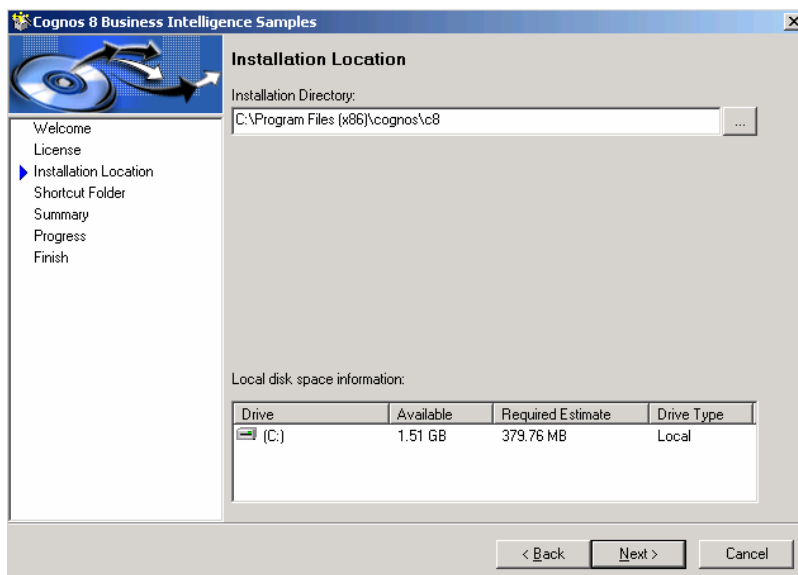


Figure 30 Installation location screen

- If Cognos 8 service is running, the next screen will warn you that the service must be stopped. .Press **Next** to stop the service.

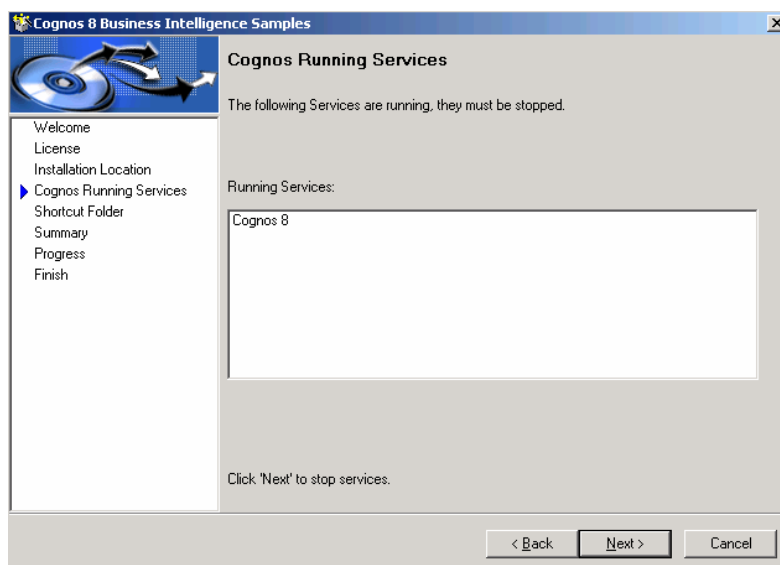


Figure 31 Cognos Running Services screen

- Accept the default shortcut folder and press **Next**.

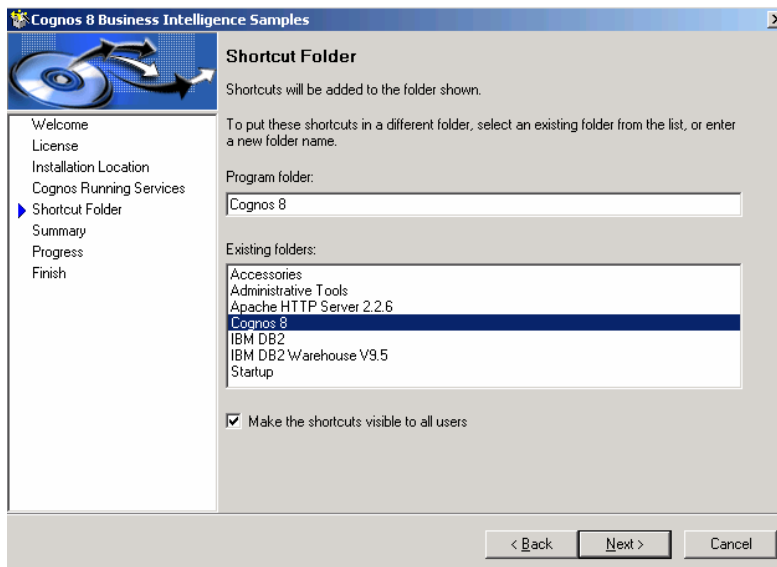
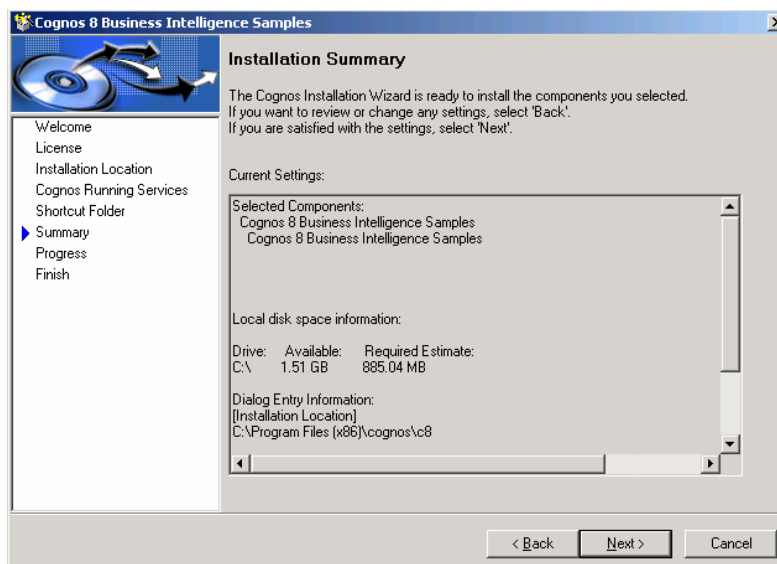


Figure 32 Shortcut Folder selection screen

- The next screen shows a summary of the installation options you selected. Press **Next** to start the installation.



- Wait until all components are installed.

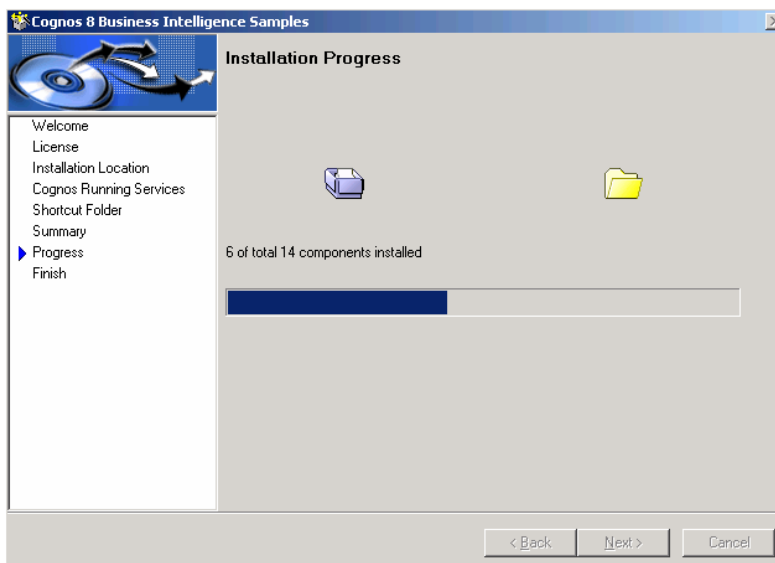


Figure 33 Installation Progress screen

- Click finish to exit the wizard.

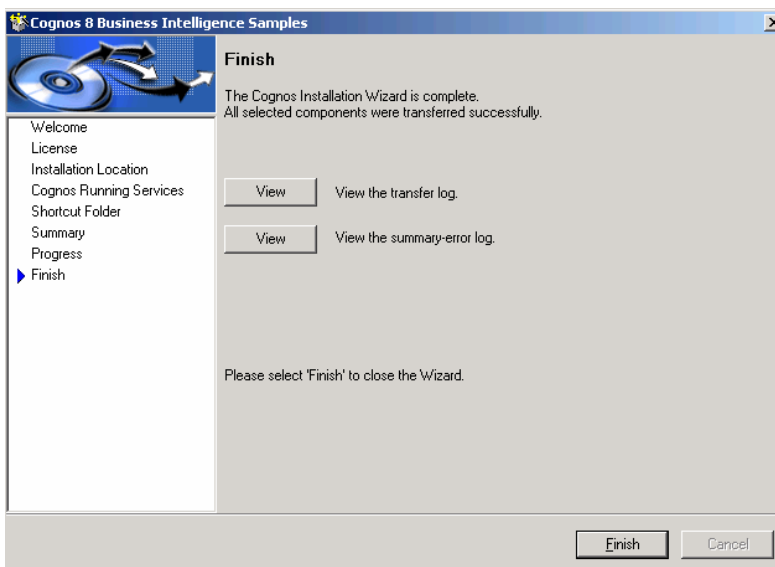


Figure 34 Installation finished screen

3.2 Set up Cognos 8 Samples

The steps below will allow you to set up Cognos 8 Samples so that they can be used in the Reporting and Query Studio. You will need around 150 MB for the GO Sales data and 200 MB for the GO Sales warehouse data. For DB2, the database schemas are delivered in a DB2 move file.

- Log in to the system as Administrator (Windows) or as root (Linux).

- Extract the contents of the `GS_DB.tar.gz` file, which is located at:
 - [WINDOWS] `c:\<progFilesx86>\cognos\c8\webcontent\samples\datasources\db2`
 - [LINUX] `/opt/cognos/c8/webcontent/samples/datasources/db2`
- Open the DB2 CLP (Command Line Processor):
 - [WINDOWS] Access **Start → All Programs → IBM DB2 → DB2WCOPY01 (Default) → Command Line Tools → Command Line Processor.**
 - [LINUX] From a terminal window, type the following commands:
 - `su db2inst1` → Switches to **db2inst1** user.
 - `db2` → Starts DB2 CLP.
- Issue the following command to create the **GS_DB** database that will store the samples data.

```
db2 => CREATE DATABASE GS_DB AUTOMATIC STORAGE YES ON
<storagePath> COLLATE USING SYSTEM PAGESIZE 16 K USER
TABLESPACE MANAGED BY AUTOMATIC STORAGE NO FILE SYSTEM
CACHING
```

<storagePath> is a list of paths that will be used to table space containers where for automatic storage table spaces.

[LINUX] This value is `/db2fs`

[WINDOWS] This value is `c:`

- In order for proper use of Cognos 8 Samples, you should have at least one user that has SELECT privileges for all tables in the GS_DB database. To make it simpler, you can use the Cognos user you created during the Cognos deployment process. If you want, you can create a new user specific for this purpose.
- Since it's a sample database, we will give DBADM to this user just to make things simpler. Using DB2 CLP, execute the following SQL statements:

```
db2 => connect to GS_DB
db2 => GRANT DBADM ON DATABASE TO USER <samplesUser>
db2 => terminate
```

<samplesUser> samples user.

- [LINUX] From a terminal window (root account) change the current directory to the directory where you extracted the contents of the `GS_DB.tar.gz` file:

```
localhost:~-> cd /opt/cognos/c8/webcontent/samples
```

```
/datasources/db2/GS_DB
```

- o Modify files and directory permissions to give access to user db2inst1

```
localhost:/opt/cognos/c8/webcontent/samples
/datasources/db2/GS_DB -> chmod 777 *
localhost:/opt/cognos/c8/webcontent/samples
/datasources/db2/GS_DB -> chmod 777 .
```

- [WINDOWS] From a command prompt window, change the current directory to the directory where you extracted the contents of the **GS_DB.tar.gz** file:

```
cd C:\Program Files (x86)\cognos\c8\webcontent\samples\
datasources\db2\GS_DB
```

- [LINUX] Switch to db2inst1 user (**su db2inst1**).
- Now, issue the following command to import the samples data into the **GS_DB** database.

```
db2move GS_DB import -u <db2Admin> -p <db2AdminPwd>
```

<db2Admin> DB2 administrator user id (Windows) or db2inst1 (Linux)

<db2AdminPwd> the corresponding password.


- Open file **gs_db_modify.sql** in a text editor and change the placeholders **<user>** and **<password>** with the DB2 administrator user id (Windows) or DB2 Instance user id (Linux) and password respectively.

- o [WINDOWS] **c:\<progFilesx86>\cognos\c8\
webcontent\samples\datasources\db2**

- o [LINUX]
/opt/cognos/c8/webcontent/samples/datasources/db2

- [WINDOWS] Execute the script **gs_modify.bat** located in the same directory as the **GS_DB.tar.gz** file. This will create some necessary constraints, views and store procedures in the **GS_DB** database.
- [LINUX] Still as **db2inst1** user, execute the following command. This will create some necessary constraints, views and store procedures in the **GS_DB** database.

```
db2 -td@ -f /opt/cognos/c8/webcontent/samples/datasources/
db2/gs_db_modify.sql -z gs_db_modify.log
```

- Start the Cognos 8 service, since it was stopped during the Cognos 8 Samples installation.
 - o Open **Cognos Configuration** application and click on the **Start** button  located in the application toolbar.
- Using a web browser, open **Cognos Connection** welcome page.

- [WINDOWS] `http://localhost:5000/cognos8`
- [LINUX] `http://localhost/cognos8`
- In the welcome page, click **Administer Cognos Content**.
- On the **Configuration** tab, click **Data Source Connections**.
- Click the new data source button .
- In the **Name** box, type **great_outdoors_sales**. The other fields are optional. Click **Next**.

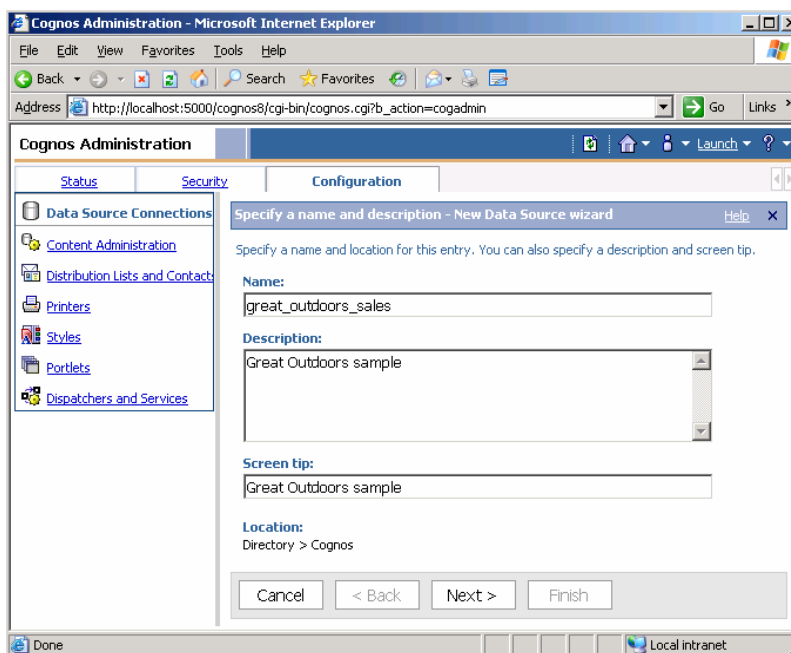


Figure 35 Create Data Source screen

- In the connection page, select **DB2** from the **Type** field and then click **Next**.

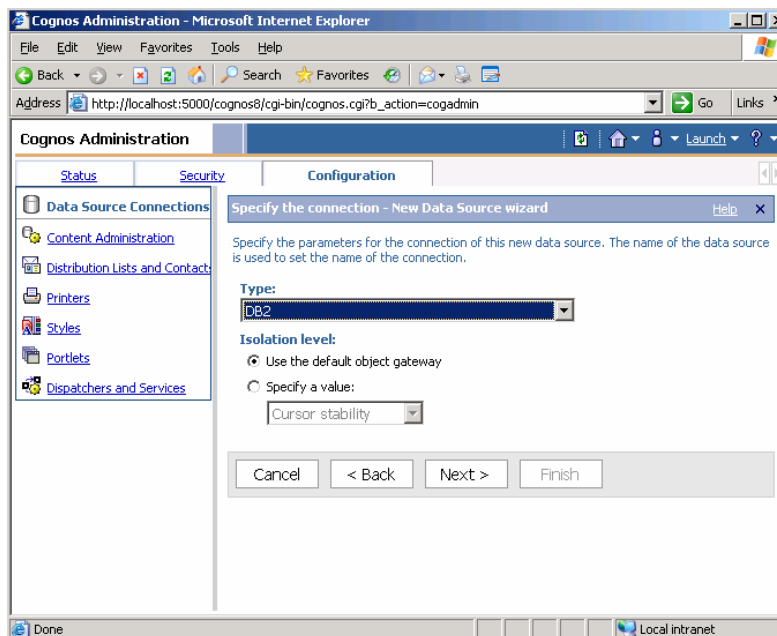


Figure 36 Select data source type

- The next page asks you to set up the connection properties.
 - In the **DB2 database name** field, type **GS_DB** (use uppercase letters).
 - Under **Signon**, select the **User Id**, **Password** and **Create a signon that the Everyone group can use** check boxes.
 - Type the **User ID** and **Password** of the samples user.
 - If you want to test whether the parameters are correct, click **Test the connection...** link.
 - Click **Finish**.

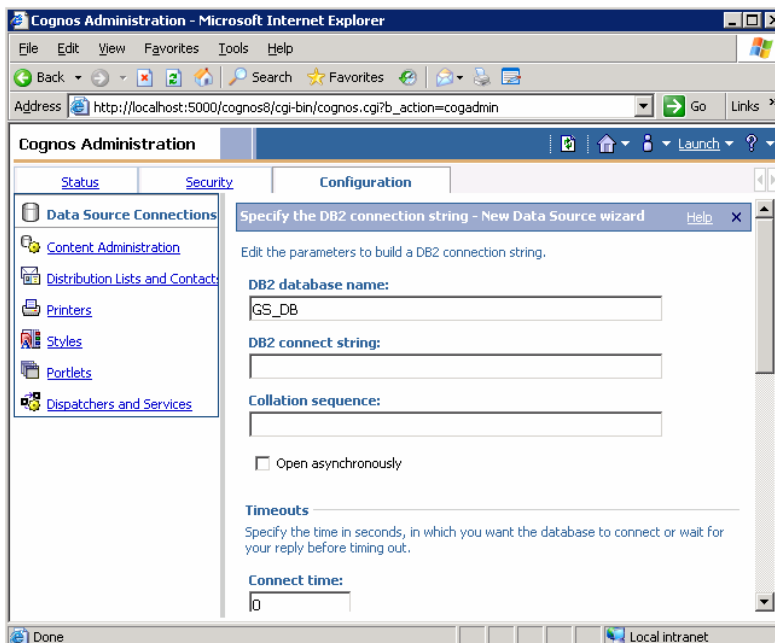


Figure 37 Setting up the connection properties 1

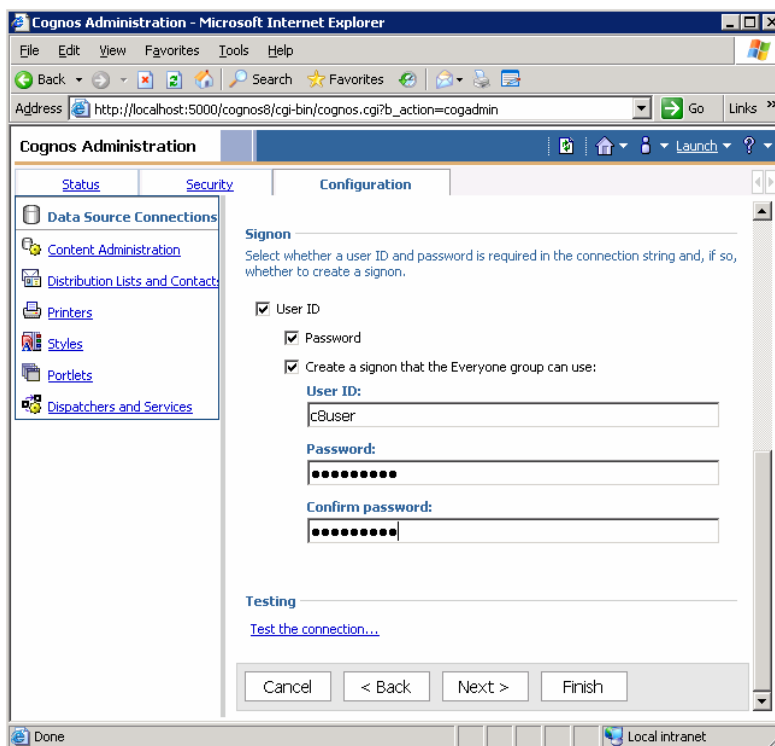



Figure 38 Setting up the connection properties 2

- You should see the data source you just created listed.

- Click the new data source button  again and repeat the steps above to create the **great_outdoors_warehouse** data source. It will use the following values:
 - Name: **great_outdoors_warehouse**
 - Type: **DB2**
 - DB2 database name: **GS_DB**
 - Under the **Signon** section, select the **User Id, Password** and **Create a signon that the Everyone group can use** check boxes.
 - Use the same user id and password as before.
- You should see both data sources listed in the main page.

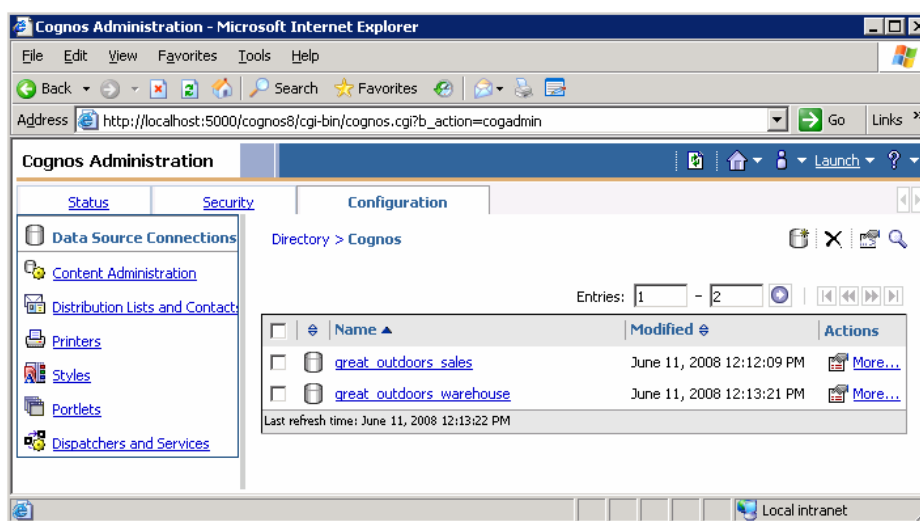


Figure 39 List of Data Source Connections


3.3 Import the Samples

To use the sample package and other content, you must import them from the sample deployment archive.

- Copy the **Cognos_Samples.zip** file to the Cognos deployment directory.
 - [WINDOWS]
Source: c:\Program Files (x86)\cognos\c8\webcontent\samples\content\Cognos_Samples.zip
Target: c:\Program Files (x86)\cognos\c8\deployment
 - [LINUX]
Source: /opt/cognos/c8/webcontent/samples/content/

Cognos_Samples.zip

Target: /opt/cognos/c8/deployment

- Using a web browser, open **Cognos Connection** welcome page.
 - [WINDOWS] <http://localhost:5000/cognos8>
 - [LINUX] <http://localhost/cognos8>
- In the welcome page, click **Administer Cognos Content**.
- On the **Configuration** tab, click **Content Administration**.
- Click the **New Import** button . The **New Import** wizard appears.
- In the **Deployment Archive** section, select **Cognos_Samples** and click **Next**.
- Type a unique name and an optional description and screen tip for the deployment archive, and then click **Next**.

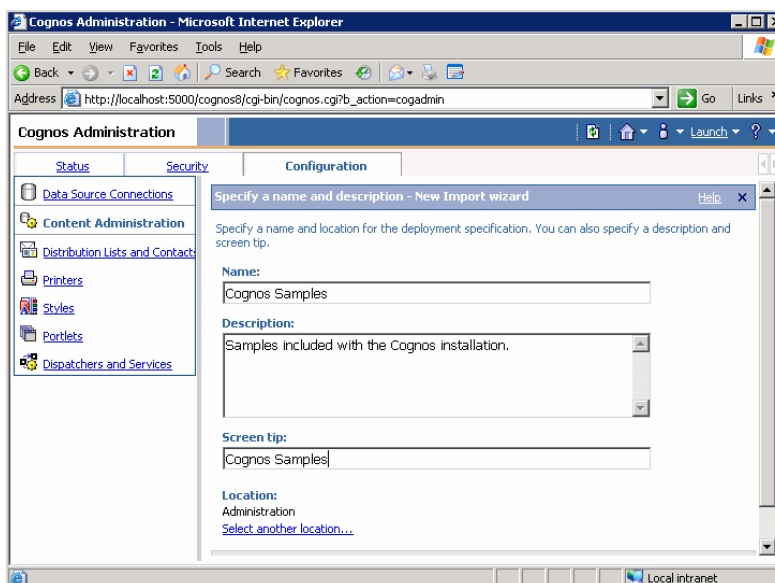


Figure 40 Name and description of imported packages

- In the **Public Folders Content** section, select all packages and folders in the list. The **Cognos_Samples** deployment archive has the following packages or folders: GO Data Warehouse (analysis), GO Data Warehouse (query), GO Sales (analysis), GO Sales (query), Sample Template and Practical Examples. Click **Next**.

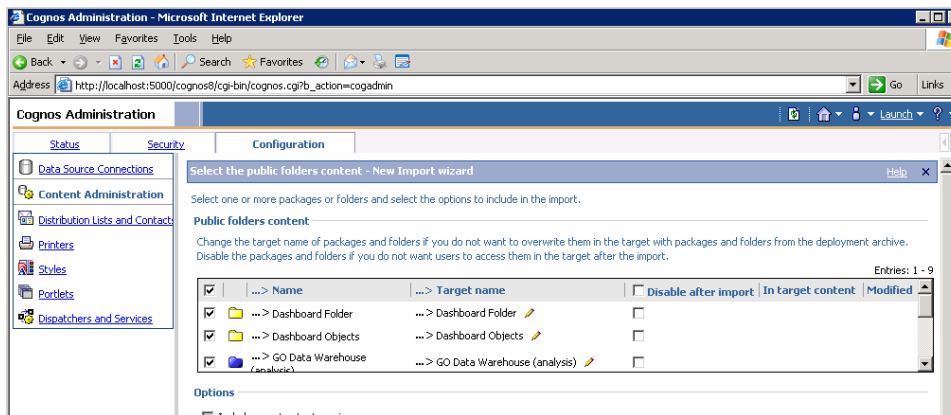


Figure 41 Public Folders Content screen

- In the General Options page, accept the default configuration and click **Next**.
- The summary information appears. Click **Next**.
- Select the **Save and run once** action to run it once then click **Finish**.

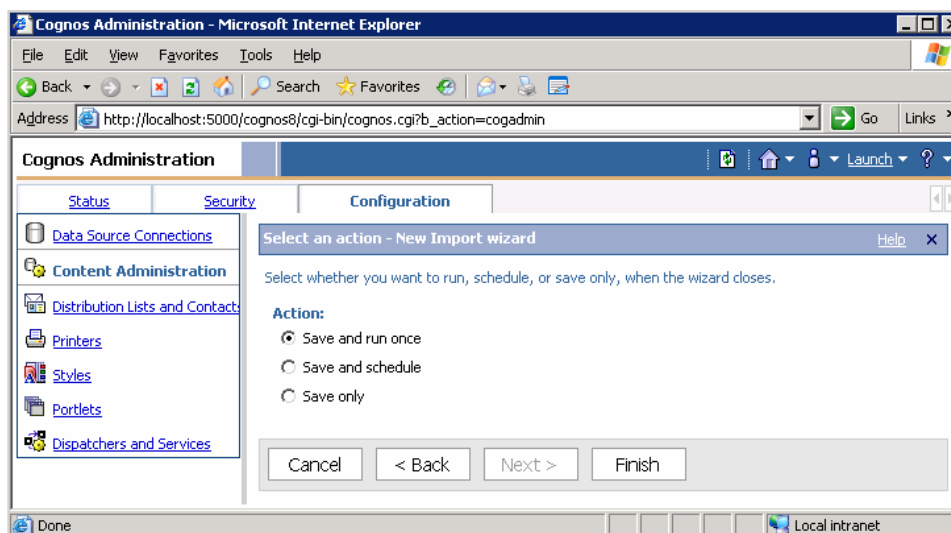


Figure 42 Save and run screen

- In the next screen, specify **Now** as the Time option for the run, then click **Run**.

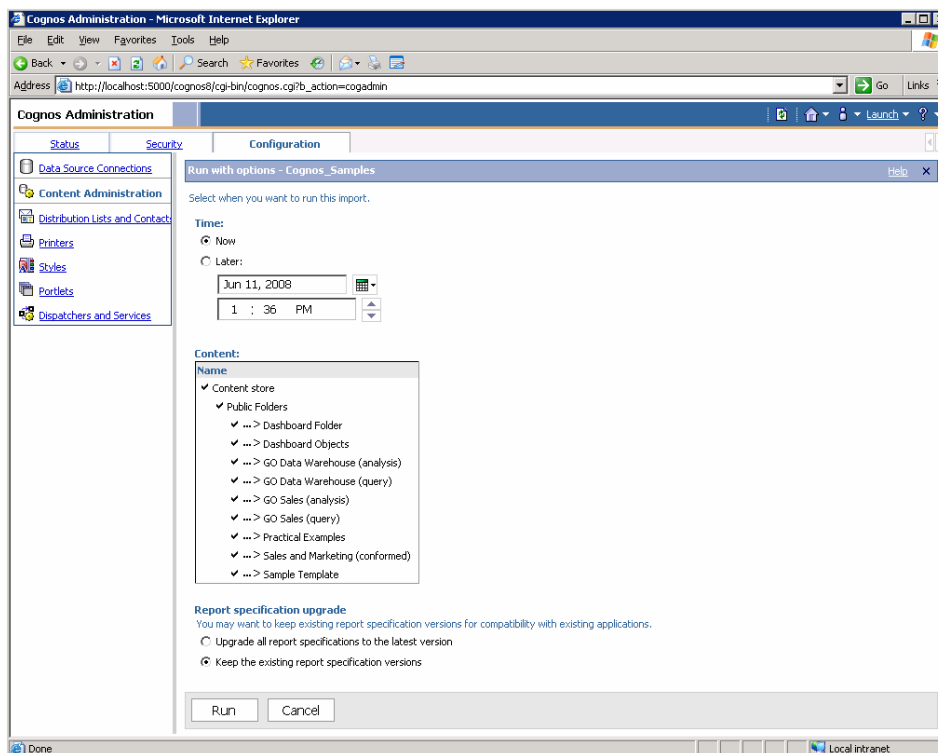


Figure 43 Run with options screen

- In the next screen, select the option to view the details of the import operation.

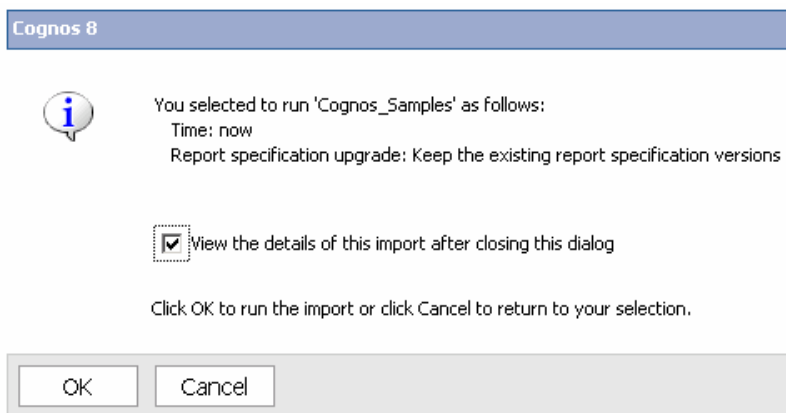


Figure 44 View details of the import operation

- The **Run History** screen appears. Click the **Refresh** link in the upper-right corner to view the current progress. You should get a success message stating the import operation is complete.

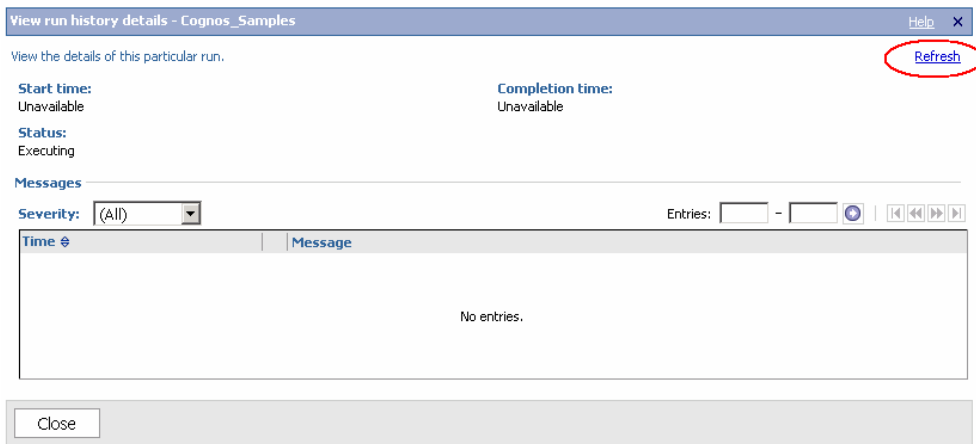


Figure 45 Run history details before the refresh

- Click **Close**. You can now use the sample packages to create reports and analyses in **Report Studio** and **Query Studio**. You can also run the sample reports that are available on the **Public Folders** tab in the portal (see section 4.1).

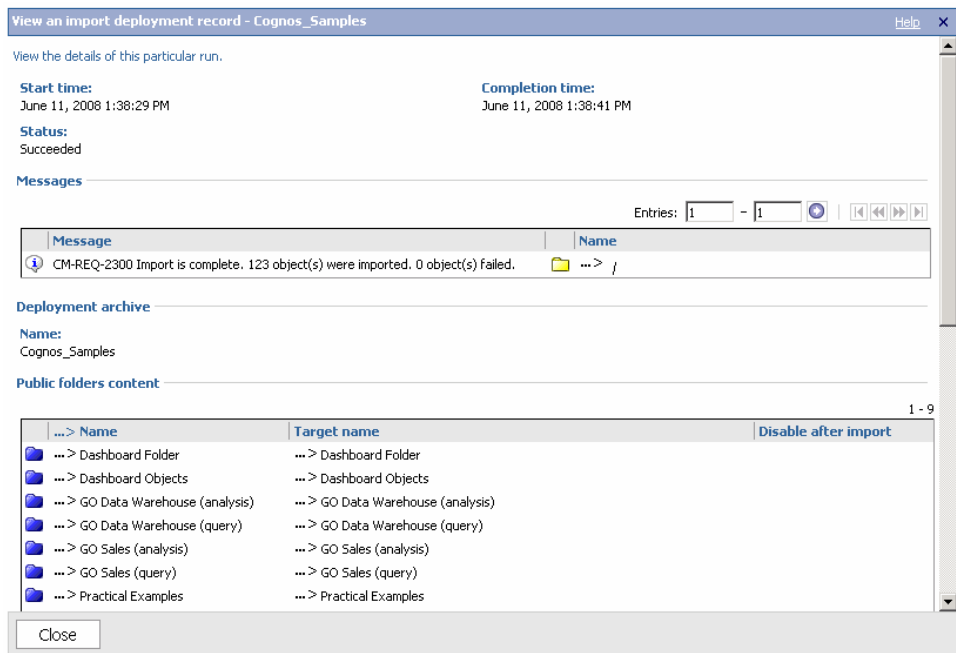


Figure 46 Run history details after the refresh

4. Using Cognos 8 BI Reporting

In this section we assume you have already deployed and configured Cognos 8 components, as described in section 2, and also have Cognos 8 service running.

Cognos 8 BI Reporting applications are web applications and as such can be accessed using a web browser. In general, your web browser should be enabled for cookies and Javascript. For more details on specific settings for your web browser, please see the **Cognos 8 BI Installation and Configuration Guide**, included with your Cognos 8 BI Reporting installation image.

- Open your web browser.
- Type address `http://localhost:5000/cognos8` (Windows) or `http://localhost/cognos8` (Linux). The Cognos 8 welcome screen will appear after a while.

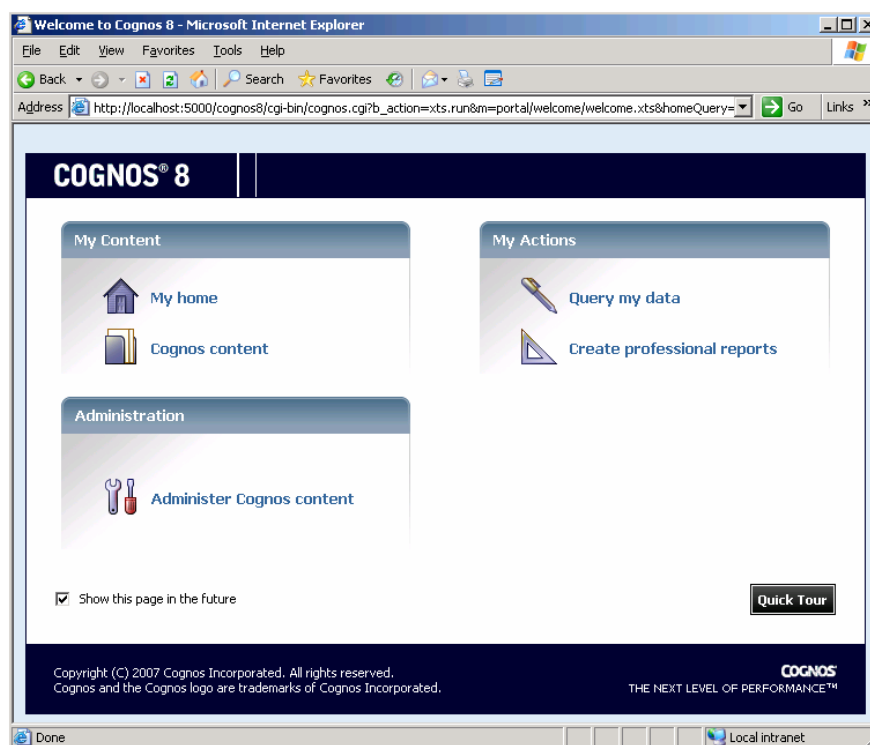



Figure 47 Cognos 8 welcome screen

- From this screen you can:
 - Browse reports, metrics and other Cognos content from the **Cognos Content** link.

- Click the **Administer Cognos Content** link and go to Cognos Administration application to monitor application activity, manage security and administer Cognos content.
- Open the Query Studio application by clicking on the **Query my data** link.
- Open the Report Studio application by clicking on the **Create professional reports** link.

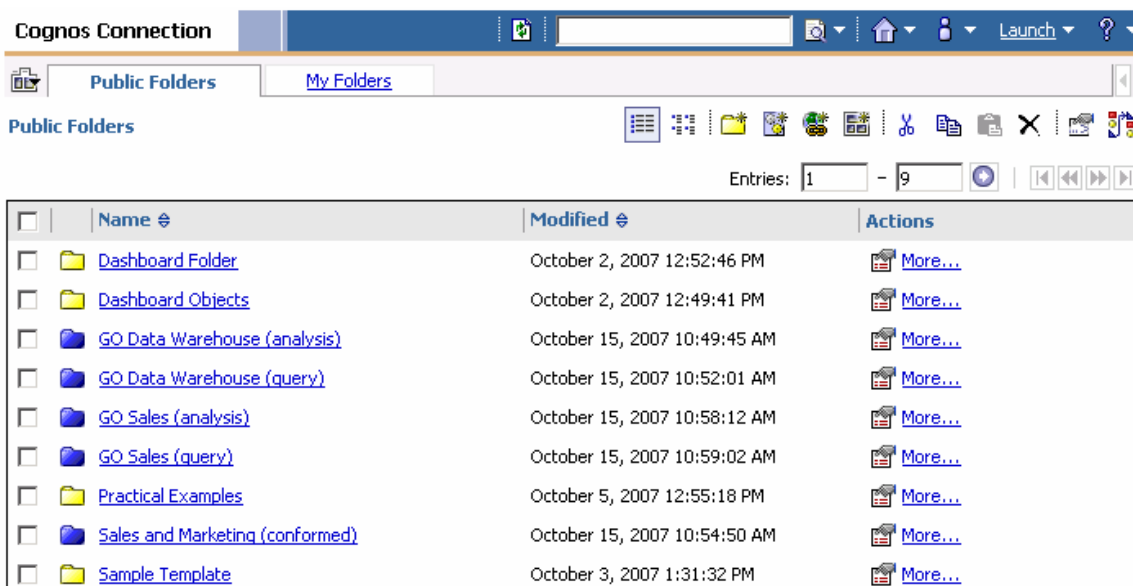
4.1 Accessing Cognos 8 Samples

If you installed Cognos 8 Samples, (see section 3), you can access the **Public Folders** tab in the Cognos Connection portal. To access it, you can:

- Click the **My Home** link in the welcome screen (Figure 47).
- Or click the **My Home** button  located in the top toolbar.



- Then click on the **Public Folders** tab. Cognos 8 Samples should be listed under the Public Folders list.



- To access a sample report, just click on the report link to run it. E.g.: click on Practical Examples, then **Recruitment Report (Interactive)**.

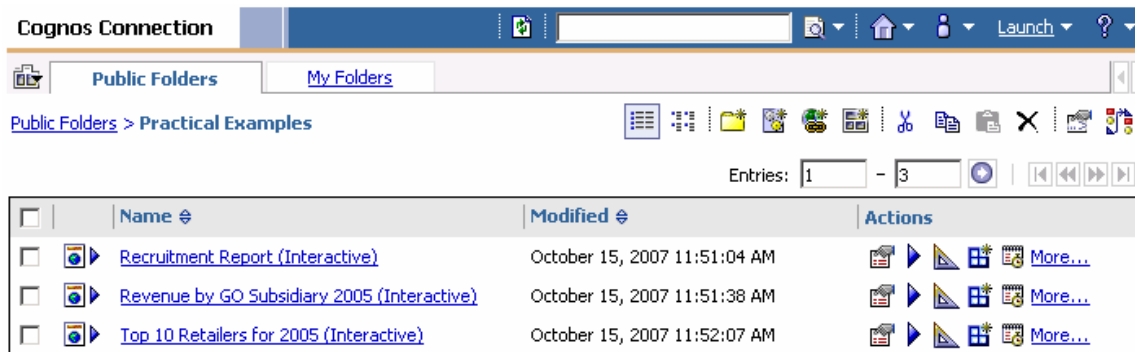


Figure 48 Practical Examples reports

- To access a sample report, just click on the report link to run it. E.g.: click on Practical Examples, then **Recruitment Report (Interactive)**.
- Select the year from the drop down box and the report generation will start.

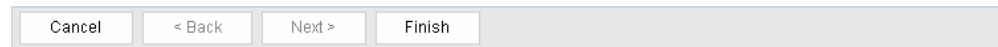
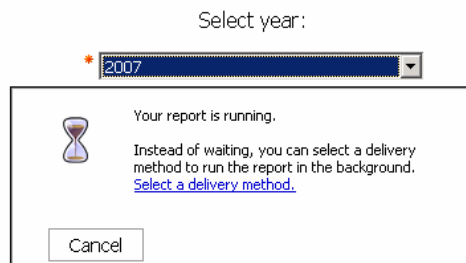


Figure 49 Running a example report

- The generated report will appear in a while.

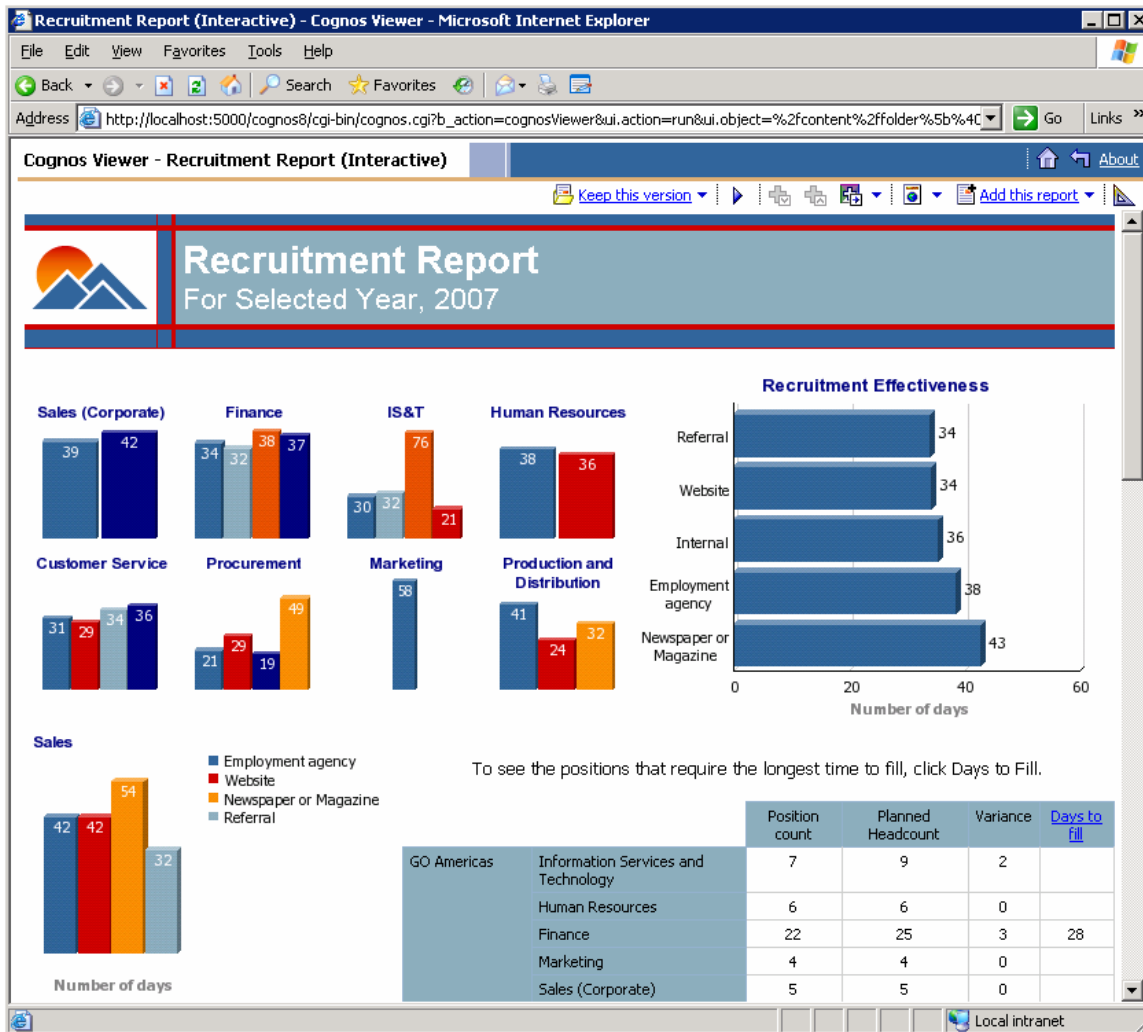


Figure 50 The "Recruitment Report" sample

5. References

- Cognos 8 Business Intelligence – Installation and Configuration Guide (available in Cognos 8 BI Reporting installation image)
- Cognos 8 Business Intelligence Reporting – Installation and Configuration Guide (available in Cognos 8 BI Reporting installation image)
- IBM Cognos 8 BI Reporting website - <http://www.cognos.com/products/cognos8businessintelligence/reporting.html>
- IBM InfoSphere Balanced Warehouse C-Class website - <http://www-306.ibm.com/software/data/infosphere/balanced-warehouse/c-class.html>

Appendix A - Installing Sun's JVM 1.4.2 on SLES

This section details the steps to install Sun's Java Virtual Machine using SLES installation DVD, or the C-Class Partners Toolkit for Linux DVD.

- Insert the SLES installation DVD or your C-Class Partner Toolkit for Linux DVD in your driver.
- Start the YaST application through **Computer** → **YaST**.

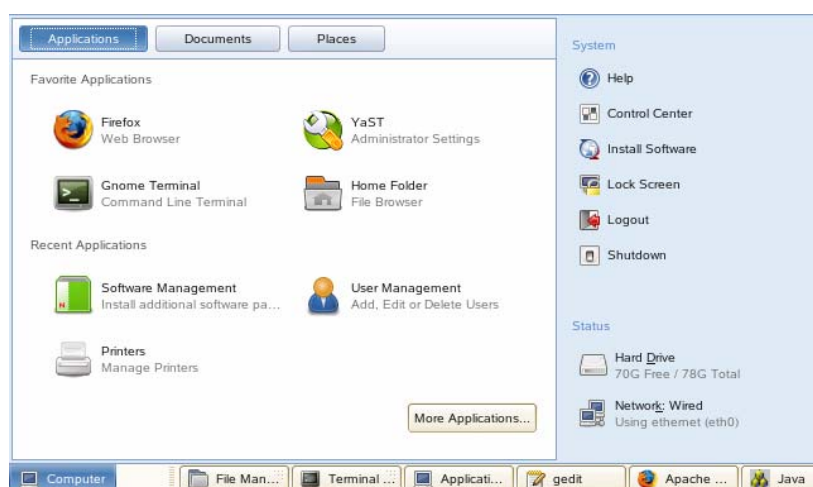


Figure 51 Starting YaST

- The YaST Control Center window will open. Scroll down the list and open the Software Management application (Figure 52).
- When the YaST window open, search for the RPMs by typing “**java-1_4_2**” in the search text field and then pressing the **Search** button. You should see on the right side panel a list of the RPMs that matched your search criteria (Figure 53 YaST Software Management windows).
- Select the following RPMs and then press the **Accept** button (Figure 53 YaST Software Management windows).
 - `java-1_4_2-sun-1.4.2.13-0.2`
 - `java-1_4_2-sun-devel-1.4.2.13-0.2`

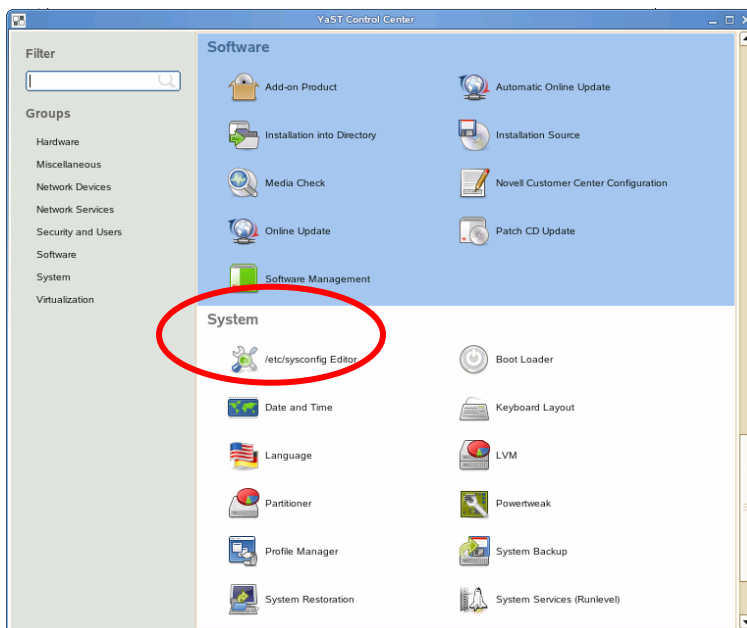


Figure 52 YaST Control Center window

- A new window will show some dependant packages. Press the **Continue** button to accept the packages listed. (Figure 54).

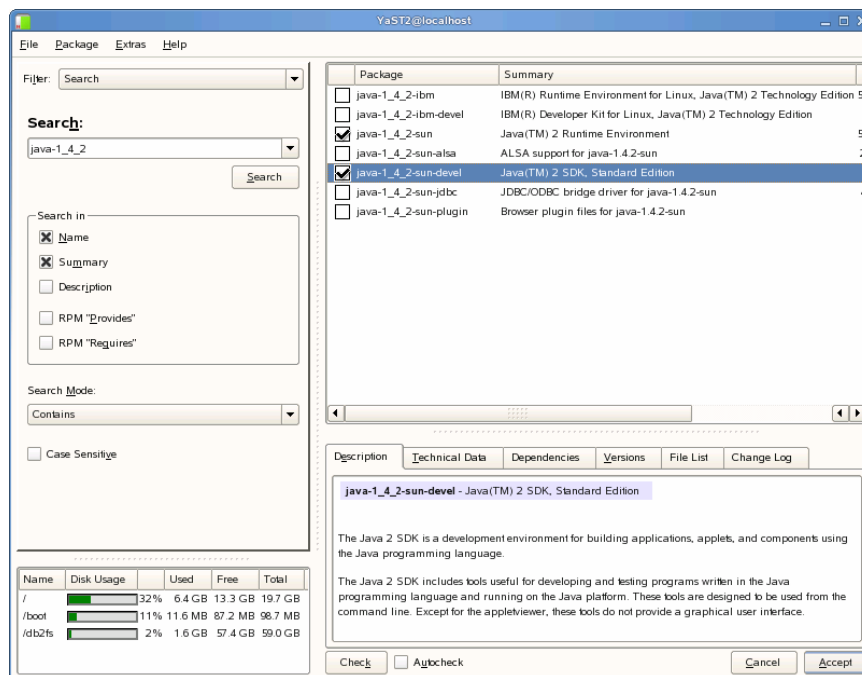


Figure 53 YaST Software Management windows

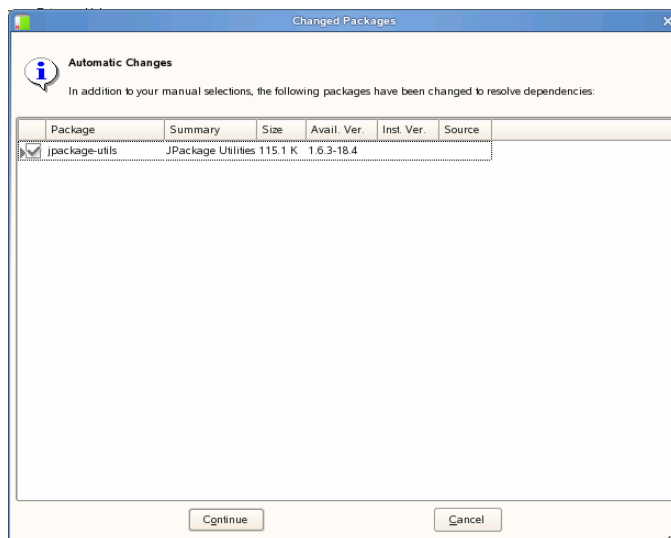


Figure 54 Package dependencies

- The next window shows the progress of the installation. Wait until the installation is completed. Answer **NO** when it asks if you want to install any additional packages. The Software Management window will be closed.
- The JVM is installed and ready for use.

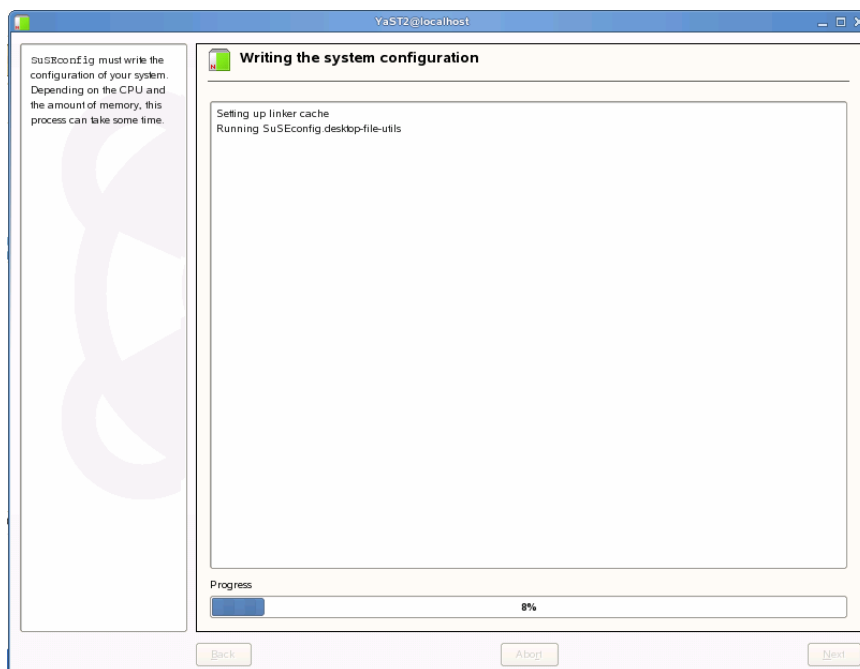


Figure 55 Progress of the installation

Appendix B - /etc/init.d/cognos

```
#!/bin/sh

### BEGIN INIT INFO
# Provides: cognos
# Required-Start: $network $syslog $remote_fs db2
# Required-Stop:
# Default-Start: 3 5
# Default-Stop: 0 1 2 6
# Description: Starts Cognos Services
### END INIT INFO

# Shell functions sourced from /etc/rc.status:
# rc_check check and set local and overall rc status
# rc_status check and set local and overall rc status
# rc_status -v ditto but be verbose in local rc status
# rc_status -v -r ditto and clear the local rc status
# rc_failed set local and overall rc status to failed
# rc_reset clear local rc status (overall remains)
# rc_exit exit appropriate to overall rc status
. /etc/rc.status

# catch mis-use right here at the start
if [ "$1" != "start" -a "$1" != "stop" -a "$1" != "status" -a "$1" !=
"restart" ]; then
    echo "Usage: $0 {start|stop|status|restart}"
    exit 1
fi

MOUNT=/bin/mount
UMOUNT=/bin/umount
MKDIR=/bin/mkdir
RMMOD=/sbin/rmmod

CHECKPROC="/sbin/checkproc"
test -x "$CHECKPROC" || CHECKPROC="test -x "

# First reset status of this service
rc_reset

# Get settings, if file was not exists, return rc_failed .
if test -f /etc/sysconfig/cognos; then
    . /etc/sysconfig/cognos
else
    echo "file /etc/sysconfig/cognos does not exist"
    rc_failed
    rc_exit
fi
```

```

#
# Get and check environment
#
check_cognos_environment()
{
    if [ ! -z "$COGNOSBIN" -a ! -d "$COGNOSBIN" ]; then
        echo
        echo "${warn}COGNOSBIN directory $COGNOSBIN does not exist!$norm"
        rc_failed
        rc_exit
    fi

    if [ -z "$COGNOSSERVERSTOP" ]; then
        echo
        echo "${warn}COGNOSSERVERSTOP          is not set!$norm"
        rc_failed
        rc_exit
    fi

    if [ ! -x "$COGNOSBIN/$COGNOSSERVERSTOP" ]; then
        echo
        echo "${warn} file $COGNOSBIN/$COGNOSSERVERSTOP does not
exists!$norm"
        rcfailed
        rc_exit
    fi

    if [ -z "$COGNOSSERVERSTART" ]; then
        echo
        echo "${warn}COGNOSSERVERSTART is not set!$norm"
        rc_failed
        rc_exit
    fi

    if [ ! -x "$COGNOSBIN/$COGNOSSERVERSTART" ]; then
        echo
        echo "${warn} file $COGNOSBIN/$COGNOSSERVERSTART does not
exists!$norm"
        rcfailed
        rc_exit
    fi
}

# Here we finally get to do the real work.
case "$1" in
start)
    check_cognos_environment
    echo -n "Starting $COGNOSPRODUCTNAME $COGNOSVERSION"
    ERR_MES=`su - root -c "export
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$COGNOSDB2LIB:$COGNOSBIN; cd $COGNOSBIN;
./$COGNOSSERVERSTART; ./cogbootstrapservice -start"`
    RC=$?

    if [ $RC -ne 0 ]; then
        rc_failed 1
        rc_status -v
    else
        rc_failed 0

```

```

        rc_status -v
    fi

    rc_exit
    ;;
stop)
    check_cognos_environment
    echo -n "Stopping $COGNOSPRODUCTNAME $COGNOSVERSION"
    ERR_MES=`su - root -c "export
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$COGNOSDB2LIB:$COGNOSBIN; cd $COGNOSBIN;
./$COGNOSSEVERSTOP; ./cogbootstrapservice -stop"`
    RC=$?

    if [ $RC -ne 0 ]; then
        rc_failed 1
        rc_status -v
    else
        rc_failed 0
        rc_status -v
    fi

    rc_exit
    ;;
status)
    check_cognos_environment
    echo -n "Checking for $COGNOSPRODUCTNAME $COGNOSVERSION"
    cd $COGNOSBIN; ./cogbootstrapservice -isrunning
    if [ $? -ne 0 ] ; then
        rc_failed 3
        rc_status -v
    else
        rc_failed 0
        rc_status -v
    fi

    rc_exit
    ;;
restart)
    ## Stop the service and regardless of whether it was
    ## running or not, start it again.
    $0 stop
    $0 start
    ;;
*)
    echo "Usage: $0 {start|stop|status|restart}"
    exit 1
esac

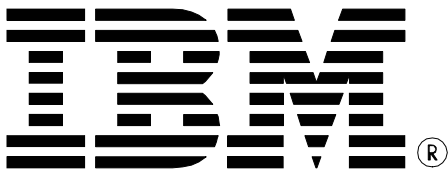
rc_status -r

rc_exit

```

Appendix C - /etc/sysconfig/cognos

```
## Path:      Applications/Cognos
## Description: Cognos BI Reporting
## Type:      string
## ServiceRestart: cognos
#
# The stop script for a Cognos BI Reporting
#
COGNOSSEVERSTOP="shutdown.sh"
## Path:      Applications/Cognos
## Description: Cognos BI Reporting
## Type:      list(/opt/cognos/c8)
## ServiceRestart: cognos
#
# The base directory of the program files
#
COGNOSBIN="/opt/cognos/c8/bin"
COGNOSPRODUCTDIR="/opt/cognos/c8/vers"
## Path:      Applications/Cognos
## Description: Cognos BI Reporting
## Type:      list(Cognos BI Reporting 8)
## ServiceRestart: cognos
#
# The name of the product
#
COGNOSPRODUCTNAME="Cognos BI Reporting"
## Path:      Applications/Cognos
## Description: Cognos BI Reporting
## Type:      list(startup.sh)
## ServiceRestart: cognos
#
# The start script for the Cognos BI Reporting
#
COGNOSSEVERSTART="startup.sh"
## Path:      Applications/Cognos
## Description: Cognos BI Reporting
## Type:      list(8.3.81.20)
## ServiceRestart: cognos
#
# The version of Cognos BI Reporting
#
COGNOSVERSION="8.3.81.20"
## Path:      Applications/Cognos
## Description: Cognos BI Reporting
## Type:      list(/opt/ibm/dwe/V9.5/db2/V9.5/lib32)
## ServiceRestart: cognos
#
# The DB2 library required for cognos
#
COGNOSDB2LIB="/opt/ibm/dwe/V9.5/db2/V9.5/
```



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