



Business Objects Crystal Decisions Installation Guide for Linux

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Introduction to Business
Objects Crystal Decisions

1

chapter



What is Business Objects Crystal Decisions?

Business Objects Crystal Decisions is an intuitive and easy to use tool for creating and analyzing business intelligence data over the web. It is built on BusinessObjects Enterprise technology and includes the ability to create and publish Web Intelligence documents. Web Intelligence delivers a unique, single web environment for both querying and analyzing information. Business Objects Crystal Decisions also includes a report publisher and a web portal interface that is used to view reports.

Business Objects Crystal Decisions may be installed on a single machine for end users to access, view, and interact with Web Intelligence and Crystal Reports documents. It allows you to store documents in a central database for security and data integrity. Users then access the documents through a web portal.

With Business Objects Crystal Decisions, you can set up security to control which end users can access specific folders and documents. You can also specify the rights for users or groups such as who can schedule and publish documents.

Who is Business Objects Crystal Decisions for?

Business Objects Crystal Decisions is ideal for organizations that need to deliver Web Intelligence and Crystal Reports documents over the web to smaller audiences. It does not require that you deal with multiple servers and complicated configurations. Everything is installed on a single server for quick installation and setup.

The quick setup allows you to start using the software to increase your document development productivity and data security almost immediately.

About this help

This help provides you with information and procedures for installing Business Objects Crystal Decisions. This help also includes instructions for the different installation modes available.

Who should read this help?

This help is intended for the system administrator or IT professional who needs to install Business Objects Crystal Decisions. Familiarity with your overall network environment, port usage, your database environment, and your web server software is especially beneficial. If you are installing BusinessObjects Enterprise on LINUX, you will require root privileges to perform some of the setup procedures.

For more information about the product, consult the *Business Objects Crystal Decisions Getting Started Guide* located in the `docs` directory of your product distribution.

For more information about InfoView and other BusinessObjects Enterprise products, consult the *BusinessObjects Enterprise InfoView User's Guide*, the *BusinessObjects Enterprise Administrator's Guide*, and the *BusinessObjects Enterprise Installation Guide*. Online versions of these guides are included in the *Business Objects Crystal Decisions Document Roadmap* found in the `docs` directory of your product distribution.

BusinessObjects Enterprise documentation

Business Objects Crystal Decisions is built on the BusinessObjects Enterprise framework. Therefore, you can refer to the BusinessObjects Enterprise guides for more information on Business Objects Crystal Decisions features. While you are referring to the BusinessObjects Enterprise guides, you may encounter some information that does not apply to Business Objects Crystal Decisions. To help you differentiate between the information that applies to Business Objects Crystal Decisions and the information that does not, review the *Business Objects Crystal Decisions Document Roadmap* found in the `docs` directory of your product distribution.

Business Objects and Linux

Business Objects Crystal Decisions is supported on Windows and Linux. For more information about Business Objects products on Linux, go to <http://www.businessobjects.com/linux/>

Acknowledgements

Patents

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Business Objects information resources

This appendix describes the Business Objects documentation, customer support, training, and consulting services, with links to online resources.



Installing Business Objects Crystal Decisions on Linux



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chapter

Installation overview

Business Objects Crystal Decisions is designed for single machine workgroup deployment. For larger deployments requiring clustering capabilities, consider using Business Objects Enterprise.

This chapter provides the information you need to install Business Objects Crystal Decisions on your Linux server. It provides two types of information: basic and detailed information.

Note: Business Objects Crystal Decisions comes with Crystal Xcelsius capabilities. To enable these Crystal Xcelsius features, download the "Xcelsius Connectivity" folder from the `Add-ons` directory of your product distribution and then run the `Setup.exe` inside that folder.

Basic information

To quickly install Business Objects Crystal Decisions, you only need to refer to the following sections of this guide which cover the basic information required to install Business Objects Crystal Decisions:

- [New installation](#) on page 12
- [System requirements](#) on page 14
- [Verifying your Linux system setup](#) on page 15
- [Setting up the product distribution](#) on page 20
- [Beginning your installation](#) on page 20
- [Performing a new installation](#) on page 22
- [Finishing a system installation](#) on page 25
- [Using `ccm.sh` to start the servers associated with Business Objects Crystal Decisions](#) on page 30
- [Verifying the Java web applications](#) on page 32
- [Troubleshooting common Business Objects Crystal Decisions problems](#) on page 33

Detailed information

In addition to the basic information, you can also refer to the following topics for more information on installation choices:

- [Client installation](#) on page 13
- [Silent installation](#) on page 14
- [Preparing your existing database server](#) on page 18
- [Sourcing your database clients](#) on page 19
- [Verifying connectivity to your existing database](#) on page 19
- [Performing a client tool installation](#) on page 25
- [Performing a silent installation](#) on page 26
- [Post install component deployment](#) on page 31

Note:

- If you choose to install MySQL and Tomcat, you can ignore the following information as the installation will take care of all of these tasks for you:
- [Preparing your existing database server](#) on page 18
- [Sourcing your database clients](#) on page 19
- [Verifying connectivity to your existing database](#) on page 19
- [Post install component deployment](#) on page 31

Additional documentation

After installing Business Objects Crystal Decisions, refer to the *Business Objects Crystal Decisions Getting Started Guide* included in the `docs` directory of your product distribution for information on how to use the various features available in Business Objects Crystal Decisions.

If you are looking for further information about installation, or administration, consult the following guides available from the Business Objects Customer Support web site at: <http://support.businessobjects.com/documentation/>

- *BusinessObjects Enterprise XI R2 Installation Guide for Windows*
- *BusinessObjects Enterprise XI R2 Administrator's Guide*

- *BusinessObjects Enterprise XI R2 Administrator's Reference Guide*
- *Performance Management Setup and Administration Online Help*
- *Business Objects Crystal Decisions Document Roadmap*

The Business Objects Crystal Decisions Document Roadmap is designed to help you differentiate between the information in the BusinessObjects Enterprise guides that applies to Business Objects Crystal Decisions and the information that does not apply. It references relevant BusinessObjects Enterprise guides and lets you see at a glance what information is available, and from where. You can access the Business Objects Crystal Decisions Document Roadmap guide from the docs directory of your product distribution.

Installation options

You can choose between these installation types when you are installing Business Objects Crystal Decisions:

- *New installation* on page 12
- *Client installation* on page 13
- *Silent installation* on page 14

New installation

Performing a new installation is the simplest way to deploy Business Objects Crystal Decisions.

You can use this installation method to install everything you need to run Business Objects Crystal Decisions. This includes all the Business Objects Crystal Decisions components, a database server and a web application server. In addition to the Business Objects Crystal Decisions components, the installation can do the following:

- Install a database server (MySQL).
- Install a web application server (Tomcat).
- Configure everything for you during the installation.

You can also use the new installation if you plan to use any of the other supported database servers or web application servers. However, any other supported software you will be using with Business Objects Crystal Decisions should be installed and configured before you begin a new installation. For more information on making sure your database is prepared sufficiently for a new installation, see [Preparing your existing database server](#) on page 18.

For a detailed list of tested environments, consult the *Platforms.txt* file included with your product distribution.

User or System Installation

When you perform a new installation of Business Objects Crystal Decisions on Linux you can choose between a user and a system installation.

- When you choose a user installation, all the required components are installed.
- When you choose a system installation all the required components are installed. In addition a script is created that, when run with someone with root access, allows Business Objects Crystal Decisions to automatically restart after system startup.

Note:

- This script can be found at the following location: `<install dir>/bobje/init/setupinit.sh` where `install dir` is the directory where you installed Business Objects Crystal Decisions.
- To run the system-level initiation script, you require root-level authority.

See the following detailed instructions on performing a new installation:

- [Beginning your installation](#) on page 20
- [Performing a new installation](#) on page 22

Client installation

When you install the Business Objects Crystal Decisions components on a Linux machine, you can connect remotely to Business Objects Crystal Decisions with the Publishing Wizard and the Import Wizard. However, these client applications must be installed on Windows.

Choose to perform a client installation if you want to install tools on a Windows machine. See [Performing a client tool installation](#) on page 25 for instructions.

Silent installation

If you need to perform multiple installations and do not want to interrupt people who are currently working on machines in your system, or if you want to install Business Objects Crystal Decisions with your own script, you can use the silent installation command. A silent installation is one that you run from the command line. See [Performing a silent installation](#) on page 26 for instructions.

System requirements

Generally, the following components must be installed and configured correctly before you install Business Objects Crystal Decisions:

- Java application server (unless you install Tomcat with your installation of Business Objects Crystal Decisions).
- 512 MB RAM minimum, 1 G recommended.
- 4.50 GB free disk space.
- Database software that is compatible with the CMS (unless you install MySQL during the Business Objects Crystal Decisions installation).

Note: Business Objects Crystal Decisions supports 32 bit database libraries only.

For a detailed list of supported environments, consult the *Platforms.txt* file included with your product distribution. This file includes specific version and patch-level requirements for web application servers, web browsers, and operating systems. For additional important information that may pertain to your deployment, it is also strongly recommended that you consult the *Release Notes* included with your product distribution (*release.pdf*, *release.htm*, or *release.rtf*).

Business Objects Crystal Decisions requires a database to store information about the system and its users. For details, see [Preparing your existing database server](#) on page 18.

Verifying your Linux system setup

Business Objects Crystal Decisions can integrate with your existing database and web server software components, so the installation script needs to collect certain information about your current system. Because Linux systems can vary significantly from site to site, the following sections detail the key tasks that you must perform prior to installing Business Objects Crystal Decisions.

Note: If you connect remotely to install Business Objects Crystal Decisions, be sure to set your terminal settings to VT100 before beginning the installation.

Review these requirements and ensure they are met prior to beginning your install:

- [Meeting the host name and network requirements](#) on page 15
- [Checking for required commands and utilities](#) on page 15
- [Setting the locale](#) on page 16

Meeting the host name and network requirements

Your Linux server must have a fixed host name before you run the installation script. You must have root privileges to set or modify this information on your system. If you are unfamiliar with these procedures, consult your Linux system documentation.

If you are installing Business Objects Crystal Decisions in a firewall environment, you will need additional configuration details. See the Working with Firewalls section of the *BusinessObjects Enterprise Administrator's Guide*.

Checking for required commands and utilities

In order for the `install` setup program to run correctly, the following commands and utilities must be installed on your Linux system:

/bin/sh	pwd	read	touch
uname	expr	hostname	sed
awk	chown	grep	tail
tar	id	dirname	gzip
stty	ulimit	which	

These relatively standard commands and utilities should be available on most Linux distributions. However, if for any reason one of them is not available on your system, download and install a version appropriate to your system. It is recommended that you obtain any required files from your Linux vendor.

Additionally, these commands and utilities must be accessible in the `PATH` environment variable of the user account that you use when installing Business Objects Crystal Decisions.

Setting the locale

Before you install, set your operating system to use one of the locales that Business Objects Crystal Decisions supports for your type and version of Linux. Consult the *platforms.txt* file included with your product distribution for a complete list.

To ensure that your operating system uses the correct locale whenever Business Objects Crystal Decisions runs, set the `LC_ALL` and `LANG` environment variables to your preferred locale in your login environment. (For example, if you are using a C shell, set these environment variables in the `.login` file.)

Tip: Type `locale` to check that all of the related locale environment variables (such as `LC_MONETARY`, `LC_NUMERIC`, etc.) were properly set by `LC_ALL`.

About the CMS database

Business Objects Crystal Decisions requires 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 Business Objects Crystal Decisions system. Other components of Business Objects Crystal Decisions can access this information as required.

If you want to configure a database separately from the Business Objects Crystal Decisions installation, read this section. If you do not want to configure a database separately, skip this section and go to [Performing a new installation](#) on page 22. If you do not configure a database separately, the Business Objects Crystal Decisions installation process can install the MySQL database and walk you through its setup for Business Objects Crystal Decisions.

The CMS stores information about the following:

- Security

The CMS database stores information about the users created for the system and the rights that the users have been granted. The CMS enforces these rights.

- Objects

Files published to Business Objects Crystal Decisions are known as objects, and include such file types as Web Intelligence and Crystal reports. The CMS database stores information about the location of these objects in the Business Objects Crystal Decisions system. It also maintains the hierarchy of folders, categories, and inboxes that the objects are organized into.

- Servers

The CMS database stores a list of status for various servers that are part of Business Objects Crystal Decisions. Other components can access the database to get information about the availability of services required to perform tasks in the system.

For detailed information about each server, see the BusinessObjects Enterprise Administrator's Guide.

For a detailed list of tested environments, consult the *Platforms.txt* file included with your product distribution. This file includes specific version and Service Pack requirements for web servers, web browsers, web application servers, databases, and operating systems.

Preparing your existing database server

If you plan to use an existing database server with Business Objects Crystal Decisions, you or your database administrator need to prepare your own database server before you install.

The following database servers are supported on Linux:

- Oracle
- DB2 or DB2 Express
- Sybase
- MySQL

See the *Platforms.txt* file included with your product distribution for a complete list of tested database software and version requirements.

Business Objects Crystal Decisions requires a database to store information about the system and its users. You can install a MySQL database during the installation, or you can use an existing database. If you plan to install MySQL during the installation, proceed to [Beginning your installation](#) on page 20.

To prepare your database

1. Create a new, empty database on your database server.
2. Create a new user and assign it a secure password.
3. Ensure that the new account has permission to create, modify, delete tables and create procedures so that BusinessObjects Enterprise can modify the database as required.
4. Record the name of the database, the user account, and the password.

This information will be required when you install Business Objects Crystal Decisions.

Tip: You may want to record the database information on the Installation Checklist at the end of this chapter so they are available when you install.

Sourcing your database clients

If you are using an existing database, your database clients must be accessible by Business Objects Crystal Decisions during the installation and by the Business Objects Crystal Decisions processes after the installation completes. This can be done using the dot operator command, or the source command, followed by the location of your database clients. This information can also be added to the profile for the userid that runs Business Objects Crystal Decisions.

Note: This is not required if you install MySQL with your installation. If you plan to install MySQL during the installation, proceed to [Beginning your installation](#) on page 20.

For information on making sure your database can be accessed by Business Objects Crystal Decisions during the installation, see [Verifying connectivity to your existing database](#) on page 19.

For information on how to migrate your initial CMS database to another supported database server later, see chapter four of the *BusinessObjects Enterprise Administrator's Guide*.

Verifying connectivity to your existing database

To create tables and write data to your new CMS database on your database server, the installation scripts need to establish a connection to the database server. That is, when you log on to Linux with the user name from which you will perform the installation, the default shell environment must include the appropriate database environment variables and/or initialization files. Only then can the installation setup program access the CMS database using your database client software.

Before running the installation script, test the shell environment of the account from which you will install Business Objects Crystal Decisions to verify database connectivity and privileges. See the section Providing and verifying

connectivity to the CMS database in the Planning Your Installation chapter of *BusinessObjects Enterprise Installation Guide for Unix*.

Note: Consult your database documentation and/or your database administrator if the account shell environment from which you will install Business Objects Crystal Decisions has not yet been set up for your database client software, or if you are unable to connect successfully to the database.

Setting up the product distribution

This section shows how to distribute Business Objects Crystal Decisions so that you can perform an installation.

You can perform this installation remotely through a telnet session, or locally through a terminal window. Before following this procedure, ensure that your Linux system meets the minimum requirements to install Business Objects Crystal Decisions. For details, see [Verifying your Linux system setup](#) on page 15.

To set up product distribution

1. Log on to your Linux system under the account designated for installing Business Objects Crystal Decisions.

For details on how to create this account, see [Preparing your existing database server](#) on page 18.

2. Optionally, copy the installation files to a temporary install directory.

Beginning your installation

The following instructions lead you through the initial steps of installing Business Objects Crystal Decisions on Linux. These steps are done regardless of the type of installation you choose to perform. In this stage you do the following:

- Choose the language for the installation.
- Agree to the license terms.
- Enter the product keycode.

- Select where to place the installation files.
- Select either a user or a system installation.

When you complete these tasks, proceed to the section [Performing a new installation](#) on page 22.

Note: If you selected a system install, you must also complete additional steps to complete your installation. See [Finishing a system installation](#) on page 25 after you complete the tasks outlined in the Performing a new installation section.

To begin your installation

1. Change to the directory that contains the installation files.
Note: Optionally you can use the `-t` option to specify the temporary storage location for the installation.
2. Type `./install.sh`
3. Select the language for your installation, and then press **Enter**.
4. Read the software license agreement. Type `y` to agree to the terms and continue with the setup program.
5. Enter the product keycode, and then press **Enter**.
6. Choose where to install the product.
 - To accept the default installation directory, which is your current directory, press Enter.
 - To specify a different directory, use the Backspace key to remove the default directory. Then type the directory where you want the installation files placed, and then press Enter.
7. Select the type of installation you want to perform.

Your installation options are User and System.

Note: To perform a system installation, you require root-level authority.

After you perform a System installation, there are a few additional steps you must perform. For details about these additional steps, see [Finishing a system installation](#) on page 25.

You will now be prompted to choose the type of installation you want to perform. For further instructions, see [Performing a new installation](#) on page 22.

The following step applies if you select a system installation:

- [Finishing a system installation](#) on page 25

Performing a new installation

Performing a new installation is the simplest way to deploy Business Objects Crystal Decisions because all the required and optional components are installed by default onto one machine.

Note: The Installation Type screen in the following procedure appears after you have completed the initial set up of the Business Objects Crystal Decisions installation. For more information, see [Beginning your installation](#) on page 20.

To perform a new installation

1. From the list of options on the Installation Type screen, select **New**.
2. Choose whether to use an existing database or to install MySQL.

If you choose to use an existing database:

- a. Select **Use an existing database**, and then press **Enter**.
- b. Select the database type for your CMS.

You can choose from MySQL, Oracle, DB2, or Sybase.

- c. Provide the required information about your database in the fields provided, and press **Enter**.

The required information is summarized in the following table:

Database type	Information required
MySQL	Host Name User ID for CMS Password for CMS MySQL port number
Oracle	TNS name User ID for CMS Password for CMS CMS port number
DB2	Alias name User ID for CMS Password for CMS CMS port number
Sybase	Sybase Service name User ID for CMS Password for CMS CMS port number

- d. Decide if you want to reinitialize the database.

Reinitialization of the Business Objects Crystal Decisions database will erase all previous content in that particular database.

Note: If you are using an existing database, the database client must be installed, configured and accessible to the user account and database environment. Consult the documentation specific to your database environment for further details.

For more information on sourcing your database, refer to [Preparing your existing database server](#) on page 18.

If you choose to install MySQL:

- a. Select **Install MySQL**, and press **Enter**.
- b. Enter the MySQL port number and the password for database administrator, and then press **Enter**.

If you leave the MySQL port number field blank, port 3306 will be used.

- c. Provide information for your MySQL CMS database, and then press Enter.

The table which follows summarizes the required information.

Database type	Information required
MySQL	MySQL CMS name User ID for MySQL CMS database Password for CMS database

- d. Type the port number for the CMS, and then press Enter, or press Enter to accept the default of 6400.
3. Choose whether to use an existing Java application server or to install Tomcat.
- a. Make sure **Install Tomcat** is highlighted, and then press **Enter**.
 - b. Type the HTTP, the Redirect and the Shutdown ports for Tomcat, and then press Enter, or press **Enter** to accept the defaults.
- Note:** The default ports are 8080 (HTTP), 8443 (Redirect), and 8005 (Shutdown).
- a. To use Java application server that is already installed, select Use an existing Java application server.
4. Press **Enter** to start the installation.

When the new installation is finished, the setup program starts the servers as daemons and then enables each server that is registered with the CMS.

Note: If you did not install Tomcat when you installed Business Objects Crystal Decisions; InfoView and the Central Management Console (CMC) must be deployed before you use them. For more information on deploying on the supported web application servers, consult the *BusinessObjects Enterprise Installation Guide* for Unix.

For more information about the system architecture of an installation of Business Objects Crystal Decisions, see the Business Objects Enterprise Architecture chapter in the *BusinessObjects Enterprise Administrator's Guide*.

Finishing a system installation

If you chose to perform a system installation, the setup program script prompts you to run the `setupinit.sh` script after it is finished. The `setupinit.sh` script copies the run control scripts to your `/etc/rc#` directories. When implemented, these run control scripts start/stop servers associated with Business Objects Crystal Decisions on system startup/shutdown.

Note: To run the system installation, you must log on using a normal account. After installation, however, you must have root privileges to run the `setupinit.sh` script.

Performing a client tool installation

This section shows you how to perform an installation that installs only the client tools on a Windows machine. These tools include:

- The Publishing Wizard
- The Import Wizard
- The Data Source Migration Wizard
- Universe Designer

These client tools are not needed by users who access InfoView or the Central Management Console (CMC) administrative web application. Rather, these additional tools are provided for users who are responsible for publishing or creating multiple reports or for moving objects between systems. Some of these tools are used for migration of existing documents from earlier product versions or creating new documents.

If you install Business Objects Crystal Decisions on a Linux machine, you can connect remotely to Business Objects Crystal Decisions with the client tools. However, the client applications must be installed on Windows.

Note: The client installation do not require a product activation keycode.

To install the client tools

1. Run **setup.exe** from the root directory of your product distribution unless Autoplay is enabled for your CD-ROM drive.

When you start the installation, the Microsoft Windows Installer may need to be installed or upgraded on the local machine. If so, the Wise Installation Wizard performs the necessary modifications and prompts you when finished. Click Yes to restart the machine and resume the installation automatically.

2. Select which language to install from the list, and then click **OK**.

In a few moments you will see the Welcome to BusinessObjects Enterprise Installation Wizard dialog.

3. Click **Next**.
4. Click the **I accept the License Agreement** button on the License Agreement dialog, and then click **Next**.
5. Select **Perform Client Installation**, and then click **Next**.
6. Specify the location to install, in the Directory Selection dialog box, and then click **Next**.
7. Click **Next**.

The installation of files begins immediately. When the installation program has finished copying files, follow any additional instructions that appear.

Performing a silent installation

A silent installation is one that you run from the command line to automatically install Business Objects Crystal Decisions on any machine in your system, without the installation program prompting for information during the installation. To install silently, run the `install setup` program, adding parameters that provide information for installation settings and directory paths. By customizing the parameters of the `install` command, you can automatically install Business Objects Crystal Decisions silently on any machine in your system.

The silent installation is particularly useful when you need to perform multiple installations. You can also use the silent installation script in your own scripts.

For example, if your organization uses scripts to install software on machines, you can add the silent Business Objects Crystal Decisions installation command to your scripts.

The silent installation command consists of the command `install`, followed by the location of the installation executable file, and a number of parameters that provide information about the installation. For example:

The following example would perform an english new user installation with these options:

- Business Objects Crystal Decisions
- Tomcat
- MySQL
- Database reinitialized

```
./install -c en -INSTALLDIR /program/business/boe_115 -BOBJELI  
CENSEKEY 00000-1111111-2222222-0000 -BOBJEINSTALLLOCAL user -  
INSTALLTYPE new -CMSPORTNUMBER 13888 -DBTYPE MySQL -SERVICENAME  
boe -INSTALLMYSQL yes -DATABASEUID hkrishna -DATABASEPWD sa  
-REINIT yes -MYSQLROOTPWD sa -INSTALLTOMCAT yes -TOMCATCONNEC  
TORPORT 13890 -TOMCATREDIRECTPORT 13889 -TOMCATSHUTDOWNPORT  
13891
```

The example uses the most common parameters. You can choose any number of valid parameters, but it is good practice to keep the silent installation as simple as possible.

Note that when you run a silent installation, you need to run the command once for each CD, but you only need to provide the full list of options for the first CD. For example, if the CDs are on different CD drives, the commands could look like the following:

```
./install -s /mnt/cd1 -INSTALLDIR /mymachine/BOBJ/Enterprise115  
-BOBJELICENSEKEY 00000-0000000-0000000-0000 -INSTALLTYPE new  
-BOBJEINSTALLLOCAL user -CMSPORTNUMBER 6401 -DBTYPE Oracle -  
SERVICENAME tnsname -DATABASEUID userid -DATABASEPWD password  
-REINIT yes -INSTALLTOMCAT yes -TOMCATCONNECTORPORT 8080 -  
TOMCATREDIRECTPORT 8443 -TOMCATSHUTDOWNPORT 8005  
./install -s /mnt/cd2 -INSTALLDIR /mymachine/BOBJ/Enterprise115  
./install -s /mnt/cd3 -INSTALLDIR /mymachine/BOBJ/Enterprise115
```

The following table lists the most common parameters used in a silent installation. To use a parameter, place it on the command line after the `install` command and the path for the installation files.

Note: Sample parameter values are case-sensitive.

Installation parameter	Description
<code>-s filepath</code>	Specifies the location of the CD you are installing from. Replace <i>filepath</i> with the full path for the CD drive or other installation source directory. For example, <code>-s /mnt/CD1/</code>
<code>-INSTALLDIR filepath</code>	Specifies the directory where you want to install the new Business Objects Crystal Decisions components. Replace <i>filepath</i> with the full path for the installation directory. For example, <code>-INSTALLDIR /BOBJE/Enterprise115</code> .
<code>-x</code>	This parameter is followed by a comma-separated values (CSV) string of features that you do not want to install. Note that this cannot be used in combination with the <code>-f</code> option. See the <i>my-menu.xml</i> file for a full list of features.
<code>-f</code>	This parameter is followed by a comma-separated values (CSV) string of features that you want to install. Note that this cannot be used in combination with the <code>-x</code> option. See the <i>my-menu.xml</i> file for a full list of features.
<code>-c languagecode</code>	This option determines the language for the installation. Replace <i>languagecode</i> with a language code for one of the supported languages (for example, <code>chs, cht, de, en, es, fr, it, jp, ko, nl</code>)
<code>-INSTALLTYPE</code>	Specifies the type of installation. The possible values are <code>new</code> or <code>custom</code> .

Installation parameter	Description
-DBTYPE	When installing a Central Management Server, you need to specify the type of database you want to use. Possible values include Oracle, DB2, Sybase, and MySQL.
-INSTALLMYSQL	When installing a Central Management Server, you can specify whether or not to install and configure a new MySQL database. The options are <i>yes</i> or <i>no</i> ; <i>no</i> is the default.
-MYSQLHOSTNAME	With this parameter, you can specify the host name of your MySQL server.
-SERVICENAME	Specifies the service name used to connect to the Central Management Server database.
-SERVICEPORT	Specifies the port number used to connect to the Central Management Server database. This is required only for MySQL databases.
-DATABASEUID	Specifies the user ID used to connect to the Central Management Server database. This option cannot be set to <i>root</i> if the <i>-INSTALLMYSQL</i> option is set to <i>yes</i> .
-DATABASEPWD	Specifies the password used to connect to the Central Management Server database. If this option is not specified, it defaults to blank.
-MYSQLROOTPWD	When the <i>-INSTALLMYSQL</i> option is set to <i>yes</i> , you must also specify the <i>-MYSQLROOTPWD</i> option. This option specifies the password used for the <i>root</i> account when setting up the database.

Installation parameter	Description
-CMSPORTNUMBER	Specifies the port number for the Central Management Server. If not specified, the default is 6400.
-REINIT	Specifies whether to reinitialize the Central Management Server database. The options are <code>yes</code> or <code>no</code> ; <code>yes</code> is the default.
-BOBJEINSTALLLOCAL	Specifies whether to perform a user or a system installation. The options are <code>user</code> or <code>system</code> ; <code>user</code> is the default.
-BOBJELICENSEKEY 00000-0000000-0000000-0000	Specifies your product activation key-code.
-INSTALLTOMCAT	To install Tomcat, set this option to <code>yes</code> . The default value is <code>no</code> .
-TOMCATCONNECTORPORT	The port number that Tomcat uses to connect. The default is 8080.
-TOMCATREDIRECTPORT	The port number that Tomcat uses to redirect. The default is 8443.
-TOMCATSHUTDOWNPORT	The port number that Tomcat uses to shut down. The default is 8005.
-REINIT	Use <code>yes</code> to reinitialize the database and <code>no</code> to not reinitialize.

Using `ccm.sh` to start the servers associated with Business Objects Crystal Decisions

The `ccm.sh` script provides you with a command-line interface to the various Business Objects Crystal Decisions components. For more information about

this script and others that are installed on your system, see the *BusinessObjects Enterprise Administrator's Guide*.

In Business Objects Crystal Decisions, the `install` setup program starts and enables servers automatically. The following information is included for reference.

To manually start and enable the servers

1. Go to the `bobje` directory that was created by the installation:

```
cd INSTALLDIR/bobje
```

2. Start the servers in Business Objects Crystal Decisions:

```
./ccm.sh -start all
```

3. Enable all of the servers for Business Objects Crystal Decisions. If you are using the default ports, type the following command:

```
./ccm.sh -enable all
```

If you are using a different port number for the CMS, issue the following command:

```
./ccm.sh -enable all -cms servername:portnumber
```

The daemons are now listening on the appropriate ports.

To view additional help on `ccm.sh`

The `ccm.sh` script provides a detailed description of its command-line options. To see the help, issue the following command:

```
INSTALLDIR/bobje/ccm.sh -help | more
```

Post install component deployment

When you install Business Objects Crystal Decisions on Linux and install Tomcat with your `install`; InfoView, the Central Management Console (CMC), the Web Component Adapter (WCA) and the BusinessObjects Enterprise SDK are installed, configured and deployed for you.

InfoView is a web-based interface that end users access to view, schedule, and keep track of published reports. The CMC allows you to perform user management tasks such as setting up authentication and adding users and groups. The Web Component Adapter (WCA) is an application that runs on your Java Web Application Server. The WCA hosts web components, including a CSP plug-in that allows you to run CSP applications. The BusinessObjects Enterprise SDKs are used by many Business Objects Crystal Decisions components and are also used to simplify the development of custom Business Objects Crystal Decisions applications.

If you do not install Tomcat when you install Business Objects Crystal Decisions, these components must be configured and deployed before you use them. Consult the *BusinessObjects Enterprise Installation Guide* for Unix for information on deploying on the supported web application servers.

Note that for Business Objects Crystal Decisions, you only need to deploy the following WAR files:

- webcompadapter.war
- jsfadmin.war
- desktop.war
- admin.war

For more information about the system architecture of an installation of Business Objects Crystal Decisions, see the BusinessObjects Enterprise Architecture chapter in the *BusinessObjects Enterprise Administrator's Guide*.

Note: If you have a firewall between the machine running your Java application server and Business Objects Crystal Decisions, you must perform additional system configuration. For information on how to configure firewalls, see the section Working with Firewalls in the *BusinessObjects Enterprise Administrator's Guide*.

Verifying the Java web applications

The setup program automatically deploys the Java web applications to default locations. You can test the deployments and change the default configuration if necessary.

To test the Java deployment of the InfoView and the Java Administration Launchpad

1. Open a web browser and type `http://servername:portnumber/businessobjects/enterprise115/desktoplaunch` in its address bar.

For `servername`, substitute the name of the machine where you installed Business Objects Crystal Decisions.

The log on page for the InfoView should appear.

2. To test the Java Administration Launchpad, open a web browser and type `http://servername:portnumber/businessobjects/enterprise115/adminlaunch` in its address bar.

For `servername`, substitute the name of the machine where you installed Business Objects Crystal Decisions.

The Java Administration Launchpad should open.

Troubleshooting common Business Objects Crystal Decisions problems

The following table documents some of the more common problems you may have after you install Business Objects Crystal Decisions.

Problem	Possible cause of problem
<p>You installed Business Objects Crystal Decisions with Tomcat, and the installation has completed without errors. However, when you try to view the Central Management Console or InfoView you encounter one of the following problems:</p> <ul style="list-style-type: none"> You can see the Tomcat server is running but the page you requested is not loaded. You get a message that the page cannot be found. 	<p>The installation of Business Objects Crystal Decisions uses the following ports by default: 8080 (HTTP), 8443 (Redirect), and 8005 (Shutdown). If you have another instance of Tomcat on your Linux server, these ports may already be in use.</p> <p>To change the ports edit the file <code>ccm.config</code>, which is located in the following location <code><install_dir>/bobje</code> (where <code>install_dir</code> is the location you installed Business Objects Crystal Decisions). After you have saved your changes, restart Tomcat. For more information on utilities, see the "Unix Tools" section of the <i>BusinessObjects Enterprise Administrator's Reference Guide</i>.</p>
<p>You installed Business Objects Crystal Decisions and were able to logon to the Central Management Console with no problems but get the following message when you try to log on to InfoView:</p> <p>"Your license key is invalid or has expired. If you received a temporary license key by purchasing another BusinessObjects product, you must register Business Objects Crystal Decisions to receive your permanent license key."</p>	<p>Your evaluation period may have ended or you have entered an invalid license key for your product. Consult your Sales representative for a permanent license key or enter the correct license key in the Central Management Console. For further details on entering a license key see the <i>BusinessObjects Enterprise Administrator's Guide</i>.</p>
<p>A user attempts to log on with a valid user name and password but is denied access.</p>	<p>All concurrent licenses may be in use. Retry in a few minutes. The user will be allowed access when either another user logs off or their inactive session expires.</p>

Problem	Possible cause of problem
<p>During the install, you specify that you want to use an existing database. When you enter the database type, you get an error that your database environment variable is not set.</p>	<p>Your database client is either not installed, or not accessible to the user. Exit the installation and then contact your system administrator for details on how to set this correctly on your system. After you have set this up, begin your installation again.</p>

2 | Installing Business Objects Crystal Decisions on Linux

Troubleshooting common Business Objects Crystal Decisions problems



Business Objects Crystal
Decisions Product
Information

3

chapter



Business Objects Crystal Decisions and BusinessObjects Enterprise

Business Objects Crystal Decisions is built on the BusinessObjects Enterprise framework. This section contains information about the following topics:

- [Licensing](#) on page 38
- [Business Objects Crystal Decisions components](#) on page 39

Licensing

When you purchase Business Objects Crystal Decisions, your package includes the following services:

- Five concurrent access licenses for end user report viewing via the web
- One year of technical support and maintenance

Note: For complete details on licensing terms and conditions, consult the End User License Agreement (license.pdf) located in the /docs/en directory of your program installation.

InfoView

InfoView has five concurrent access licenses (CAL). These licenses accept a maximum of five concurrent logons per package purchased. This means that five people can simultaneously connect to the Business Objects Crystal Decisions system for report viewing.

If you require more than five simultaneous connections, you may purchase additional Business Objects Crystal Decisions packages. These additional packages may be used within a single deployment. The maximum deployment size for a single system is 20 concurrent users.

If you receive a License Key Error message such as "An unknown error has occurred in the license key system. Please confirm that you have not exceeded the maximum number of licenses for this product", this means you have reached the maximum number of 20 allowed licenses on a single system.

Server Licenses

Each Business Objects Crystal Decisions system may be installed on a single server machine with a maximum of four processors.

For complete details on licensing terms and conditions, please consult the End User License Agreement (license.pdf) located in the `/docs/en/` directory of your program installation.

Business Objects Crystal Decisions components

This section provides a brief overview of the Business Objects Crystal Decisions components with details about where to find more information about them. Business Objects Crystal Decisions includes the following components:

- InfoView web portal interface

InfoView is a web application that provides a window to Web Intelligence documents and Crystal reports published to Business Objects Crystal Decisions. InfoView allows you to view, schedule, export, and save Web Intelligence documents and Crystal reports.

For more information, see the BusinessObjects Enterprise InfoView User's Guide.

- Central Configuration Manager

The Central Configuration Manager (CCM) is a server-management tool that allows you to configure each of your Business Objects Crystal Decisions components. This tool allows you to start, stop, enable, and disable servers, and it allows you to view and to configure advanced server settings. For more information, see Administering BusinessObjects Enterprise in the BusinessObjects Enterprise Administrator's Guide.

- Central Management Console

The Central Management Console (CMC) is a web application that provides a way to manage the Business Objects Crystal Decisions environment. It can be used to manage users, content, and servers. You can also use the CMC to stop, enable, and configure servers.

For more information, see Administering BusinessObjects Enterprise in the BusinessObjects Enterprise Administrator's Guide.

- Universe Designer

Universes are created by a universe designer using Designer. Business Objects Designer is a software tool that allows you to create universes for Web Intelligence users.

For more information, see the Designer's Guide available from the Business Objects Customer Support web site at:
<http://support.businessobjects.com/documentation/>.

- Scheduling

You can run Web Intelligence documents and Crystal reports automatically at set times such as daily, weekly, hourly, or on any predefined business calendar. The report that is created is saved by the system and can be viewed by users at any time.

For more information, see BusinessObjects Enterprise Security Concepts in the BusinessObjects Enterprise Administrator's Guide.

- Security

Business Objects Crystal Decisions allows you to set security so that you can avoid unauthorized access to the system. It contains its own Enterprise authentication method and also supports third-party Windows NT, LDAP, and Active Directory authentication.

For details about security, see BusinessObjects Enterprise Security Concepts in the BusinessObjects Enterprise Administrator's Guide.

- Viewers

Report Viewers display Web Intelligence documents and Crystal reports pages in users' web browsers. There are different Report Viewers available.

For more information, see Report Viewers in the BusinessObjects Enterprise Administrator's Guide.

- Import Wizard

The Import Wizard is a locally installed tool that allows administrators to import users, groups, folders, and reports from an existing BusinessObjects Enterprise, Crystal Enterprise, or Crystal Info implementation to Business Objects Crystal Decisions.

For more information, see Importing Objects to BusinessObjects Enterprise in the BusinessObjects Enterprise Administrator's Guide.

- Publishing Wizard

The Publishing Wizard is a locally installed tool that allows administrators and users to add Crystal reports to Business Objects Crystal Decisions.

For more information, see Publishing Objects to BusinessObjects Enterprise in the BusinessObjects Enterprise Administrator's Guide.

- Repository Migration Wizard

The Repository Migration Wizard is a tool that allows you to copy the data from an existing repository database into another data source. The source data is not removed.

For more information, see Managing BusinessObjects Enterprise Repository in the BusinessObjects Enterprise Administrator's Guide.

- Data Source Migration Wizard

The Data Source Migration Wizard is a tool that allows you to migrate Crystal reports that are based on Crystal queries, dictionaries, and Business Views to Business Objects Crystal Decisions.

Consult the *BusinessObjects Enterprise Administrator's Guide* and the *BusinessObjects Enterprise User's Guide* for more information about using Business Objects Crystal Decisions. While you are referring to the BusinessObjects Enterprise guides, you may encounter some information that does not apply to Business Objects Crystal Decisions. To help you differentiate between the information that applies to Business Objects Crystal Decisions and the information that does not, review the *Business Objects Crystal Decisions Document Roadmap* found in the `docs` directory of your product distribution.

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