



# SAP BusinessObjects Enterprise Integration for SAP Solutions Installation and Administration Guide

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## Contents



# Introduction



# 1

## chapter



BusinessObjects XI Integration for SAP Solutions provides support for specific BusinessObjects products and delivers improvements in the areas of usability, implementation, and administration.

This section's focus is to provide a high level overview of the key new features and enhancements that are specific to BusinessObjects XI Integration for SAP Solutions.

For more information on what's new in Crystal Reports 2008, see the "What's New in Crystal Reports 2008" chapter of the *Crystal Reports User's Guide*. For more information on what's new in BusinessObjects Enterprise, see the "What's New in BusinessObjects Enterprise" chapter of the *SAP BusinessObjects Enterprise Administrator's Guide*.

#### Related Topics

- [About this guide](#)

## About this guide

The BusinessObjects XI Integration for SAP Solutions provides you, the SAP user, with the ability to extract the business intelligence contained within your SAP systems. BusinessObjects EnterpriseInfoView allows you to share your reports over the Web, and SAP Authentication enables Single Sign On between your SAP system and BusinessObjects Enterprise.


BusinessObjects XI Integration for SAP Solutions consists of several main components: Crystal Reports is the report-design tool that allows you to report off your SAP data; BusinessObjects Enterprise provides the framework for managing, scheduling, and distributing reports over the Web; Web Intelligence enables you to create queries and documents quickly; and Voyager allows you to analyze and report off the multidimensional data that is stored in the Info Cubes of your SAP Business Information Warehouse.

BusinessObjects XI Integration for SAP Solutions provides the database drivers and other features for reporting off SAP. This guide documents the SAP report-design features that are available once you install on top of Crystal Reports or Voyager. It also shows how to publish and view these reports in a BusinessObjects Enterprise environment.


## Who should read this guide

This guide is intended for SAP and BusinessObjects Enterprise administrators who want to install and configure the core Business Objects products with BusinessObjects XI Integration for SAP Solutions. Familiarity with your SAP system and BusinessObjects Enterprise is required to use this guide.





# Components and Features



# 2

chapter



This section introduces the various reporting components that make up BusinessObjects XI Integration for SAP Solutions. The section then provides information on the overall product architecture and describes features provided by various components.

## Overview

BusinessObjects XI Integration for SAP Solutions provides you with powerful report-design tools and a framework for managing, scheduling, and distributing your reports over the Web. As such, it enables you to extract additional value from your SAP Business Information Warehouse (BW) and R/3 data and share it with users across the enterprise.

BusinessObjects XI Integration for SAP Solutions includes four major products—BusinessObjects Enterprise Professional, Crystal Reports Professional, Web Intelligence, and Voyager—along with components that integrate the Business Objects reporting technologies with your existing SAP systems.

## Add-Ons

The Add-Ons distribution contains the setup program and additional documentation for the components that integrate with your SAP system. The setup program determines which Business Objects products are already installed, and then installs the add-on components as required.

The add-on components are:

- Data Access

This component provides database drivers that are designed specifically for reporting off SAP data. Crystal Reports drivers are included for OpenSQL, InfoSet, BW Query, BW MDX and ODS. Crystal Reports drivers need to be installed on the machines that host the Crystal Reports servers. The MDA SAP driver needs to be installed on the machines that host the Voyager server, Universe designer, Offline Web Intelligence designer and Web Intelligence Processing Server.

- Crystal Reports SAP Toolbar



Integrated within Crystal Reports, the SAP Tools toolbar facilitates tasks associated with reporting off BW queries. It allows you to log on to BW and work with its data sources, save reports to BW, and publish reports immediately to BusinessObjects Enterprise via BW.

For details on using the toolbar, see the *BusinessObjects XI Integration for SAP Solutions User's Guide*.

- SAP Authentication

This component allows you to map your existing SAP roles and users to BusinessObjects Enterprise. It also enables BusinessObjects Enterprise to authenticate users against the SAP system, thereby providing Single Sign On to your SAP users. As a result, once SAP users are logged on to the SAP system, they are recognized by BusinessObjects Enterprise as authenticated users.

- BW Publisher

This component allows you to publish reports individually or in batches from BW to BusinessObjects Enterprise.

- Web content

This component includes BusinessObjects EnterpriseInfoView. InfoView allows users to organize and view their Crystal reports in multiple languages over the Web.

- Transport files

The transport files are included in the transports directory of the installation CD. You must import these transports and configure a number of authorization objects in order for users to connect to SAP through Crystal Reports and BusinessObjects Enterprise.

- BW Content Administration Workbench

This feature allows you to manage report publishing from with BW. You can identify roles in your BW with specific BusinessObjects Enterprise systems, publish reports, and synchronize between BW and a BusinessObjects Enterprise system.

- Sample reports

The sample reports demonstrate a variety of ways in which you can extract value from SAP data using different database drivers.

- Sample iViews

Sample iViews illustrate how BusinessObjects Enterprise SAP Edition can be implemented with SAP Enterprise Portal version 6 and later. These iViews demonstrate sample functionality for alerts, and thumbnail views inside SAP Enterprise Portal.

- Knowledge Management

Knowledge Management (KMC)

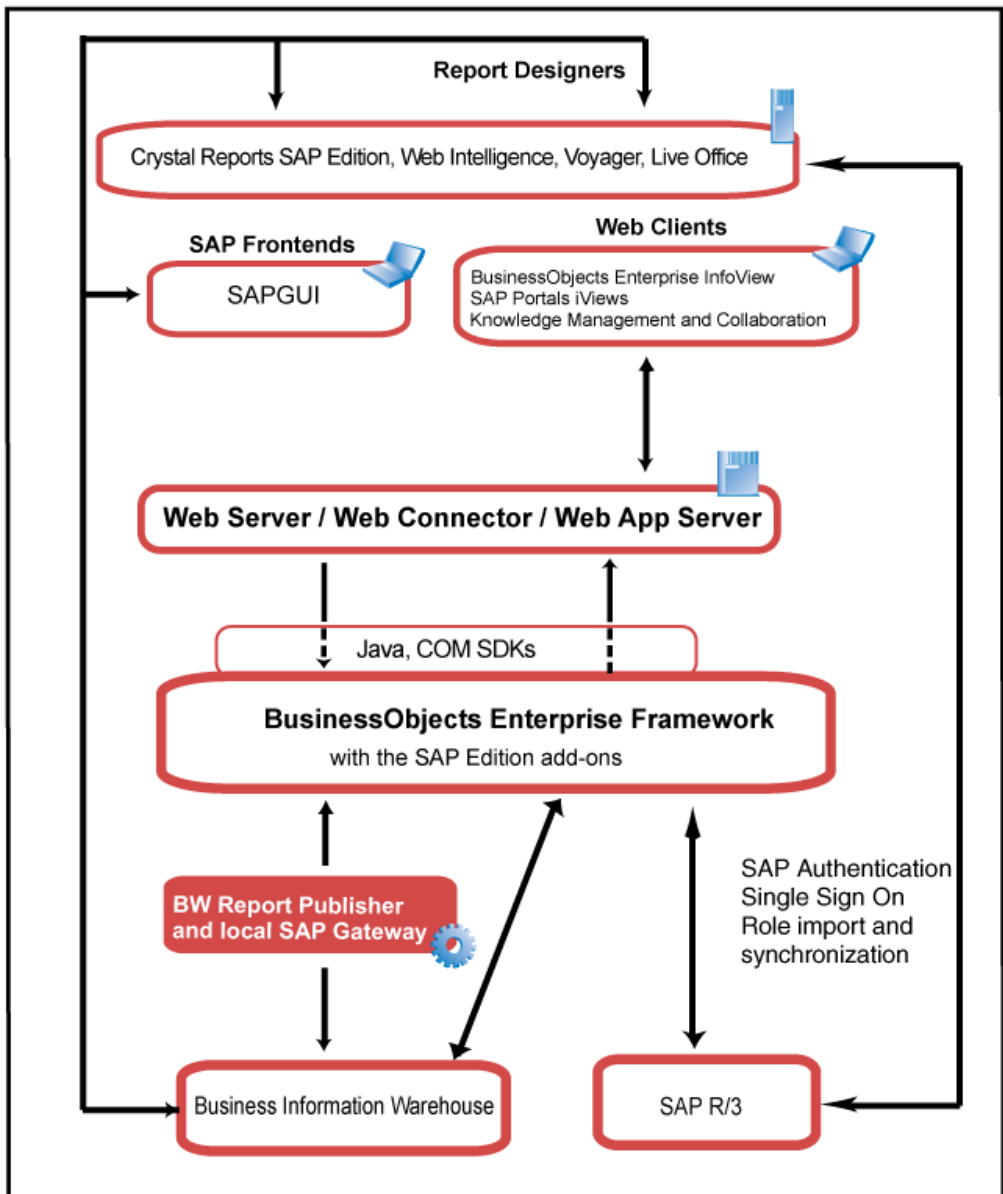
The Knowledge Management interface enables third-parties to integrate any repository into the SAP Enterprise Portal. The KMC allows users to integrate BusinessObjects Enterprise into the SAP Enterprise Portal. When the BusinessObjects Enterprise repository is integrated into the KMC framework, the objects in the repository are accessible for different work flows like the collaboration features of the SAP Enterprise Portal.

### Related Topics

- [\*Reporting off BW queries, InfoSets, Operational Data Stores, and MDX cubes\*](#)
- [\*Reporting off other SAP data sources\*](#)
- [\*Authenticating SAP users\*](#)
- [\*Publishing from BW to BusinessObjects Enterprise\*](#)
- [\*Configuring transports\*](#)

## Integrated architecture

The following diagram illustrates how each of the BusinessObjects XI Integration for SAP Solutions components expand upon the multi-tier framework of BusinessObjects Enterprise.



If you are new to BusinessObjects Enterprise, see its documentation for a more detailed explanation of its framework, its components, and the general tasks that each component performs.

# Reporting with BusinessObjects XI Integration for SAP Solutions

This section describes the key features provided by BusinessObjects XI Integration for SAP Solutions.

## Authenticating SAP users

Security plug-ins expand and customize the ways in which BusinessObjects Enterprise authenticates users. The SAP Authentication feature includes an SAP security plug-in (`secSAPR3.dll`) for the Central Management Server (CMS) component of BusinessObjects Enterprise. This SAP security plug-in offers several key benefits:

- It acts as an authentication provider that verifies user credentials against your SAP system on behalf of the CMS. When users log on to BusinessObjects Enterprise directly, they can choose SAP Authentication and provide their usual SAP user name and password. BusinessObjects Enterprise can also validate Enterprise Portal logon tickets against SAP systems.
- It facilitates account creation by allowing you to map roles from SAP to BusinessObjects Enterprise user groups, and it facilitates account management by allowing you to assign rights to users and groups in a consistent manner within BusinessObjects Enterprise.
- It dynamically maintains SAP role listings. So, once you map an SAP role to BusinessObjects Enterprise, all users who belong to that role can log on to BusinessObjects Enterprise. When you make subsequent changes to the SAP role membership, you need not update or refresh the listing in BusinessObjects Enterprise.
- The SAP Authentication component includes a web application for configuring the plug-in. You can access this application in the "Authentication" area of the Central Management Console (CMC).

### Related Topics

- [Configuring SAP authentication for BusinessObjects Enterprise](#)

## Reporting off BW queries, InfoSets, Operational Data Stores, and MDX cubes

BusinessObjects XI Integration for SAP Solutions provides connectivity to your SAP data through four database drivers—the BW Query driver, the InfoSet driver, the ODS driver, and the MDX driver:

- The BW Query driver is integrated directly within the Crystal Reports interface. The SAP Tools toolbar works with the BW Query driver to allow you to report off your BW queries from within Crystal Reports. The toolbar also allows you to save reports to BW and publish them directly to BusinessObjects Enterprise.
- The InfoSet driver provides Crystal Reports with another means of accessing SAP data sources: this driver can access R/3 InfoSets (previously known as Functional Areas) and ABAP Queries. You access this driver through the Data Explorer in Crystal Reports.
- The Operational Data Store (ODS) driver allows you to use existing ODS objects from your BW Data Warehouse as a data source in Crystal Reports.
- The SAP BW MDX Query driver introduces new flexibility when reporting off BW cubes and queries. By writing reports with the MDX Query driver, you gain direct access to BW cubes, display attributes, and multiple structures.

One advantage of these drivers is that they allow business users to report off predefined views of your SAP data. Tables and fields are first logically grouped by an SAP content expert into queries, InfoSets, and so on. You then make these data sources accessible to users who are designing reports with Crystal Reports.

These same four drivers are also included in the add-ons for BusinessObjects Enterprise (the Data Access feature), so the BusinessObjects Enterprise processing servers can successfully run the reports you design against your SAP systems. These drivers allow you to work with Crystal Reports. Additionally, the Data Access feature includes the MDA SAP driver, which lets you work with Voyager and Web Intelligence data sources. For more information about using Voyager and Web Intelligence, see these guides:

- *BusinessObjects Voyager User's Guide*
- *Web Intelligence Online Help*

### Note:

Before you can design or process reports with the InfoSet or OpenSQL drivers, you must install the corresponding transport file on the SAP system.

For instruction on creating Crystal reports with these drivers, consult the *BusinessObjects XI Integration for SAP Solutions User's Guide* available online.

### Related Topics

- [Configuring transports](#)
- [Add-Ons](#)
- [http://support.businessobjects.com/documentation/product\\_guides/default.asp](http://support.businessobjects.com/documentation/product_guides/default.asp)

## Reporting off other SAP data sources

In addition to the previously mentioned drivers, BusinessObjects XI Integration for SAP Solutions also includes the Open SQL driver, which allows you to report off additional SAP data sources from within Crystal Reports, BusinessObjects Enterprise, and Voyager.

### Related Topics

- [Add-Ons](#)

## Reporting off tables, views, clusters, and functions

The Open SQL driver is the most powerful of the drivers due to the flexibility it provides for accessing data in SAP. This flexibility, however, results in a higher level of complexity than with the InfoSet driver.

When you create reports that use the Open SQL driver, you gain easy access to SAP's transparent tables, pool tables, cluster tables, and views. Users who are currently involved with the production of ABAP reports will find it easy to build reports quickly with this driver.

Advanced functionality in the driver also allows reporting against ABAP functions and ABAP data clusters. ABAP developers can use these features to perform advanced tasks such as reporting against data clusters in HR.

## Reporting off multidimensional data in BW

The BW Voyager has been specially designed to integrate the Online Analytical Processing (OLAP) viewing capabilities of Voyager and Crystal Reports with your SAP Business Information Warehouse (BW) system. Users can connect to multidimensional BW Info Cubes and generate reports that incorporate complex data analysis.

For additional information on OLAP analysis and reporting, refer to your Voyager and/or Crystal Reports documentation.

## Publishing from BW to BusinessObjects Enterprise

The BW Publisher allows you to publish Crystal reports (.rpt files) individually or in batches from BW to BusinessObjects Enterprise.

Reports are published from BW to BusinessObjects Enterprise in several ways: users who design Crystal reports can simultaneously save reports to their roles in BW and publish them to BusinessObjects Enterprise, provided they have sufficient rights. Users with the appropriate rights within BW and BusinessObjects Enterprise can also publish reports individually or in batches using the Content Administration Workbench.

Details of the publishing process depend upon the publisher configuration that you select.

### Related Topics

- [Publishing reports using the Content Administration Workbench](#)
- [Add-Ons](#)

## Selecting your BW Publisher configuration

You can configure the BW Publisher in one of two ways:

- Install the BW Publisher as a service on a BusinessObjects Enterprise machine. The BW Publisher service will start instances of the BW Publisher as required.
- Install a local SAP Gateway to create instances as needed.

Select the configuration method based on the requirements of your site, after considering the advantages and disadvantages of each configuration.

### **BW Publisher service**

Advantages:

- It is simpler to install than a local SAP Gateway.
- It is scalable because new publisher instances are created automatically in response to increased publishing load.

Disadvantages:

- It is more difficult to administer than a local SAP Gateway because changes to the BW Publisher service require you to edit the registry.
- It makes less efficient use of computing resources than a local SAP Gateway because Publisher Instances are not stopped automatically when they are no longer needed.

### **Local SAP Gateway**

Advantages:

- It uses system resources more efficiently than a BW Publisher service for Windows installations of BusinessObjects Enterprise.

Disadvantages

- It is more complex to install and configure than the BW Publisher service.

### **Note:**

For UNIX installations of BusinessObjects Enterprise, install BW Publisher as a service.

For UNIX installations of BusinessObjects Enterprise, follow the instructions for installing the BW Publisher as a service. However, your system configuration will vary slightly as you must manually start the required number of BW Publisher instances.

To return to the Windows installation procedure, go to "Recommended initial installation".



## Publishing Reports

Whether you choose to configure the BW Publisher service with or without a local SAP Gateway, the same basic publishing process occurs.

**Note:**

Before beginning to publish, you must configure SAP authentication in BusinessObjects Enterprise, define a folder structure for your content, and import SAP roles. See [Configuring SAP authentication for BusinessObjects Enterprise](#) for complete instructions.

When a user attempts to publish one or more Crystal reports, BW looks for a Remote Function Call (RFC) destination (of type TCP/IP) that is configured to connect to this BW Publisher. The TCP/IP destination provides BW with the name and port number of the SAP Gateway that the BW Publisher is registered with.

BW then communicates over TCP/IP with the BW Publisher, and sends the following information across the network:

- The appropriate Crystal Reports file(s), with any required translated report strings.

**Tip:**

For more on translated reports, see the *Integration for SAP Solutions User's Guide*.

- The name of the appropriate Central Management Server (CMS).

The SAP Gateway responds by executing the publishing command, thereby invoking the BW Publisher. The BW Publisher logs on to the specified CMS as the user, and checks to see if the user has the appropriate permissions in BusinessObjects Enterprise to publish reports. If the user's rights are sufficient, the CMS allows the reports to be added to the system.

The main difference between the two configuration types is that if you do not install a local SAP Gateway, the BW Publisher service registers as a server program with the SAP Gateway running on your application host, using the name you specify as its Program ID string. This SAP Gateway may be installed on your single BW server, or on your central instance of BW if you have a BW cluster.

To return to the installation procedure, go to "Recommended initial installation".

## Distributing information over the Web

SAP functionality is integrated with your version of InfoView. These features are designed especially for SAP users:

- Users whose roles you import can log on to InfoView with their usual SAP credentials.
- Users can browse a hierarchy of My Groups folders that correspond to the structure of the imported roles whose content you publish from BW to BusinessObjects Enterprise. In these folders, users can locate, view, and refresh Crystal reports that have been saved in their BW roles.
- Users can schedule translated reports in specific languages and view report titles and on-demand reports.

### Tip:

These features require that you translate the reports within BW, before you publish the reports to BusinessObjects Enterprise. For more information, see the *BusinessObjects XI Integration for SAP Solutions User's Guide*.

- Administrators can divide report processing by language across server groups. This ensures that reports created or translated in a specific language are always processed by servers that can handle data in that language.

In addition, you are able to report off of a variety of other SAP data sources from within Crystal Reports, Voyager, and BusinessObjects Enterprise.

### Related Topics

- [Reporting with BusinessObjects XI Integration for SAP Solutions](#)



# Installing BusinessObjects XI Integration for SAP Solutions

# 3

chapter



This section describes the steps for installing BusinessObjects XI Integration for SAP Solutions. It also provides instructions on the main installation and configuration stages.

# Installation overview

To set up BusinessObjects XI Integration for SAP Solutions, you must complete the main installation and configuration stages in this order:

1. Check the system requirements and perform the installation procedures that correspond to your operating environment.

See [Installing on UNIX](#) or [Installing on Windows](#).

2. Complete the required base administrative tasks within SAP necessary to configure your systems to work with BusinessObjects XI Integration for SAP. Required tasks include importing transport files and setting up authorizations in SAP, configuring SAP authentication in BusinessObjects Enterprise, and configuring Data Access for SAP.

For complete details, see [Configuring SAP authentication](#).

3. If you have BW, complete the following additional configuration steps:
  - [Setting up folders and security in BusinessObjects Enterprise](#)
  - [Configuring the BW Publisher](#)
  - [Configuring publishing in the Content Administration Workbench](#)
  - [Configuring the SAP http request handler](#)

For complete information, see [Configuring the BW Publisher](#).

A number of installation tasks require the skills and security privileges of an SAP BASIS administrator.

### Note:

The Web Application Container Server (WACS) is not a supported application server for the Business Objects XI Integration for SAP Solutions. To use .NET InfoView on IIS together with BusinessObjects XI Integration for SAP Solutions, you are still required to install backend applications such as CMC or Web Services on a supported Java application server.

Once you have completed the main installation and configuration stages, you may need to complete additional tasks, depending on the features that you want to enable. For details, consult the remaining sections of this help.

**Note:**

Throughout this guide, *businessobjects\_root* refers to *BusinessObjects Enterprise root installation directory/BusinessObjects*.

## SAP requirements for both Unix and Windows

Before you can enable ticket based Single Sign On between SAP and BusinessObjects Enterprise, you must set up SAP to accept and create logon tickets. This involves setting two related profile parameters on your SAP server:

- login/accept\_sso2\_ticket
- login/create\_sso2\_ticket

The parameter values that you set depend upon whether or not the server's certificate is self-signed or signed by the SAP CA. For complete details on these profile parameters and configuring BW to accept and create logon tickets, see the **SAP Library > SAP Web Application Server > Security > SAP Web Application Server Security > User Authentication > Using Logon Tickets**.

**Note:**

You must re-start the SAP system to activate your changes.

## Installing on UNIX

UNIX versions of the following BusinessObjects Enterprise add-on components are provided for environments where BusinessObjects Enterprise is running on UNIX:

- SAP Authentication
- BW Publisher
- Data Access
- Web Content

When installing BusinessObjects XI Integration for SAP Solutions on UNIX, consider the following:

- You install the BusinessObjects Enterprise add-on components by running the `install.sh` script.

- You can expand your deployment by distributing the BusinessObjects Enterprise servers across multiple machines.

### Related Topics

- [Distributed installation](#)

## System requirements

Before installing any of the BusinessObjects XI Integration for SAP Solutions components, ensure that your environment meets the following requirements:

- Before installing SAP integration, you must install SAP RFC SDK and SAP JCO SDK, which can be downloaded from the SAP Marketplace at [service.sap.com/bosap-support](http://service.sap.com/bosap-support).
- BusinessObjects Enterprise must be installed and configured correctly on UNIX before you install the BusinessObjects XI Integration for SAP Solutions components. Complete this installation and configuration in accordance with the *SAP BusinessObjects Enterprise Installation Guide*.
- The following entry must appear in the `services` file on the BusinessObjects Enterprise machine (found in `/etc`):

```
sapmsSIDport/tcp
```

Replace `SID` with the system ID of your SAP system, and replace `port` with the port number of the message server that BusinessObjects Enterprise will log onto (for example, `sapmsQR6 3600/tcp`). This standard setting allows BusinessObjects Enterprise to log on to SAP with load balancing.

- If a BusinessObjects Enterprise component requires an SAP router to connect to an SAP system, you can configure the component using the SAP router string. For example, when configuring an SAP entitlement system to import roles and users, the SAP router string can be substituted for the application server's name. This insures that the CMS will communicate with the SAP system through the SAP router.

### Note:

The BW Publishing service installed by BusinessObjects XI Integration for SAP Solutions cannot be configured to use an SAP router.

## SAP Java Connector

BusinessObjects XI Integration for SAP Solutions web applications (including InfoView), and the BusinessObjects XI Integration for SAP Solutions Java SDK require the SAP Java Connector. The SAP Java Connector is available from <http://service.sap.com/connectors/>

Please see the SAP MarketPlace for information on licensing SAP Java Connector for use in your development environment.

After you have installed BusinessObjects Enterprise, you must unpack the archive file containing the SAP Java Connector.

Then you must do one of the following things:

- Copy the `librfccm` library and the `libsapjcorfc` library to *businessobjects\_root/enterprise120/PLATFORM\_PATH*, where *businessobjects\_root* is the full path to your `businessobjects` directory, and *PLATFORM\_PATH* is your platform. For example, *PLATFORM\_PATH* is `solaris_sparc` for an installation on Solaris.
- Use symbolic links for the location of the `librfccm` library and the `libsapjcorfc` library.
- Add the location of the `librfccm` library and the `libsapjcorfc` library to the library path.

After you have installed BusinessObjects Enterprise, you must make `sapjco.jar` available to your Java application server as a shared resource either by placing `sapjco.jar` in the application server's shared `lib` directory, or by adding `sapjco.jar` to the class. See [Distributed installation](#) or consult your application server documentation for details.

Consult the documentation included with the SAP Java Connector for more information.

## Installing the SP4 update package

To upgrade your BusinessObjects XI Integration for SAP Solutions to 3.1 SP4, you will need to download the appropriate SP4 upgrade patch from "<http://service.sap.com/patches>". Once you have the patch on the system where the integration was installed, use the following instructions to run it.

## To install the SP4 update package on UNIX

1. Launch the installation by typing the following in a command line where your installation package is located: `./install.sh <install_dir>`. The `install_dir` is the directory where you originally installed the component you are upgrading.
2. Review the content of the License agreement and select **Y** to proceed if you agree to the terms.
3. Press **Enter**.

You will be prompted for your CMS credentials.

4. Enter your CMS credentials and press **Enter**.

If you deployed web applications when you installed BusinessObjects Enterprise, you will be asked if you want the installation program to automatically redeploy web applications. If not, skip to Step 6.

### Note:

If you chose to manually deploy web applications when you installed, you will not be automatically prompted. You must manually redeploy your web applications once the installation program has finished.

5. Select **Yes** if you want the installation program to automatically redeploy web applications, select **No** if you want to manually deploy web applications later.

If you selected **Yes**, you will be prompted to enter your web application server credentials. Enter your web application server credentials, and press **Enter** to proceed.

You are prompted to confirm that the installation can begin.

6. Press **Enter**.

The progress indicator displays the status of the installation.

### Note:

A backup of all the files being modified by the update is created in the `INSTALL DIR/setup/backup` directory.

7. Press **Enter** to complete the installation.

### Note:

To review details of the installation, view the contents of the installation log file located in `<install_dir>/setup/logs`, where `<in`



`stall_dir`> is the directory where the product was installed. The file will be called UNIX BOE SP2 - BusinessObjects\_SP2.12.2.log.

## Deploying web applications using wdeploy

### Note:

- The BusinessObjects Integration for SAP Solutions installation updates wdeploy in order to deploy BusinessObjects Integration for SAP Solutions web content. To deploy BusinessObjects Integration for SAP Solutions web applications after installation, you must use the wdeploy found in the `installdir/deployment` folder.
- Before performing this procedure, ensure that you have deployed the SAP Java Connector.

### Related Topics

- [SAP Java Connector](#)

## Deploying web applications on Tomcat

This section guides you through the process of deploying InfoView on Tomcat servers in Unix environment.

### To deploy web applications on Tomcat

To deploy BusinessObjects Integration for SAP Solutions web applications after installation, you must use the wdeploy found in the `installdir/deployment` folder instead of the standalone wdeploy.

### Note:

If Tomcat was installed with BusinessObjects Enterprise, the BusinessObjects Integration for SAP Solutions installation automatically deploys to the same server.

1. Shut down Tomcat if it is running, and type `sh %CATALINA_HOME%/bin/shutdown.sh` in a property command window.

### Note:

`%CATALINA_HOME%` represents the root directory of the Tomcat installation.

2. Ensure that your `CLASSPATH` environment variable includes the `sapjco.jar` archive file.  
See [SAP Java Connector](#) for details.
3. Create a new and empty file: `%CATALINA_HOME%/conf/Catalina/localhost/sap.xml`  
This file will be used as the context descriptor file for InfoView and the CMC.
4. Add the following line to `sap.xml` in a text editor such as Notepad, and save `sap.xml`:

```
Context docBase="$tomcat/application/SAP.war" path="/SAP" debug="0" reloadable="false" crossContext="false" trusted="false" /
```
5. To manually deploy the BusinessObjects XI Integration Solutions for SAP web applications, use `wdeploy` found under `businessobjects_root/deployment`.
  - a. Move to `businessobjects_root/bobje/enterprise120/java/applications`, and use the following command to package the WAR files:  

```
businessobjects_root/bobje/jdk/bin/jar cf CmcApp.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/CmcApp .
```

```
businessobjects_root/bobje/jdk/bin/jar cf InfoViewApp.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/InfoViewApp .
```

```
businessobjects_root/bobje/jdk/bin/jar cf OpenDocument.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/OpenDocument .
```

```
businessobjects_root/bobje/jdk/bin/jar cf SAP.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/SAP .
```

```
businessobjects_root/bobje/jdk/bin/jar cf PartnerPlatformService.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/PartnerPlatformService .
```

```
businessobjects_root/bobje/jdk/bin/jar cf dswsbobje.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/dswsbobje/.
```
  - b. Open the `config.WAS_Type` file (for example, `config.tomcat55`) located under `businessobjects_root/deployment`, set the parameters appropriate for your environment, and save the file.

For more information about `config` file parameters, see the “Deploying applications after installation” chapter of the *Web Applications Deployment Guide*.

- c. Stop Tomcat
- d. Navigate to the `businessobjects_root/deployment` folder, and use the following command to undeploy BusinessObjects Enterprise web applications:

```
./wdeploy.sh tomcat55 -DAPP=CmcApp undeploy
./wdeploy.sh tomcat55 -DAPP=InfoViewApp undeploy
./wdeploy.sh tomcat55 -DAPP=OpenDocument undeploy
./wdeploy.sh tomcat55 -DAPP=dswsbobje undeploy
```

- e. Restart Tomcat and navigate to the `businessobjects_root/deployment` folder, and use the following command to deploy BusinessObjects Enterprise web applications :

```
./wdeploy.sh tomcat55 -DAPP=CmcApp deploy
./wdeploy.sh tomcat55 -DAPP=InfoViewApp deploy
./wdeploy.sh tomcat55 -DAPP=OpenDocument deploy
./wdeploy.sh tomcat55 -DAPP=dswsbobje deploy
```

- f. Use the following command to deploy SAP web applications:

```
./wdeploy.sh tomcat55 -DAPP=SAP deploy
./wdeploy.sh tomcat55 -DAPP=PartnerPlatformService
deploy
```

6. Create a new and empty file: `%CATALINA_HOME%/conf/Catalina/local host/PartnerPlatformService.xml`
7. Add the following line to `PartnerPlatformService.xml` in a text editor such as Notepad and save `PartnerPlatformService.xml`:  
Context docBase="\$tomcat/application/PartnerPlatformService.war" path="/PartnerPlatformService" debug="0" reloadable="false" crossContext="false" trusted="false" /
8. Restart Tomcat by typing `%CATALINA_HOME%/bin/startup` at the command prompt.
9. To test that the SAP authentication module is now available, open a web browser and type `http://servername:8080/CmcApp` in its address bar to launch the Central Management Console (CMC).

10. Log on to the CMC using your Administrator account and password.  
The password is set when you install BusinessObjects Enterprise.
11. Click **Authentication**, and then double-click **SAP**.  
The SAP authentication page should appear. If it does not, ensure that the `librfccm` and `libsapjcorfc` libraries are in your `businessobject_root/enterprise120/PLATFORM` directory, and restart your application server.

## Deploying web applications on BEA WebLogic

This section guides you through the process of deploying InfoView on BEA WebLogic in a Unix environment.

### To deploy web applications on BEA WebLogic

To deploy BusinessObjects Integration for SAP Solutions web applications after installation, you must use the `wdeploy` found in the `installdir/deployment` folder instead of the standalone `wdeploy`.

1. Ensure that your BEA WebLogic server is not running.
2. Ensure that your `CLASSPATH` environment variable includes the `sapjco.jar` archive file.

See [SAP Java Connector](#) for details.

3. Start your BEA WebLogic server.
4. Open a web browser, and type `http://servername:7001/console` in its address bar to open the BEA WebLogic Administrative Console.

Substitute the name of the machine where you installed BEA WebLogic for `servername`.

#### Note:

By default, BEA WebLogic uses port 7001. If you configured your application server to use a different port number, substitute that port number in the URL.

5. To manually deploy the BusinessObjects XI Integration Solutions for SAP web applications, use `wdeploy` found under `INSTALLDIR/deployment`.
  - a. Move to `businessobjects_root/bobje/enterprise120/java/applications`, and use the following command to package the WAR files:

```
businessobjects_root/bobje/jdk/bin/jar cf CmcApp.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/CmcApp .
```

```
businessobjects_root/bobje/jdk/bin/jar cf InfoViewApp.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/InfoViewApp .
```

```
businessobjects_root/bobje/jdk/bin/jar cf OpenDocument.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/OpenDocument .
```

```
businessobjects_root/bobje/jdk/bin/jar cf SAP.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/SAP .
```

```
businessobjects_root/bobje/jdk/bin/jar cf PartnerPlatformService.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/PartnerPlatformService .
```

```
businessobjects_root/bobje/jdk/bin/jar cf dswsbobje.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/dswsbobje .
```

- b. Open the `config.WAS_Type` file (for example, `config.weblogic9`) located under `INSTALLDIR/deployment`, set the parameters appropriate for your environment, and save the file.

For more information about `config` file parameters, see the “Deploying applications after installation” chapter of the *Web Applications Deployment Guide*.

- c. Navigate to the `businessobjects_root/deployment` folder and use the following command to redeploy related BusinessObjects Enterprise web applications:

```
./wdeploy.sh weblogic9 -DAPP=CmcApp -Das_admin_password=<your password here> undeploy
./wdeploy.sh weblogic9 -DAPP=CmcApp -Das_admin_password=<your password here> deploy
./wdeploy.sh weblogic9 -DAPP=InfoViewApp -Das_admin_password=<your password here> undeploy
./wdeploy.sh weblogic9 -DAPP=InfoViewApp -Das_admin_password=<your password here> deploy
./wdeploy.sh weblogic9 -DAPP=OpenDocument -Das_admin_password=<your password here> undeploy
./wdeploy.sh weblogic9 -DAPP=OpenDocument -Das_admin_password=<your password here> deploy
./wdeploy.sh weblogic9 -DAPP=dswsbobje -Das_admin_password=<your password here> undeploy
```

```
./wdeploy.sh weblogic9 -DAPP=dswsbobje -Das_admin_password=<your password here> deploy
```

- d. Use the following command to deploy SAP web applications:

```
./wdeploy.sh weblogic9 -DAPP=SAP -Das_admin_password=<your password here> deploy  
./wdeploy.sh weblogic9 -DAPP=PartnerPlatformService -Das_admin_password=<your password here> deploy
```

6. To test that BusinessObjects Enterprise deploys correctly, type `http://servername:7001/InfoViewApp/` in the address bar of a web browser.
7. To test that the SAP authentication module is now available, open a web browser and type `http://servername:7001/CmcApp` in its address bar to launch the Central Management Console (CMC).
8. Log on to the CMC using your Administrator account and password. The password is set when you first install BusinessObjects Enterprise.
9. Click **Authentication**, and then double-click **SAP**.

The SAP authentication page should appear. If it does not, ensure that the `librfccm` and `libsapjcorfc` libraries are in your `businessobjects_root/enterprise120/PLATFORM` directory, and restart your Java application server.

For more information about `wdeploy`, see the BusinessObjects Enterprise documentation.

## Deploying web applications on IBM WebSphere

This section guides you through the process of deploying InfoView on IBM WebSphere in a Unix environment.

### To deploy web applications on IBM WebSphere

To deploy BusinessObjects Integration for SAP Solutions web applications after installation, you must use the `wdeploy` found in the `installdir/deployment` folder instead of the standalone `wdeploy`.

1. Ensure that your IBM WebSphere server is not running.

2. Ensure that your `CLASSPATH` environment variable includes the `sapjco.jar` archive file.  
See [SAP Java Connector](#) for details.
3. Start your IBM WebSphere Server, and launch the Administrative Console (for example, `http://servername:9060/ibm/console`).  
For `servername`, substitute the name of the machine where you installed IBM WebSphere. If you chose to use a port number other than the default value for the administrative console, substitute that value for 9060.
4. To manually deploy the BusinessObjects XI Integration for SAP Solutions web applications, use `wdeploy` found under `INSTALLDIR/deployment`.
  - a. Move to `businessobjects_root/bobje/enterprise120/java/applications`, and use the following command to package the WAR files:
 

```
businessobjects_root/bobje/jdk/bin/jar cf CmcApp.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/CmcApp .
```

```
businessobjects_root/bobje/jdk/bin/jar cf InfoViewApp.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/InfoViewApp .
```

```
businessobjects_root/bobje/jdk/bin/jar cf OpenDocument.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/OpenDocument .
```

```
businessobjects_root/bobje/jdk/bin/jar cf SAP.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/SAP .
```

```
businessobjects_root/bobje/jdk/bin/jar cf PartnerPlatformService.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/PartnerPlatformService .
```

```
businessobjects_root/bobje/jdk/bin/jar cf dswebobje.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/dswebobje .
```
  - b. Open the `config.WAS_Type` file (for example, `config.webSphere6`) located in `INSTALLDIR/deployment`, set the parameters appropriate to your environment, and save the file.  
For more information about `config` file parameters, see the “Deploying applications after installation” chapter of the *Web Applications Deployment Guide*.

- c. Navigate to the *businessobjects\_root*/deployment folder, and use the following command to redeploy related BusinessObjects Enterprise web applications:

```
./wdeploy.sh weblogic9 -DAPP=CmcApp -Das_admin_password=<your password here> undeploy
./wdeploy.sh weblogic9 -DAPP=CmcApp -Das_admin_password=<your password here> deploy
./wdeploy.sh weblogic9 -DAPP=InfoViewApp -Das_admin_password=<your password here> undeploy
./wdeploy.sh weblogic9 -DAPP=InfoViewApp -Das_admin_password=<your password here> deploy
./wdeploy.sh weblogic9 -DAPP=OpenDocument -Das_admin_password=<your password here> undeploy
./wdeploy.sh weblogic9 -DAPP=OpenDocument -Das_admin_password=<your password here> deploy
./wdeploy.sh weblogic9 -DAPP=dswsbobje -Das_admin_password=<your password here> undeploy
./wdeploy.sh weblogic9 -DAPP=dswsbobje -Das_admin_password=<your password here> deploy
```

- d. Use the following command to deploy SAP web applications:

```
./wdeploy.sh websphere6 -DAPP=SAP -Das_admin_password=<your password here> deploy
./wdeploy.sh websphere6 -DAPP=PartnerPlatformService -Das_admin_password=<your password here> deploy
```

5. To test that InfoView deploys correctly, type `http://servername:9080/InfoViewApp` in the address bar of a web browser.
6. To test that the SAP authentication module is now available, open a web browser and type `http://servername:9060/CmcApp` in its address bar to launch the Central Management Console (CMC).
7. Log on to the CMC using your Administrator account and password. The password is set when you first install BusinessObjects Enterprise.
8. Click **Authentication**, and then double-click the **SAP** link. The SAP authentication page should appear. If it does not, ensure that the `librfccm` and `libsapjcorfc` libraries are in your *businessobjects\_root*/enterprise120/PLATFORM directory, and restart your Java application server.



## Deploying web applications on SAP Web Application Server

This section guides you through the process of deploying InfoView on SAP WAS in a UNIX environment.

### To deploy web applications on SAP Web Application Server

1. Ensure that your SAP WAS server is not running.
2. Ensure that your `CLASSPATH` environment variable includes the `sapjco.jar` archive file.  
See [SAP Java Connector](#) for details.
3. Start your SAP Web Application Server.
4. To manually deploy the BusinessObjects XI Integration for SAP Solutions web applications, use `wdeploy` found under `INSTALLDIR/deployment`.

- a. Move to `businessobjects_root/bobje/enterprise120/java/applications`, and use the following command to package the WAR files:

```
businessobjects_root/bobje/jdk/bin/jar cf CmcApp.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/CmcApp .
```

```
businessobjects_root/bobje/jdk/bin/jar cf InfoViewApp.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/InfoViewApp .
```

```
businessobjects_root/bobje/jdk/bin/jar cf OpenDocument.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/OpenDocument .
```

```
businessobjects_root/bobje/jdk/bin/jar cf SAP.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/SAP .
```

```
businessobjects_root/bobje/jdk/bin/jar cf PartnerPlatformService.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/PartnerPlatformService .
```

```
businessobjects_root/bobje/jdk/bin/jar cf dswsbobje.war -C businessobjects_root/bobje/enterprise120/warfiles/WebApps/dswsbobje .
```

- b. Open the `config.WAS_Type` file (for example, `config.nw2004`) located in `INSTALLDIR/deployment`, set the parameters appropriate to your environment, and save the file.

For more information about `config` file parameters, see the “Deploying applications after installation” chapter of the *Web Applications Deployment Guide*.

- c. Navigate to the `businessobjects_root/deployment` folder, and use the following command to redeploy related BusinessObjects Enterprise web applications:

```
./wdeploy.sh nw2004 -DAPP=CmcApp -Das_admin_pass  
word=<your password here> undeploy  
./wdeploy.sh nw2004 -DAPP=CmcApp -Das_admin_pass  
word=<your password here> deploy  
./wdeploy.sh nw2004 -DAPP=InfoViewApp -Das_ad  
min_password=<your password here> undeploy  
wdeploy.sh nw2004 -DAPP=InfoViewApp -Das_admin_pass  
word=<your password here> deploy  
wdeploy.sh nw2004 -DAPP=OpenDocument -Das_admin_pass  
word=<your password here> undeploy  
wdeploy.sh nw2004 -DAPP=OpenDocument -Das_admin_pass  
word=<your password here> deploy  
wdeploy.sh nw2004 -DAPP=dswsbobje -Das_admin_pass  
word=<your password here> undeploy  
wdeploy.sh nw2004 -DAPP=dswsbobje -Das_admin_pass  
word=<your password here> deploy
```

- d. Use the following command to deploy SAP web applications:

```
wdeploy.sh nw2004 -DAPP=SAP -Das_admin_pass  
word=<your password here> deploy  
wdeploy.sh nw2004 -DAPP=PartnerPlatformService -  
Das_admin_password=<your password here> deploy
```

5. To test that InfoView has deployed correctly, type `http://server name:port/InfoViewApp` in the address bar of a web browser.
6. To test that the SAP authentication module is now available, open a web browser and type `http://servername:port/CmcApp` in its address bar to launch the Central Management Console (CMC).
7. Log on to the CMC using your Administrator account and password. (By default the password is blank when you first install BusinessObjects Enterprise.)
8. Click **Authentication**, and then double-click the **SAP** link.

The SAP authentication page should appear. If it does not, ensure that the `librfccm` and `libsapjcorfc` libraries are in your `businessob`

`jects_root/enterprise120/PLATFORM` directory, and restart your Java application server.

## Installing on Windows

This section outlines how to install the core Business Objects products and then how to install BusinessObjects XI Integration for SAP Solutions.

### System requirements

Before installing SAP integration, you must install SAP GUI, which can be downloaded from the SAP Marketplace at [service.sap.com/bosap-support](http://service.sap.com/bosap-support).

All BusinessObjects XI Integration for SAP Solutions components are supported for use with the version XI releases of BusinessObjects Enterprise, Crystal Reports, and Voyager on Windows operating systems. For a stand-alone installation, ensure that all requirements are met on a single machine. For a distributed installation, ensure that each machine meets the requirements that correspond to the components you are installing.

#### Note:

For a detailed list of tested environments for BusinessObjects XI Integration for SAP Solutions, consult the platform support information available online at [http://support.businessobjects.com/documentation/supported\\_platforms/default.asp](http://support.businessobjects.com/documentation/supported_platforms/default.asp).

### Server requirements for BusinessObjects Enterprise

- Download the RFC SDK for your platform from the SAP Service Marketplace, or using the Installation option in your SAP program.
- The files `saplogon.ini` and `librfc32.dll` need to be installed on machines with Data Access components. The file `saplogon.ini` is required for Crystal Reports machines; the file `librfc32.dll` is required for client and server machines. Alternatively, you can add the full path to the `saplogon.ini` file to the `SAPLOGON_INI_FILE` environment variable.

- Supported web server software must be installed and configured correctly before you install BusinessObjects Enterprise. Consult the platform support information available online at [http://support.businessobjects.com/documentation/supported\\_platforms/default.asp](http://support.businessobjects.com/documentation/supported_platforms/default.asp) for a complete list.
- If you are using a load balanced logon, the following entry must appear in the Services file (found in %windir%\system32\drivers\etc\) on any BusinessObjects Enterprise machines running a CMS, Crystal Reports Processing Server, and/or Report Job Server:

```
sapmsSIDportnumber/tcp
```

Replace *SID* with the system ID of your SAP system, and replace *portnumber* with the port number of the message server that BusinessObjects Enterprise will log on to (for example, `sapmsQR63600/tcp`). Ensure also that a blank line follows the entry. This standard setting allows BusinessObjects Enterprise to log on to SAP with load balancing.

### Client requirements for Crystal Reports

If you have a BW environment, install the SAPGUI along with the BW AddOn option from the SAP Presentation CD before you install Crystal Reports and BusinessObjects XI Integration for SAP Solutions. Business Explorer version 3.x components are integrated into Crystal Reports.

For a detailed list of tested environments for Crystal Reports, consult the platform support information available online at <http://help.sap.com/businessobjects>.

### SAP Java Connector

To install InfoView automatically, you must install and configure SAP Java Connector components.

To do this, copy `librfc32.dll` and `librfc32u.dll`, to the appropriate folder.

- On 32-bit Windows: %windir%\system32
- On 64-bit Windows: %windir%\sysWOW64

Copy `sapjcorfc.dll` to `<BusinessObjects install directory>\win32_x86`.

Then copy `sapjco.jar` to the application server's shared library folder. For example, on a 64-bit Windows system with Tomcat 5.5, copy `sapjco.jar` to `C:\Program Files (x86)\Business Objects\Tomcat55\shared\lib`.

Consult the documentation included with the SAP Java Connector for more information.

#### Related Topics

- [Deploying the web applications using wdeploy](#)

## Installing the SP4 update package on Windows

To upgrade your BusinessObjects XI Integration for SAP Solutions to 3.1 SP4, you will need to download the appropriate SP4 upgrade patch from "<http://service.sap.com/patches>". Once you have the patch on the machine where the integration was installed, use the following instructions to run it.

### To install server update packages on Windows

BusinessObjects XI 3.1 Integration for SAP Solutions SP4 supports the unicode version of RFCLib. Before installing, ensure that your environment has the SAP Unicode RFC library. This can be installed from your SAP install program.

1. To launch the installation program run `setup.exe`.
2. On the "Welcome" dialog box, click **Next**.
3. On the "License Agreement" dialog box, review the content of the End User License Agreement and click **I accept the License Agreement**, then click **Next** to proceed if you agree to the terms.
4. Provide your CMS name and login credentials, and click **Next**.

#### Note:

If you are installing the upgrade on clustered backend servers, the name and credentials for the first CMS you upgraded in the cluster must also be used when upgrading the other servers in that cluster.

If you installed Web Applications during your BusinessObjects Enterprise installation, the "Automatically Re-Deploy Web Applications?" screen appears. If not, skip to Step 7.

**Note:**

If you chose to manually deploy web applications when you installed, you will not be automatically prompted. You must manually redeploy your web applications once the installer has finished.

5. Click **Yes** if you want the installer to redeploy your web applications for you as part of the upgrade, or click **No** if you want to manually redeploy your web applications later.
6. Click **Next**.  
If you selected **No**, skip ahead to Step 8. If you selected **Yes** you will be prompted for your Web Application Server credentials.
7. Enter your Web Application Server credentials and click **Next**.
8. On the "Start Installation" dialog box, click **Next** to begin the installation. The "Installation Progress" dialog box appears.
9. After the installation is complete, check to see if any BusinessObjects Enterprise servers are still stopped. If any servers have not restarted, start them manually through the Central Management Console (CMC), or restart the Server Intelligence Agent (SIA) from the Central Configuration Manager (CCM).

**Note:**

To review details of the installation, you can view the contents of the installation log file located in the default installation path: C:\Program Files\Business Objects\BusinessObjects Enterprise 12.0\Logging. The file will be called Windows BOE SP2 - BOE\_SP2\_Install\_0.log or CRSE 2008 SP2 - RAS\_0.log. If the installation directory was modified at the time of the original installation, the log files are written to that directory.

## Deploying the web applications using wdeploy

To deploy InfoView, you must create virtual path mappings on your Java web application server.

**Note:**

- The wdeploy tool cannot be used to deploy .NET BusinessObjects Enterprise web applications . Please use the BusinessObjects XI Integration for SAP Solutions installation to deploy all .NET applications.
- If you are using any of the following Web Servers, please refer to either the *Web Application Deployment Guide for UNIX* or the *Web Application Deployment Guide for Windows* for instructions on deploying web applications.
  - Tomcat 6
  - Weblogic 10.3
  - Webshpere7
  - SAP Web Application Server 7.10

## Deploying web applications on Tomcat

This section guides you through the process of deploying InfoView on Tomcat servers in a Windows environment.

### To deploy web applications on Tomcat

To deploy BusinessObjects Integration for SAP Solutions web applications after installation, you must use the `wdeploy` found in the `install\dir\deployment` folder instead of the standalone `wdeploy`.

1. Ensure that you have deployed the SAP Java Connector as described in [SAP Java Connector](#).
2. Ensure that your `CLASSPATH` environment variable includes the `sapjco.jar` archive file. (See [SAP Java Connector](#) for details.)
3. Manually deploy the BusinessObjects XI Integration Solutions for SAP web applications using `wdeploy` found under `install\dir\deployment`.
  - a. Move to `businessobjects_root\BusinessObjects Enterprise 12.0\java\applications\`, and use the following command to package the WAR files:

```
"businessobjects_root\javadoc\bin\jar.exe" cf CmcApp.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\CmcApp" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf SAP.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\SAP" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf InfoViewApp.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\InfoViewApp" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf OpenDocument.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\OpenDocument" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf dswsbobje.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\dswsbobje" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf  
PartnerPlatformService.war -C "businessobjects_root\ BusinessObjects  
Enterprise 12.0\warfiles\WebApps\PartnerPlatformService" .
```

- b. Open `config.WAS_Type` file (for example, `config.tomcat55`) located under `businessobjects_root\deployment`, set the parameters appropriate for your environment, and save the file.  
For more information about `config` file parameters, see the “Deploying applications after installation” chapter of the *Web Applications Deployment Guide* .
- c. Stop Tomcat.
- d. Move to `install_dir\deployment` folder, and use the following command to undeploy BusinessObjects Enterprise web applications:

```
wdeploy.bat tomcat55 -DAPP=CmcApp undeploy  
wdeploy.bat tomcat55 -DAPP=InfoViewApp undeploy  
wdeploy.bat tomcat55 -DAPP=OpenDocument undeploy  
wdeploy.bat tomcat55 -DAPP=dswsbobje undeploy
```

- e. Restart Tomcat and use the following command to deploy the following applications:

```
wdeploy.bat tomcat55 -DAPP=CmcApp deploy  
wdeploy.bat tomcat55 -DAPP=InfoViewApp deploy  
wdeploy.bat tomcat55 -DAPP=InfoViewApp deploy  
wdeploy.bat tomcat55 -DAPP=dswsbobje deploy
```



- f. Use the following command to deploy the following SAP web applications:

```
wdeploy.bat tomcat55 -DAPP=SAP deploy
wdeploy.bat tomcat55 -DAPP=PartnerPlatformService
deploy
```

4. Create a new and empty file: `%CATALINA_HOME%\conf\Catalina\localhost\PartnerPlatformService.xml`
5. Add the following line to `PartnerPlatformService.xml` in a text editor such as Notepad:
 

```
Context docBase="C:/PROGRA~1/BUSINE~1/deploy
ment/workdir/tomcat55/application/PartnerPlatformSer
vice.war" path="/PartnerPlatformService" debug="0"
reloadable="false" crossContext="false" trusted="false"
```
6. Restart Tomcat.
  - a. Go to **Start > Tomcat > Tomcat Configuration**.
  - b. Click **Start**.
7. To test that the SAP authentication module is now available, open a web browser and type `http://servername:8080/CmcApp` in its address bar to launch the Central Management Console (CMC).
8. Log on to the CMC using your Administrator account and password.  
The password is set when you install BusinessObjects Enterprise.
9. Select **Authentication**, and then double-click **SAP**.  
The SAP authentication page should appear. If it does not, ensure that the `librfccm32.dll` is in your `C:\WINDOWS\NNT\system32` directory, and the `sapjcorfc.dll` is in your `businessobjects_root/win32_x86`

**Note:**

For 64-bit installations, ensure the `librfcc32.dll` libraries are in your directory `C:\Windows\sysWow64` directory, and the `sapjcorfc.dll` is in your `businessobjects_root/win32_x86` directory.

## Deploying web applications on BEA WebLogic

This section guides you through the process of deploying InfoView on BEA WebLogic in a Windows environment.

### To deploy web applications on BEA WebLogic

To deploy BusinessObjects Integration for SAP Solutions web applications after installation, you must use the `wdeploy` found in the `installdir\deployment` folder instead of the standalone `wdeploy`.

1. Ensure that you have deployed the SAP Java Connector as described in [SAP Java Connector](#).
2. Ensure that your `CLASSPATH` environment variable includes the `sapjco.jar` archive file.  
See [SAP Java Connector](#) for details.
3. Start the WebLogic Admin server. To start the admin server, open a console window, navigate to the `WebLogic` `installdir\user_projects\domains\mydomain` directory, then execute `startWebLogic.cmd`.

#### Tip:

To start the Admin server a different way, you can go to **Start > Programs > Bea WebLogic Platform > User Projects > My Domain > Start Server**.

4. Manually deploy the BusinessObjects XI Integration Solutions for SAP web applications, using `wdeploy` found under `installdir\deployment`.
  - a. Move to `businessobjects_root\BusinessObjects12.0\java\applications\`, and use the following command to package the WAR files:  

```
"businessobjects_root\javadoc\bin\jar.exe" cf CmcApp.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\CmcApp" .  
  
"businessobjects_root\javadoc\bin\jar.exe" cf SAP.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\SAP" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf InfoViewApp.war -C
"businessobjects_root\BusinessObjects Enterprise
12.0\warfiles\WebApps\InfoViewApp" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf OpenDocument.war -C
"businessobjects_root\BusinessObjects Enterprise
12.0\warfiles\WebApps\OpenDocument" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf dswsbobje.war -C
"businessobjects_root\BusinessObjects Enterprise
12.0\warfiles\WebApps\dswsbobje" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf
PartnerPlatformService.war -C "businessobjects_root\ BusinessObjects
Enterprise 12.0\warfiles\WebApps\PartnerPlatformService" .
```

- b. Open `config.WAS_Type` file (for example, `config.weblogic9`) located under `installdir\deployment` , set the parameters appropriate for your environment, and save the file.

For more information about `config` file parameters, see the “Deploying applications after installation” chapter of the *Web Applications Deployment Guide*.

- c. Move to `installdir\deployment` folder, and use the following command to redeploy related BusinessObjects Enterprise web applications:

```
wdeploy.bat weblogic9 -DAPP=CmcApp -Das_admin_pass
word=<your password here> undeploy
wdeploy.bat weblogic9 -DAPP=CmcApp -Das_admin_pass
word=<your password here> deploy
wdeploy.bat weblogic9 -DAPP=InfoViewApp -Das_ad
min_password=<your password here> undeploy
wdeploy.bat weblogic9 -DAPP=InfoViewApp -Das_ad
min_password=<your password here> deploy
wdeploy.bat weblogic9 -DAPP=OpenDocument -Das_ad
min_password=<your password here> undeploy
wdeploy.bat weblogic9 -DAPP=OpenDocument -Das_ad
min_password=<your password here> deploy
wdeploy.bat weblogic9 -DAPP=dswsbobje -Das_ad
min_password=<your password here> undeploy
wdeploy.bat weblogic9 -DAPP=dswsbobje -Das_ad
min_password=<your password here> deploy
```

- d. Use the following command to deploy SAP web applications:

```
wdeploy.bat weblogic9 -DAPP=SAP -Das_admin_password=<your password here> deploy  
wdeploy.bat weblogic9 -DAPP=PartnerPlatformService -Das_admin_password=<your password here> deploy
```

5. To test that BusinessObjects Enterprise deploys correctly, open a web browser and type `http://servername:7001/InfoViewApp` in its address bar.
6. To test that the SAP authentication module is now available, open a web browser and type `http://servername:7001/CmcApp` in its address bar to launch the Central Management Console (CMC).
7. Log on to the CMC using your Administrator account and password. The password is set when you first install BusinessObjects Enterprise.
8. Select **Authentication** and then double-click **SAP**. The SAP authentication page should appear. If it does not, ensure that the `librfccm32.dll` is in your `C:\WINDOWS\NNT\system32` directory, and the `sapjcorfc.dll` is in your `businessobjects_root/win32_x86`

**Note:**

For 64-bit installations, ensure the `librfc32.dll` libraries are in your directory `C:\Windows\sysWow64` directory, and the `sapjcorfc.dll` is in your `businessobjects_root/win32_x86` directory.

## Deploying web applications on IBM WebSphere

This section guides you through the process of deploying InfoView on WebSphere in Windows environment.

### To deploy web applications on IBM WebSphere

To deploy BusinessObjects Integration for SAP Solutions web applications after installation, you must use the `wdeploy` found in the `installdir\deployment` folder instead of the standalone `wdeploy`.

1. Ensure that you have deployed the SAP Java Connector as described in [SAP Java Connector](#).

2. Ensure that your `CLASSPATH` environment variable includes the `sapjco.jar` archive file.

See [SAP Java Connector](#) for details.

3. Manually deploy the BusinessObjects XI Integration Solutions for SAP web applications using `wdeploy` found under `INSTALLDIR\deployment`.

- a. Move to `businessobjects_root\BusinessObjects12.0\java\applications\`, and use the following command to package the WAR files:

```
"businessobjects_root\javadoc\bin\jar.exe" cf CmcApp.war -C
"businessobjects_root\BusinessObjects Enterprise
12.0\warfiles\WebApps\CmcApp" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf SAP.war -C
"businessobjects_root\BusinessObjects Enterprise
12.0\warfiles\WebApps\SAP" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf InfoViewApp.war -C
"businessobjects_root\BusinessObjects Enterprise
12.0\warfiles\WebApps\InfoViewApp" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf OpenDocument.war -C
"businessobjects_root\BusinessObjects Enterprise
12.0\warfiles\WebApps\OpenDocument" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf dswebobje.war -C
"businessobjects_root\BusinessObjects Enterprise
12.0\warfiles\WebApps\dswebobje" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf
PartnerPlatformService.war -C "businessobjects_root\ BusinessObjects
Enterprise 12.0\warfiles\WebApps\PartnerPlatformService" .
```

- b. Open the `config.WAS_Type` file (for example, `config.webSphere6`) located under `install_dir\deployment`, set the parameters appropriate for your environment, and save the file.  
For more information about `config` file parameters, see the “Deploying applications after installation” chapter of the *Web Applications Deployment Guide*.

- c. Navigate to the `installdir\deployment` folder, and use the following command to redeploy related BusinessObjects Enterprise web applications.

```
wdeploy.bat webSphere6 -DAPP=CmcApp -Das_admin_password=<your password here> undeploy
wdeploy.bat webSphere6 -DAPP=CmcApp -Das_admin_password=<your password here> deploy
wdeploy.bat webSphere6 -DAPP=InfoViewApp -Das_admin_password=<your password here> undeploy
wdeploy.bat webSphere6 -DAPP=InfoViewApp -Das_admin_password=<your password here> deploy
wdeploy.bat webSphere6 -DAPP=OpenDocument -Das_admin_password=<your password here> undeploy
wdeploy.bat webSphere6 -DAPP=OpenDocument -Das_admin_password=<your password here> deploy
wdeploy.bat webSphere6 -DAPP=dswsbobje -Das_admin_password=<your password here> undeploy
wdeploy.bat webSphere6 -DAPP=dswsbobje -Das_admin_password=<your password here> deploy
```

- d. Use the following command to deploy SAP web applications.

```
wdeploy.bat webSphere6 -DAPP=SAP -Das_admin_password=<your password here> deploy
wdeploy.bat webSphere6 -DAPP=PartnerPlatformService -Das_admin_password=<your password here> deploy
```

4. To test that the SAP authentication module is now available, open a web browser and type `http://servername:9080/CmcApp` in its address bar to launch the Central Management Console (CMC).
5. Log on to the CMC using your Administrator account and password. The password is set when you first install BusinessObjects Enterprise.
6. Click **Authentication**, and then double-click **SAP**. The SAP authentication page should appear. If it does not, ensure that the `librfccm32.dll` is in your `C:\WINDOWS\NNT\system32` directory, and the `sapjcorfc.dll` is in your `businessobjects_root/win32_x86`

**Note:**

For 64-bit installations, ensure the `librfccm32.dll` libraries are in your directory `C:\Windows\sysWow64` directory, and the `sapjcorfc.dll` is in your `businessobjects_root/win32_x86` directory.

## Deploying web applications on SAP Web Application Server

This section guides you through the process of deploying InfoView on SAP Web Application Server in a Windows environment.

### To deploy web applications on SAP Web Application Server

To deploy BusinessObjects Integration for SAP Solutions web applications after installation, you must use the `wdeploy` found in the `installdir\deployment` folder instead of the standalone `wdeploy`.

1. Ensure that you have deployed the SAP Java Connector as described in [SAP Java Connector](#).
2. Ensure that your `CLASSPATH` environment variable includes the `sapjco.jar` archive file.  
See [SAP Java Connector](#) for details.
3. Manually deploy the BusinessObjects XI Integration Solutions for SAP web applications using `wdeploy` found under `INSTALLDIR\deployment`.

- a. Move to `businessobjects_root\BusinessObjects12.0\java\applications\`, and use the following command to package the WAR files:

```
"businessobjects_root\javadoc\bin\jar.exe" cf CmcApp.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\CmcApp" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf SAP.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\SAP" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf InfoViewApp.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\InfoViewApp" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf OpenDocument.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\OpenDocument" .
```

```
"businessobjects_root\javadoc\bin\jar.exe" cf dswsbobje.war -C  
"businessobjects_root\BusinessObjects Enterprise  
12.0\warfiles\WebApps\dswsbobje" .
```

```
"businessobjects_root\javasdk\bin\jar.exe" cf  
PartnerPlatformService.war -C "businessobjects_root\ BusinessObjects  
Enterprise 12.0\warfiles\WebApps\PartnerPlatformService" .
```

- b. Open the `config.WAS_Type` file (for example, `config.nw2004`) located under `installdir\deployment`, set the parameters appropriate for your environment, and save the file.

For more information about `config` file parameters, see the “Deploying applications after installation” chapter of the *Web Applications Deployment Guide*.

- c. Navigate to the `installdir\deployment` folder, and use the following command to redeploy related BusinessObjects Enterprise web applications.

```
wdeploy.bat nw2004 -DAPP=CmcApp -Das_admin_pass  
word=<your password here> undeploy  
wdeploy.bat nw2004 -DAPP=CmcApp -Das_admin_pass  
word=<your password here> deploy  
wdeploy.bat nw2004 -DAPP=InfoViewApp -Das_admin_pass  
word=<your password here> undeploy  
wdeploy.bat nw2004 -DAPP=InfoViewApp -Das_admin_pass  
word=<your password here> deploy  
wdeploy.bat nw2004 -DAPP=OpenDocument -Das_ad  
min_password=<your password here> undeploy  
wdeploy.bat nw2004 -DAPP=OpenDocument -Das_ad  
min_password=<your password here> deploy  
wdeploy.bat nw2004 -DAPP=dswsbobje -Das_admin_pass  
word=<your password here> undeploy  
wdeploy.bat nw2004 -DAPP=dswsbobje -Das_admin_pass  
word=<your password here> deploy
```

- d. Use the following command to deploy SAP web applications.

```
wdeploy.bat nw2004 -DAPP=SAP -Das_admin_pass  
word=<your password here> deploy  
wdeploy.bat nw2004 -DAPP=PartnerPlatformService -  
Das_admin_password=<your password here> deploy
```

- 4. To test that the SAP authentication module is now available, open a web browser and type `http://servername:9080/CmcApp` in its address bar to launch the Central Management Console (CMC).
- 5. Log on to the CMC using your Administrator account and password.  
The password is set when you first install BusinessObjects Enterprise.



**6. Click **Authentication**, and then double-click **SAP**.**

The SAP authentication page should appear. If it does not, ensure that the `librfccm32.dll` is in your `C:\WINDOWS\NNT\system32` directory, and the `sapjcorfc.dll` is in your *businessobjects\_root/win32\_x86*

**Note:**

For 64-bit installations, ensure the `librfc32.dll` libraries are in your directory `C:\Windows\sysWow64` directory, and the `sapjcorfc.dll` is in your *businessobjects\_root/win32\_x86* directory.

## Distributed installation

The BusinessObjects Enterprise architecture is scalable in that it allows for a multitude of server configurations, ranging from stand-alone, single-machine environments, to large-scale deployments supporting global organizations. The flexibility offered by the product's architecture allows you to set up a system that suits your current reporting requirements, without limiting the possibilities for future growth and expansion.

**Note:**

This section provides details that are specific to BusinessObjects XI Integration for SAP Solutions. For general information about distributing the BusinessObjects Enterprise components, see the “Scaling Your System” section of the *SAP BusinessObjects Enterprise Administrator's Guide*.

## Installing components on BusinessObjects Enterprise machines

If you have a distributed installation of BusinessObjects Enterprise, install the listed BusinessObjects XI Integration for SAP Solutions components on the appropriate machines.

If you select a default server installation of BusinessObjects XI Integration for SAP Solutions, the setup program detects which elements of BusinessObjects Enterprise are present, and installs the appropriate BusinessObjects XI Integration for SAP Solutions components.

Components	BusinessObjects Enterprise machines
Data Access	<ul style="list-style-type: none"> <li>• Crystal Reports Processing Server</li> <li>• Report Job Server</li> <li>• Report Application Server (RAS)</li> </ul>
BW Publisher (installed as a service on one or more of these machines, or with a local SAP Gateway)	<ul style="list-style-type: none"> <li>• Crystal Reports Processing Server</li> <li>• Report Job Server</li> <li>• RAS</li> <li>• BusinessObjects Enterprise SDK</li> </ul>
Security	<ul style="list-style-type: none"> <li>• Central Management Server</li> <li>• All machines that have the BusinessObjects Enterprise SDK installed.</li> </ul>
Web Content	<ul style="list-style-type: none"> <li>• BusinessObjects Enterprise Java SDK</li> </ul>

## Separating BusinessObjects Enterprise from your web server

The *SAP BusinessObjects Enterprise Installation Guide* available online explains how to connect BusinessObjects Enterprise to a web server or Java application server that is running on a different machine.

If you set up your system in this manner, you will need to install the Web Content feature from the BusinessObjects XI Integration for SAP Solutions installation disc onto the server that is connected to BusinessObjects Enterprise. This feature includes the files that make up the BusinessObjects XI Integration for SAP Solutions web application.

## Distributing the BW Publisher installation

This section explains the distribution of BW Publisher service and how to separate the BW Publisher from other BusinessObjects Enterprise components.

### BW Publisher Service

You can load-balance publishing from BW by installing BW Publisher services on two separate machines in the same BusinessObjects Enterprise system.

When you install the BW Publisher on the BusinessObjects Enterprise machines, configure each one to use the same Program ID and SAP Gateway Host and Gateway Service. After you create an RFC destination that uses this Program ID, BW load-balances publishing between the BusinessObjects Enterprise machines. Moreover, if one BW Publisher becomes unavailable, BW continues to use the remaining BW Publisher.

You can add an additional level of system redundancy to any configuration that includes multiple BW application servers. Configure each BW application server to run an SAP Gateway. For each one, install a separate BW Publisher service on a BusinessObjects Enterprise machine. Configure each BW Publisher service to use the Gateway Host and Gateway service of a separate BW application server. In this configuration, publishing from BW can continue if either a BW Publisher or an application server fails.

#### Related Topics

- [To start the BW Publisher](#)

### BW Publisher on a stand-alone SAP Gateway

If you want to separate the BW Publisher from other BusinessObjects Enterprise components, install the BW using a stand-alone SAP Gateway.

In this case you must install a local SAP Gateway on the same machine as the BW Publisher. In addition, the BW Publisher requires access to the BusinessObjects Enterprise Software Development Kit (SDK) and the Crystal Reports Print Engine. Thus, if you install the BW Publisher and the local SAP Gateway on a dedicated machine, you must also install the SIA Server.

**Related Topics**

- [Selecting your BW Publisher configuration](#)
- [Publishing from BW to BusinessObjects Enterprise](#)

## Adding servers to BusinessObjects Enterprise

If you expand your BusinessObjects Enterprise system after installing BusinessObjects XI Integration for SAP Solutions.

**Related Topics**

- [Installing components on BusinessObjects Enterprise machines](#)

## Uninstalling BusinessObjects XI Integration for SAP Solutions

This section describes uninstalling BusinessObjects XI Integration for SAP Solutions.

**Note:**

If you have installed multiple SAP solutions on the same Crystal Reports or BusinessObjects Enterprise server, and you want to uninstall them, then you must uninstall the SAP Solutions in the reverse order in which they were installed. Therefore, you must always uninstall the most recently installed SAP Solution first.

## To uninstall BusinessObjects XI Integration for SAP Solutions

If you want to delete users and groups that were imported from SAP through the Central Management Console (CMC) and the SAP authentication plug-in, you must remove the users and groups before you uninstall BusinessObjects XI Integration for SAP Solutions. You cannot delete SAP users from BusinessObjects Enterprise without BusinessObjects XI Integration for SAP Solutions.

1. Uninstall BusinessObjects XI Integration for SAP Solutions.
  - On a Windows computer, uninstall the BusinessObjects XI Integration for SAP from **Add/Remove Programs**.
  - On a UNIX computer, run the `AddOrRemoveProducts.sh` command.
2. Run the `partnercafouninstall.bat` or `partnercafouninstall.sh` script, depending on your platform. You must provide the password for the BusinessObjects Enterprise administrator.
  - On Windows, run `partnercafouninstall.bat -p BOE_PASSWORD`.
  - On UNIX, run `partnercafouninstall.sh -p BOE_PASSWORD`.

After the script finishes, you must also clean up the remaining SAP files.
3. In the `installdir\deployment\apps` folder, delete `SAP.properties` and `PartnerPlatformServices.properties`.
4. Undeploy and redeploy BusinessObjects Enterprise web applications using `wdeploy` from the `install\deployment` folder and the following commands:

```
wdeploy.sh <WAS type> -DAPP=CmcApp -Das_admin_pass
word=<your password here> undeploy
wdeploy.sh <WAS type> -DAPP=CmcApp -Das_admin_pass
word=<your password here> deploy
wdeploy.sh <WAS type> -DAPP=InfoViewApp -Das_admin_pass
word=<your password here> undeploy
wdeploy.sh <WAS type> -DAPP=InfoViewApp -Das_admin_pass
word=<your password here> deploy
wdeploy.sh <WAS type> -DAPP=OpenDocument -Das_ad
min_password=<your password here> undeploy
wdeploy.sh <WAS type> -DAPP=OpenDocument -Das_ad
min_password=<your password here> deploy
wdeploy.sh <WAS type> -DAPP=dswsbobje -Das_admin_pass
word=<your password here> undeploy
wdeploy.sh <WAS type> -DAPP=dswsbobje -Das_admin_pass
word=<your password here> deploy
```

## 3 | Installing BusinessObjects XI Integration for SAP Solutions

### *Uninstalling BusinessObjects XI Integration for SAP Solutions*



# Configuring SAP authentication



# 4

chapter



This section explains how to configure BusinessObjects Enterprise authentication for your SAP environment.

### Accessing the SAP authentication application

After installing SAP Authentication, you must provide BusinessObjects Enterprise with information about your SAP system. BusinessObjects XI Integration for SAP Solutions installs a web application to assist you. This web application is accessible through the main BusinessObjects Enterprise administration tool, the Central Management Console (CMC). To access it from the home page of the CMC, click **Authentication**.

#### Related Topics

- [Authenticating SAP users](#)
- [Configuring SAP authentication for BusinessObjects Enterprise](#)

## Configuration overview

Once you have updated BusinessObjects Enterprise with BusinessObjects XI Integration for SAP Solutions, you must configure your SAP system and BusinessObjects Enterprise. These steps must be performed for BW, R/3, and mySAP ERP systems:

- [Configuring transports](#)
- [Creating and applying authorizations](#)
- [Configuring SAP authentication for BusinessObjects Enterprise](#)
- [Configuring SAP for server-side trust](#)
- [Configuring BusinessObjects Enterprise for server-side trust](#)
- [Configuring Data Access](#)

After you have completed these steps on an R/3 or mySAP ERP system, configuration is complete. You can begin using BusinessObjects XI Integration for SAP Solutions.

For BW systems, additional configuration is required to enable report viewing and report publishing. After completing these steps, go on to [Configuring the BW Publisher](#).



# Configuring SAP authentication for BusinessObjects Enterprise

SAP authentication enables SAP users to log on to BusinessObjects Enterprise using their SAP user names and passwords, without storing these passwords in BusinessObjects Enterprise. SAP authentication also allows you to preserve information about user roles in SAP, and to use this role information within BusinessObjects Enterprise to assign rights to perform administrative tasks, or access content.

## Related Topics

- [Authenticating SAP users](#)

## Creating a user account for BusinessObjects Enterprise

The BusinessObjects Enterprise system requires an SAP user account that is authorized to access SAP role membership lists, authenticate SAP users, and so on. You will need this user name and its password when you connect BusinessObjects Enterprise to your SAP system. For general instruction on creating SAP user accounts and assigning authorizations through roles, see your SAP documentation.

Use transaction `SU01` to create a new SAP user account named `CRYSTAL`. Use transaction `PFCG` to create a new role named `CRYSTAL_ENTITLEMENT`. (These names are recommended but not required.) Change the new role's authorization data by setting these values for the following authorization objects:

Authorization object	Field	Value
Authorization for file access (S_DATASET)	Activity (ACTVT)	Read, Write (33, 34)
	Physical file name (FILENAME)	* (denotes All)
	ABAP program name (PROGRAM)	*
Authorization Check for RFC Access (S_RFC)	Activity (ACTVT)	16
	Name of RFC to be protected (RFC_NAME)	BDCH, BDL5, STPA, SUSO, SUUS, SU_USER, SYST, SUNI, PRGN_J2EE, /CRYSTAL/SECURITY
	Type of RFC object to be protected (RFC_TYPE)	Function group (FUGR)
User Master Maintenance: User Groups (S_USER_GRP)	Activity (ACTVT)	Create or Generate, and Display (03)
	User group in user master maintenance (CLASS)	<p>*</p> <p><b>Note:</b>            For greater security, you may prefer to explicitly list the user groups whose members require access to BusinessObjects Enterprise.</p>

Finally, add the `CRYSTAL` user to the `CRYSTAL_ENTITLEMENT` role.

**Tip:**

If your system policies require users to change their passwords when they first log on to the system, log on now with the `CRYSTAL` user account and reset its password.

## Connecting to SAP entitlement systems

Before you can import roles or publish BW content to BusinessObjects Enterprise, you must provide information about the SAP entitlement systems that you want to integrate with BusinessObjects Enterprise. BusinessObjects Enterprise uses this information to connect to SAP when it determines role memberships and authenticates SAP users.

### To add an SAP entitlement system to BusinessObjects Enterprise

1. Go to the "Authentication" management area of the CMC.
2. Double-click the **SAP** link.

The entitlement systems settings appear.

**Tip:**

If an entitlement system is already displayed in the **Logical system name** list, click **New**.

3. In the **System** field, type the three-character System ID (SID) of your SAP system.
4. In the **Client** field, type the client number that BusinessObjects Enterprise must use when it logs on to your SAP system.  
BusinessObjects Enterprise combines your System and Client information, and adds an entry to the **Logical system name** list
5. Ensure the **Disabled** check box is clear.

**Note:**

Use the **Disabled** check box to indicate to BusinessObjects Enterprise that a particular SAP system is temporarily unavailable.

6. Complete the **Message Server** and **Logon Group** fields as appropriate, if you have set up load balancing such that BusinessObjects Enterprise must log on through a message server.

**Note:**

You must make the appropriate entries in the `Services` file on your BusinessObjects Enterprise machine to enable load balancing - especially if your deployment not on a single machine. Specifically you should account for the machines hosting the CMS, the Web application server, as well as all machines managing your authentication accounts and settings.

7. If you have not set up load balancing (or if you prefer to have BusinessObjects Enterprise log on directly to the SAP system), complete the **Application Server** and **System Number** fields as appropriate.
8. In the **Username**, **Password**, and **Language** fields, type the user name, password, and language code for the SAP account that you want BusinessObjects Enterprise to use when it logs on to SAP.

**Note:**

These credentials must correspond to the user account that you created for BusinessObjects Enterprise. For details, see [Creating a user account for BusinessObjects Enterprise](#).

9. Click **Update**.
10. On the **Options** tab, ensure that the **Enable SAP Authentication** check box is selected.

If you add multiple entitlement systems, click the **Options** tab to specify the system that BusinessObjects Enterprise uses as the default (that is, the system that is contacted to authenticate users who attempt to log on with SAP credentials but without specifying a particular SAP system).

## To verify if your entitlement system was added correctly

1. Click the **Role Import** tab.
2. Select the name of the entitlement system from the **Logical system name** list.

If the entitlement system was added correctly, the **Available roles** list will contain a list of roles that you can choose to import.

**Tip:**

If no roles are visible in the **Logical system name** list, look for error messages on the page. These may give you the information you need to correct the problem.

## Setting SAP Authentication options

SAP Authentication includes a number of options that you can customize when integrating BusinessObjects Enterprise with your SAP systems. For instance, you can enable/disable SAP Authentication or configure BusinessObjects Enterprise to temporarily disable SAP Authentication for SAP systems when they become unavailable.

### To set SAP Authentication options

1. Go to the "Authentication" management area of the CMC.
2. Double-click the **SAP** link and then click the **Options** tab.
3. Review and modify settings as required.

Setting	Description
<b>Enable SAP Authentication</b>	Clear this check box if you want to disable SAP Authentication completely. (To disable SAP Authentication for a specific SAP System, select that system's <b>Disabled</b> check box on the <b>Entitlement Systems</b> tab.)
<b>Default system</b>	<p>In this list, select the SAP entitlement system that BusinessObjects Enterprise uses as the default (that is, the system that is contacted to authenticate users who attempt to log on with SAP credentials but without specifying a particular SAP system). If this list is empty, see <a href="#">To add an SAP entitlement system to BusinessObjects Enterprise</a>.</p> <p><b>Note:</b> If you designate a default system, users from that system do not have to enter their System ID and client when they connect from client tools like Live Office or Universe Designer using SAP authentication. For example, if SYS~100 is set as the default system, SYS~100/user1 would be able to log on as user1 when SAP authentication is chosen.</p>
<b>Max failed entitlement system accesses</b>	<p>Type the number of times that BusinessObjects Enterprise should re-attempt contacting an SAP system to fulfill authentication requests. Setting the value to -1 allows BusinessObjects Enterprise to attempt to contact the entitlement system an unlimited number of times. Setting the value to 0 limits BusinessObjects Enterprise to making one attempt to contact the entitlement system.</p> <p><b>Note:</b> Use this setting together with <b>Keep entitlement system disabled [seconds]</b> to configure how BusinessObjects Enterprise handles SAP entitlement systems that are temporarily unavailable. BusinessObjects Enterprise uses these settings to determine when to stop communicating with an SAP system that is unavailable, and when it should resume communication with that system.</p>

Setting	Description
<b>Keep entitlement system disabled [seconds]</b>	Type the number of seconds that BusinessObjects Enterprise should wait before resuming attempts to authenticate users against the SAP system. For example, if you type 3 for <b>Max failed entitlement system accesses</b> , BusinessObjects Enterprise allows a maximum of 3 failed attempts to authenticate users against any particular SAP system; the fourth failed attempt results in BusinessObjects Enterprise ceasing its attempts to authenticate users against that system for the amount of time specified by <b>Keep entitlement system disabled [seconds]</b> .
<b>Max concurrent connections per system</b>	Use this field to specify how many connections you want to keep open to your SAP system at the same time. For example, if you type 2 in this field, BusinessObjects Enterprise keeps two separate connections open to SAP.
<b>Number of uses per connection</b>	Use this field to specify how many operations you want to allow to the SAP system per connection. For example, if you specified 2 for <b>Max concurrent connections per system</b> and 3 for <b>Number of uses per connection</b> , once there has been 3 logons on one connection, BusinessObjects Enterprise will close that connection and restart it.
<b>Enable SAP Authentication</b>	Clear this check box if you want to disable SAP Authentication completely. (To disable SAP Authentication for specific SAP Systems, select that system's <b>Disabled</b> check box on the <b>Entitlement Systems</b> tab.)
<b>Automatically import users</b>	Select this check box if you want BusinessObjects Enterprise to create user accounts and user folders for all role members when you actually import the roles. Clear the check box to have BusinessObjects Enterprise create user accounts and user folders dynamically, when users log on for the first time with valid SAP credentials. For details see <a href="#">Importing SAP roles to BusinessObjects Enterprise</a> .

Setting	Description
<b>Concurrent users and Named Users</b>	<p>Use these options to specify if new user accounts are configured to use concurrent user licenses or named user licenses. Concurrent licenses specify the number of people who can connect to BusinessObjects Enterprise at the same time. This type of licensing is very flexible because a small number of concurrent licenses can support a large user base. For example, depending on how often and how long users access BusinessObjects Enterprise, a 100 user concurrent license could support 250, 500, or 700 users. Named user licenses are associated with specific users and allow people to access the system based on their user name and password. This provides named users with access to the system regardless of how many other people are connected.</p> <p><b>Note:</b> The option you select here does not change the number or type of user licenses that you have installed in BusinessObjects Enterprise. You must have the appropriate licenses available on your system.</p>
<b>Force user synchronization</b>	Select this check box if you want to synchronize SAP user account information when you click <b>Update</b> on the <b>Role Import</b> tab.
<b>Content folder root</b>	Use this field to specify where you want BusinessObjects Enterprise to begin replicating the BW folder structure in the CMC and InfoView. The default is <code>/SAP/2.0</code> but you can change it to a different folder if you want. To change this value, you must change it both in the CMC and the Content Administration Workbench. For details, see <a href="#">To change the Content folder root</a> .

4. Click **Update**.



## To change the Content folder root

1. Go to the "Authentication" management area of the CMC.
2. Double-click the **SAP** link.
3. Click **Options** and type the name of the folder in **Content folder root** field.  
 The folder name that you type here is the folder that you want BusinessObjects Enterprise to begin replicating the BW folder structure from.
4. Click **Update**.
5. In the BW Content Administration Workbench, expand **Enterprise system**.
6. Expand **Available systems** and double-click the system that your BusinessObjects Enterprise is connecting to.
7. Click the **Layout** tab and in the **Content base folder**, type the folder that you want to use as the root SAP folder in BusinessObjects Enterprise (for example, `/SAP/2.0/`).

## Importing SAP roles to BusinessObjects Enterprise

By importing SAP roles into BusinessObjects Enterprise, you allow role members to log on to BusinessObjects Enterprise with their usual SAP credentials. In addition, Single Sign On (SSO) is enabled so that SAP users are logged on to BusinessObjects Enterprise automatically when they access reports from within the SAP GUI or an SAP Enterprise Portal.

### Note:

There are often many requirements for enabling SSO. Some of these might include using a driver and application that are SSO-capable, and ensuring your server and web server are in the same domain. For more information about configuring your system for SSO, refer to the appropriate security documents in SAP and BusinessObjects Enterprise.

For each role that you import, BusinessObjects Enterprise generates a group. Each group is named with the following convention: *SystemID~ClientNumber@NameOfRole*. You can view the new groups in the "Users and Groups" management area of the CMC. You can also use these groups to define object security within "BusinessObjects Enterprise". For details, see the

“Setting Rights” chapter in the *SAP BusinessObjects Enterprise Administrator's Guide*.

Consider three main categories of users when configuring BusinessObjects Enterprise for publishing, and when importing roles to BusinessObjects Enterprise:

- BusinessObjects Enterprise administrators

Enterprise administrators configure the BusinessObjects Enterprise system for publishing content from SAP. They import the appropriate roles, create necessary folders, and assign rights to those roles and folders in BusinessObjects Enterprise.

- Content publishers

Content publishers are those users who have rights to publish content into roles. The purpose of this category of user is to separate regular role members from those users with rights to publish reports.

- Role members

Role members are users who belong to “content bearing” roles. That is, these users belong to roles to which reports are published. They have View, View on Demand, and Schedule rights for any reports published to the roles they are members of. However, regular role members cannot publish new content, nor can they publish updated versions of content.

You must import all content publishing and all content bearing roles to BusinessObjects Enterprise prior to publishing for the first time.

#### Note:

It is strongly recommended that you keep the activities of roles distinct. For example, while it is possible to publish from an administrator role, it is better practice to publish only from content publisher roles. Additionally, the function of content publishing roles is only to define which users can publish content. Thus, content publishing roles should not contain any content; content publishers should publish to content bearing roles that are accessible to regular role members.

## To import a role to BusinessObjects Enterprise

1. Go to the "Authentication" management area of the CMC.
2. Double-click the **SAP** link.

3. On the **Options** tab, select or clear the **Automatically import users** check box, depending on how you want BusinessObjects Enterprise to handle user accounts when you import roles.

- Select the check box to have BusinessObjects Enterprise create a user account and a user folder immediately for each member of the role(s) that you import

When you later add members to a role within SAP, BusinessObjects Enterprise dynamically creates additional user accounts and user folders when new role members first log on to BusinessObjects Enterprise with valid SAP credentials.

- Clear the check box to have BusinessObjects Enterprise import roles without immediately creating user accounts and user folders.

BusinessObjects Enterprise dynamically creates new user accounts and user folders when role members first log on to BusinessObjects Enterprise with valid SAP credentials.

Once user accounts and user folders are created, you can subsequently view them in the "Users and Groups" and "Folders" management areas of the CMC.

4. On the **Options** tab, select either **Concurrent users** or **Named users** depending on your licenses.

Note that the option you select here does not change the number or type of user licenses that you have installed in BusinessObjects Enterprise. You must have the appropriate licenses available on your system.

5. Click **Update**.
6. On the **Role import** tab, select the appropriate entitlement system from the **Logical system name** list.

**Note:**

If this list is empty, see [Connecting to SAP entitlement systems](#).

7. In the **Available roles** area, select the role(s) that you want to import, and then click **Add**.
8. Click **Update**.

## To check that roles and users were imported correctly

1. Ensure that you know the user name and password of an SAP user who belongs to one of the roles that you just mapped to BusinessObjects Enterprise.
2. For Java InfoView go to `http://webserver:portnumber/InfoViewApp/`. For .NET InfoView go to `http://webserver/InfoViewApp/`.  
Replace *webserver* with the name of the web server and *portnumber* with the port number that is set up for BusinessObjects Enterprise. You may need to ask your administrator for the name of the web server, the port number, or the exact URL to enter.
3. From the **Authentication Type** list, select **SAP**.
4. Type the SAP system and system client that you want to log on to.
5. Type the user name and password of a mapped user.
6. Click **Log On**.

You should be logged on to InfoView as the selected user.

# Configuring Data Access

This section guides you through the process of configuring data access.

## Configuring SAP Logon for the Data Access

When users report off of data in SAP tables using Crystal Reports and the Data Access, they are first prompted to select their SAP system from the **Available SAP Systems** list. The Data Access retrieves this list of available systems from the `saplogon.ini` file in the Windows directory on that user's computer.

If users have the SAP GUI installed, adding a new SAP system to their SAP GUI logon adds information about this system to their `saplogon.ini` file. After the new SAP system is added, it becomes available via the Data Access (provided they are authorized to use the system). Alternately, you may configure and distribute `SAPlogon.ini` using your standard procedures.

You can also add the full path to the `saplogon.ini` file to the `SAPLOGON_INI_FILE` environment variable.

Consult your SAP documentation for details.





# Configuring SAP Server-Side Trust

5

chapter



## SAP Server-Side Trust Overview

This section provides procedures for configuring server-side trust between SAP Web Application Servers (version 6.20 and up) and BusinessObjects Enterprise. You need to set up server-side trust if you are using multi-pass report bursting (for publications where the report query depends on the context of the user).

Server-side trust involves password-less impersonation. To impersonate an SAP user without providing a password, a user must be identified with SAP using a more secure method than a regular username and password. (An SAP user with the SAP\_ALL authorization profile cannot impersonate another SAP user without knowing that user's password.)

### Enabling server-side trust using the free SAP crypto library

To enable server-side trust for BusinessObjects Enterprise using the free SAP crypto library, you must run the relevant servers under credentials that are authenticated using a registered Secure Network Communication (SNC) provider. These credentials are configured within SAP to be allowed to impersonate without a password. For BusinessObjects Enterprise, you need to run the servers involved in report-bursting under these SNC credentials, such as the Crystal Reports Job Server.

You also need an encryption library in order to configure server-side trust. An SAP Cryptographic Library is available for download from the SAP web site. Note that the SAP Cryptographic Library can be used only for setting up server-side trust. The Cryptographic Library is available for Windows and UNIX. For more information about the Cryptographic Library, see SAP notes 711093, 597059 and 397175 on the SAP web site.

The SAP server and BusinessObjects Enterprise need to be assigned certificates that prove their identities to each other. Each server will have its own certificate and a list of certificates for trusted parties. To configure server-side trust between SAP and BusinessObjects Enterprise, you need to create a password-protected set of certificates called a Personal Security Environment (PSE). This document describes how to set up and maintain the PSEs, and how to securely associate them with BusinessObjects Enterprise processing servers.



## Client versus server SNC

In client SNC, an SNC name identifier is mapped to one (or more) SAP user names in SU01. When a logon request is sent, the SNC name together with the SAP name is passed to the SAP system, however no password is sent. Provided the SNC name maps to the specified SAP name, the logon is permitted. A client-side logon string for a direct application host logon is shown below:

```
ASHOST =myserver.mydomain SYSNR=37 CLIENT=066 LANG=EN
USER=USER123
SNC_MODE=1 SNC_QOP=9 SNC_LIB="/usr/local/lib/libsapcrypto.so"
SNC_PARTNERNAME="p:CN=TheServer, OU=Dept., O=TheCompany, C=FR"
SNC_MYNAME="p:CN=TheUser, O=TheCompany, C=US"
```

The SAP user USER123 must be mapped to p:CN=TheUser, O=TheCompany, C=US in SU01 for this logon attempt to succeed. In server SNC on the other hand, it is not a requirement to explicitly map between the SNC name identifier and SAP user name. Instead, the SNC name is configured in transaction SNC0 to be allowed to perform an impersonation-style logon for “any” user without having to provide this users' password. For example:

```
ASHOST =myserver.mydomain SYSNR=37 CLIENT=066 LANG=EN
SNC_MODE=1
SNC_QOP=9 SNC_LIB="/usr/local/lib/libsapcrypto.so"
SNC_PARTNERNAME="p:CN=TheServer, OU=Dept., O=TheCompany, C=FR"
SNC_MYNAME="p:CN=TheUser, O=TheCompany, C=US" EXTID
TYPE=UN EXTIDDATA=USER123
```

The server SNC impersonation logon, or logon via external ID is much more powerful than its client counterpart. This logon enables access to any SAP user account in the system. Other External ID logon options include Logon Tickets and X.509 client certificates.

## BusinessObjects Enterprise server responsibilities

Specific BusinessObjects Enterprise servers are relevant to the SAP integration in terms of single sign-on (SSO). The following table lists these servers, the type of SNC they require for particular areas of responsibility.

Server	SNC type	Areas of responsibility
Web Application Server	client	SAP Authentication role list
	server	Crystal Reports Dynamic Parameter pick lists and personalization
CMS	client	Password, ticket, checking role membership, and user lists
Page Server	server	Crystal Reports view on demand
Job Server	server	Scheduling Crystal Reports
WeBI Processing Server	server	Viewing and scheduling WeBI reports and List of Values (LOV) prompts
Multidimensional Analysis Service Server (Voyager)	server	Analysis

**Note:**

The Web Application Server and the CMS use client-SNC and thus require an explicit mapping of the SNC name to SAP user name. This is specified in either transaction `SU01` or `SM30` for table `USRACL`.

For options on using server groups to manage servers running under distinct credentials see [Using server groups](#).

## Configuring SAP for server-side trust

The following step procedure describes how to set up SNC for use with BusinessObjects Enterprise. Please note that you should consult the SAP documentation provided with your SAP server for more information or troubleshooting assistance.

After you complete the steps for configuring SAP for server-side trust, proceed to [Configuring BusinessObjects Enterprise for server-side trust](#).

### To configure SAP for server-side trust

1. From the SAP marketplace, download the SAP Cryptographic Library for all relevant platforms.

**Note:**

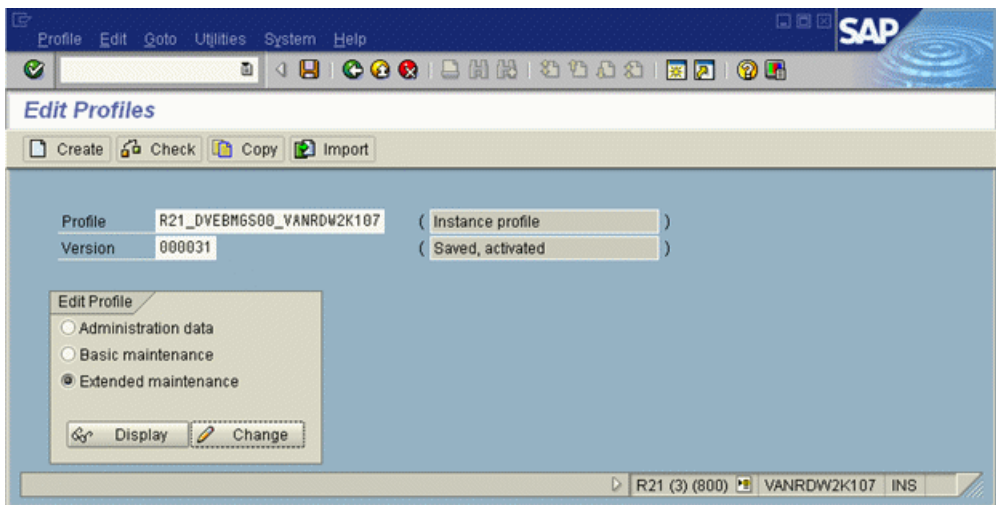
For more information about the Cryptographic Library, see SAP notes 711093, 597059 and 397175 on the SAP web site.

2. Ensure that you have SAP administrator's credentials for within SAP and for the machine running SAP, and administrator's credentials for BusinessObjects Enterprise and the machine (or machines) it is running on.
3. On the SAP machine, copy the SAP Cryptographic Library and the SAGGENPSE tool to <DRIVE>:\usr\sap\<SID>\SYS\exe\run\ directory (on Windows).
4. Locate the file named "ticket" that was installed with the SAP Cryptographic Library, and copy it to the <DRIVE>:\usr\sap\<SID>\<instance>\sec\ directory (on Windows).
5. Create an environment variable named *SECUDIR* that points to the directory where the ticket resides.

**Note:**

This variable must be accessible to the user under which SAP's disp+work process runs.

6. In the SAP GUI, go to transaction RZ10 and change the instance profile in **Extended maintenance** mode.



7. In profile edit mode, point SAP profile variables to the Cryptographic Library and give the SAP system a Distinguished Name (DN). These variables should follow the LDAP naming convention:

Tag	Meaning	Description
CN	Common Name	The everyday name of the certificate proprietor.
OU	Organizational Unit	PG for Product Group, for example.
O	Organization	The name of the organization for which the certificate was issued.
C	Country	The country where the organization is located.

For example, for R21: p:CN=R21, OU=PG, O=BOBJ, C=CA

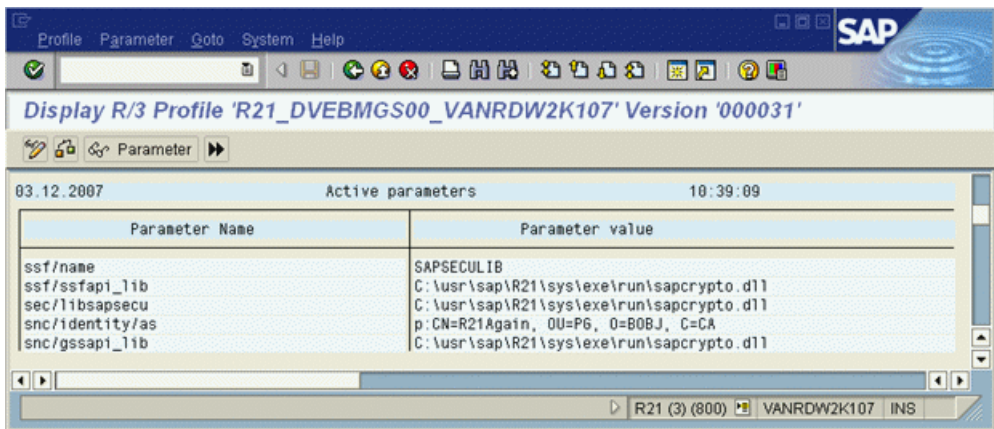
**Note:**

Note that the prefix p: is for the SAP Cryptographic Library. It is required when referring to the DN within SAP, but will not be visible when examining certificates in STRUST or using SAPGENPSE.

8. Enter the following profile values, substituting for your SAP system where necessary:

Profile variable	Value
ssf/name	SAPSECULIB
ssf/ssfapi_lib	Full path to sapcrypto lib
sec/libsapsecu	Full path to sapcrypto lib
snc/gssapi_lib	Full path to sapcrypto lib
snc/identity/as	Your SAP system's DN

For example:



9. Restart your SAP instance.
10. When the system is running again, log on and go to transaction STRUST, which should now have additional entries for SNC and SSL.
11. Right-click the SNC node and click **Create**.  
The identity you specified in RZ10 should now appear.
12. Click **OK**.
13. To assign a password to the SNC PSE, click the lock icon.

**Note:**

Do not lose this password. You will be prompted for it by STRUST every time you view or edit the SNC PSE.

**14.** Save the changes.

**Note:**

If you do not save your changes, the application server will not start again when you enable SNC.

**15.** Return to transaction RZ10 and add the remainder of the SNC profile parameters:

Profile variable	Parameter
snc/accept_insecure_rfc	1
snc/accept_insecure_r3int_rfc	1
snc/accept_insecure_gui	1
snc/accept_insecure_cplic	1
snc/permit_insecure_start	1
snc/data_protection/min	1
snc/data_protection/max	3
snc/enable	1

The minimum protection level is set to authentication only (1) and the maximum is privacy (3). The snc/data\_protection/use value defines that only authentication is to be used in this case, but could also be (2) for integrity, (3) for privacy and (9) for maximum available. The snc/accept\_insecure\_rfc, snc/accept\_insecure\_r3int\_rfc, snc/accept\_insecure\_gui, and snc/accept\_insecure\_cplic values set to (1) ensure that previous (and potential insecure) communication methods are still permitted.

**16.** Restart your SAP system.

You must now configure BusinessObjects Enterprise for server-side trust.

**Related Topics**

- [Configuring BusinessObjects Enterprise for server-side trust](#)

## Configuring BusinessObjects Enterprise for server-side trust

The following procedures need to be performed in order to configure BusinessObjects Enterprise for server-side trust. Note that these steps are Windows-based, but because the SAP tool is a command line tool, the steps are very similar on UNIX.

1. [To set up the environment](#)
2. [To generate a PSE](#)
3. [To configure BusinessObjects Enterprise servers](#)
4. [To configure PSE access](#)
5. [To configure SAP authentication SNC settings](#)
6. [Using server groups](#)

### To set up the environment

Before you begin, ensure that:

- The SAP Cryptographic Library has been downloaded and expanded on the host on which BusinessObjects Enterprise processing servers run.
- The appropriate SAP systems have been configured to use SAP Cryptographic Library as the SNC provider.

For more information, see [Configuring SAP for server-side trust](#).

Before PSE maintenance can begin, you need to set up the library, tool, and environment where PSEs are stored.

1. Copy the SAP Cryptographic Library (including the PSE maintenance tool) to a folder on the machine running BusinessObjects Enterprise.

For example: C:\Program Files\SAP\Crypto

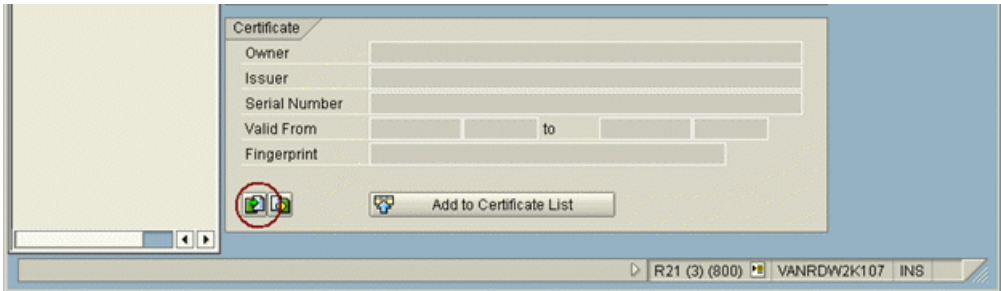
2. Add the folder to the `PATH` environment variable.
3. Add a system-wide environment variable `SNC_LIB` that points to the Cryptographic Library.  
For example: `C:\Program Files\SAP\Crypto\sapcrypto.dll`
4. Create a subfolder named `sec`.  
For example: `C:\Program Files\SAP\Crypto\sec`
5. Add a system-wide environment variable `SECUDIR` that points to the `sec` folder.
6. Copy the `ticket` file from the SAP Cryptographic Library into the `sec` folder.

## To generate a PSE

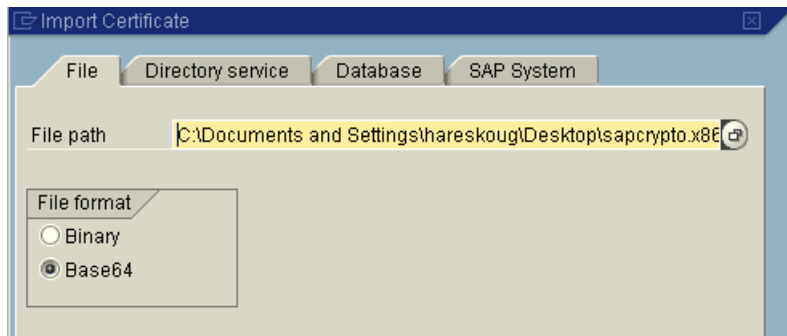
SAP accepts a BusinessObjects Enterprise server as a trusted entity when the relevant BusinessObjects Enterprise servers have a PSE and the PSE is associated with SAP. This “trust” between SAP and BusinessObjects Enterprise components is established by sharing the public version of each other’s certificates. The first step is to generate a PSE for BusinessObjects Enterprise that automatically generates its own certificate.

1. Open a command prompt and run `sapgenpse.exe gen_pse -v -p BOE.pse` from within the Cryptographic Library folder.
2. Choose a PIN and the DN you want for your BusinessObjects Enterprise system.  
For example, `CN=MyBOE01, OU=PG, O=BOBJ, C=CA`.  
You now have a default PSE, with its own certificate.
3. Use the following command to export the certificate in the PSE:  
`sapgenpse.exe export_own_cert -v -p BOE.pse -o MyBOECert.crt`
4. In the SAP GUI, go to transaction `STRUST` and open the `SNC PSE`.  
You will be prompted for the password you have already assigned.
5. Import the `MyBOECert.crt` file created earlier:





The certificates from SAPGENPSE are Base64-encoded. Make sure you select Base64 when importing them:



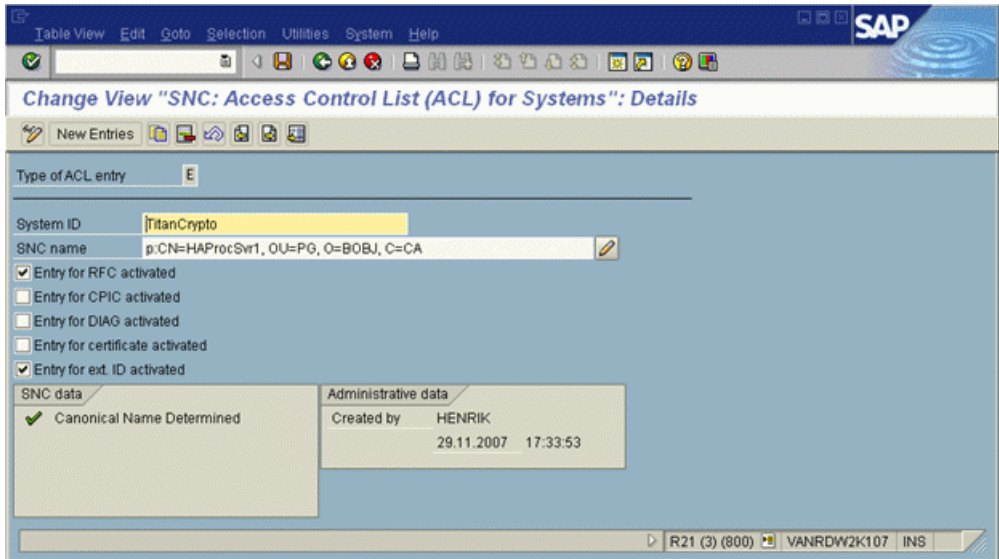
6. To add the BusinessObjects Enterprise certificate to the SAP server's PSE certificate list, click the **Add to certificate list** button.
7. To add SAP's certificate to BusinessObjects Enterprise's PSE, double-click the SAP certificate.
8. Save your changes in STRUST.
9. Click the **Export** button and provide a file name for the certificate. For example, MySAPCert.crt.

**Note:**

The format should remain Base64.

10. Go to transaction SNC0.
11. Add a new entry, where:
  - The System ID is arbitrary but reflects your BusinessObjects Enterprise system.

- The SNC name should be the DN (prefixed by p:) that you provided when you created your BusinessObjects Enterprise PSE (in step 2).
- The **Entry for RFC activated** and **Entry for ext. ID activated** checkboxes are both selected:



12. To add the exported certificate to the BusinessObjects Enterprise PSE, run the following command on the command prompt:

```
sapgenpse.exe maintain_pk -v -a MySAPCert.crt -p BOE.pse
```

The SAP Cryptographic Library is installed on the BusinessObjects Enterprise machine. You have created a PSE that will be used by BusinessObjects Enterprise servers to identify themselves to SAP servers. SAP and the BusinessObjects Enterprise PSE have exchanged certificates. SAP permits entities with access to the BusinessObjects Enterprise PSE to perform RFC calls and password-less impersonation. Proceed to [To configure BusinessObjects Enterprise servers](#).

## To configure BusinessObjects Enterprise servers

After you generate a PSE for BusinessObjects Enterprise, you must configure an appropriate server structure for SAP processing. The following procedure creates a node for SAP processing servers, so that you can set operating system credentials on the node level.

### Note:

In this version of BusinessObjects Enterprise, servers are no longer configured in the Central Configuration Manager (CCM). Instead, a new Server Intelligence Agent (SIA) must be created.

1. In the CCM, create a new node for SAP processing servers.  
 Give the node an appropriate name such as SAPProcessor. For information about nodes, see “Adding a node” in the *SAP BusinessObjects Enterprise Administrator's Guide*.
2. In the CMC, add the processing servers you need to the new node, then start the new servers.  
 For information about adding and starting servers, see the “Managing and Configuring Servers” chapter of the *SAP BusinessObjects Enterprise Administrator's Guide*.

Proceed to [To configure PSE access](#).

### Related Topics

- [To generate a PSE](#)

## To configure PSE access

After you configure the BusinessObjects Enterprise node and servers (see [To configure BusinessObjects Enterprise servers](#) for details), you need to configure PSE access using the SAPGENPSE tool.

1. Run the following command from the command prompt:  
 sapgenpse.exe seclogin -p BOE.pse

**Note:**

You will be prompted for the PSE PIN. If you run the tool under the same credentials used by your BusinessObjects Enterprise SAP processing servers, you do not need to specify a user name.

2. To verify that the single sign-on (SSO) link is established, list the contents of the PSE using the following command:

```
sapgenpse.exe maintain_pk -l
```

The results should look similar to the following:

```
C:\Documents and Settings\hareskoug\Desktop\sapcrypt
to.x86\ntintel>sapgenpse.exe
maintain_pk -l
  maintain_pk for PSE "C:\Documents and Settings\hareskoug\My Documents\snc\sec\bobjsapproc.pse"
*** Object <PKList> is of the type <PKList_OID> ***

1. -----
-----
      Version:                      0 (X.509v1-1988)
      SubjectName:                  CN=R21Again, OU=PG,
O=BOBJ, C=CA
      IssuerName:                   CN=R21Again, OU=PG,
O=BOBJ, C=CA
      SerialNumber:                 00
      Validity - NotBefore:         Wed Nov 28 16:23:53 2007
(071129002353Z)
                        NotAfter:   Thu Dec 31 16:00:01 2037
(380101000001Z)
      Public Key Fingerprint:       851C 225D 1789 8974 21DB
9E9B 2AE8 9E9E
      SubjectKey:                   Algorithm RSA (OID
1.2.840.113549.1.1.1), NULL

C:\Documents and Settings\hareskoug\Desktop\sapcrypt
to.x86\ntintel>
```

You should not be prompted again for the PSE PIN after a successful seclogin command.

**Note:**

If you encounter PSE access problems, use the -O to specify PSE access. For example, to grant PSE access to a specific user in a specific domain, type:

```
sapgenpse seclogin -p BOE.pse -O <domain\user>
```

Proceed to *To configure SAP for server-side trust*.

## To configure SAP authentication SNC settings

After you configure PSE access, you need to configure the SAP authentication settings in the CMC.

1. Go to the "Authentication" management area of the CMC.
2. Double-click the **SAP** link.

The entitlement systems settings appear.

3. Click the **SNC settings** tab on the SAP Authentication page.
4. Select your entitlement system from the **Logical system name** list.
5. Select **Enable Secure Network Communication (SNC)** under Basic Settings.
6. Enter the path for the SNC library settings in **SNC library path**.

**Note:**

This step is necessary even though the library is already defined in the `SNC_LIB` environment variable.

7. Select a level of protection under Quality of Protection.  
For example select **Authentication**.

**Note:**

Make sure you do not exceed the level of protection configured on the SAP system. The level of protection is customizable and is determined by your organization's needs and the capabilities of their SNC library.

8. Enter the SNC name of the SAP system under **Mutual authentication settings**.

The SNC name format depends on the SNC library. Using the SAP cryptography library, the distinguished name recommendation is that it follows LDAP naming conventions. It must have "p:" as its prefix.

9. Ensure that the SNC name of the credentials under which BusinessObjects Enterprise servers run appears in the **SNC name of Enterprise system** field.

**Note:**

In scenarios where several SNC names are configured, this field should be left blank.

10. Provide the DNs of both the SAP system and the BusinessObjects Enterprise PSE.

**Related Topics**

- [To configure PSE access](#)
- [Using server groups](#)

## Using server groups

Unless the processing (Crystal Report or Web Intelligence) servers are running under credentials that have access to the PSE, you must create a specific server group containing only these servers along with the required supporting servers. For more information and descriptions of the various BusinessObjects Enterprise servers, see the “Architecture” chapter in the *SAP BusinessObjects Enterprise Administrator's Guide*.

There are three options to choose from when configuring content processing servers for your SAP content

1. Maintain a single SIA, including all BusinessObjects Enterprise servers, running under credentials that have access to the PSE. This is the simplest option - no server groups need to be created. This approach is the least secure in that an unnecessary number of servers have access to the PSE.
2. Create a second SIA with access to the PSE and add to it the Crystal Report or Web Intelligence processing servers. Delete the duplicated servers from the original SIA. No server groups need to be created but less servers have access to the PSE.
3. Create a SIA exclusively for use for SAP with access to the PSE. Add to it the Crystal Report or Web Intelligence processing servers. In the approach, only SAP content should run on these servers, and more importantly SAP content should only run on these servers. Since in this

scenario content needs to be directed to certain servers, you must create server groups for the SIA.

### **Guidelines for using a server group**

The server group needs to reference the SIA used exclusively to handle SAP content. In addition, the server group needs to reference the following servers:

- Adaptive Servers
- Publication Servers
- Destination Job Servers

All SAP content; WebI documents and Crystal Reports need to be associated with the server group using the strictest association, i.e. that they must run on servers in the group. When this association is done on an object level, the server group setting should be propagated into settings for both direct scheduling as well as for publications.

To prevent other (non-SAP) content from ever processing on the SAP-specific processing servers, you should create another server group that includes all the servers under the original SIA. It is recommended that you setup a strict association between this content and the non-SAP server group.

## **Configuring Data Access**

This section guides you through the process of configuring data access.

### **Processing scheduled reports in SAP's batch mode**

You can run scheduled reports in BusinessObjects Enterprise using the SAP batch mode. The InfoSet and Open SQL drivers can run reports using either the SAP batch or background mode when specific environment variables are set to 1. The relevant environment variables are :

- `CRYSTAL_INFOSET_FORCE_BATCH_MODE` (for the InfoSet driver)
- `CRYSTAL_OPENSQ_L_FORCE_BATCH_MODE` (for the Open SQL driver)

However, it is recommended that you use this feature only when you have a distributed installation of BusinessObjects Enterprise. When these

environment variables are set to 1, the drivers run reports using SAP's batch mode, regardless of the reporting component that is actually running the report. Therefore, if you create these environment variables as system environment variables on a machine that is running a combination of BusinessObjects Enterprise servers, the drivers run all reports in batch mode (including on-demand report requests from the Crystal Reports Processing Server and the Report Application Server).

**Note:**

To ensure that the drivers run only your scheduled reports in batch mode (that is reports run by the Report Job Server), avoid setting system environment variables on machines running combinations of BusinessObjects Enterprise servers.

**Note:**

SAP users who schedule reports in BusinessObjects Enterprise may require additional authorizations in SAP.

**Related Topics**

- [Creating and applying authorizations](#)
- [Scheduling a report in batch mode \(with an Open SQL query\)](#)

## To process scheduled reports in SAP batch mode

Follow the steps below to set the batch mode system environment variables on the machine(s) running the Report Job server .

1. On Windows right-click **My Computer** and click **Properties**.
2. Go to **System Properties > Advanced > Environment Variables**.
3. Add the following SAP batch mode settings as system variables:

```
CRYSTAL_INFOSET_FORCE_BATCH_MODE=1  
CRYSTAL_OPENSQLE_FORCE_BATCH_MODE=1
```

**Note:**

For UNIX, add the same SAP batch mode settings to your environment variables.

Click **OK** to save the new variables.



4. Go to **Start > BusinessObjects XI 3.1 > BusinessObjects Enterprise > Central Configuration Manager**.
5. Right-click **Server Intelligent Agent** and click **Restart**.

**Note:**

The new settings affect all the Crystal Report processing servers running on the machine on which you have applied the batch mode environment settings. In a distributed deployment, it is recommended that you apply these settings on the machine running the Crystal Report Job server, and no other Crystal Report servers.

## Configuring multi-pass publications

For detailed instructions on creating multi-pass publications, see the *SAP BusinessObjects Enterprise Publisher's Guide*.

### Troubleshooting multi-pass publications

If you encounter problems with multi-pass publications, enable tracing for the Crystal Reports (CR) or Multidimensional Data Access (MDA) drivers for SAP and look at the logon string used for each job or recipient. These logon strings should resemble the following:

```
SAP: Successfully logged on to SAP server.  
Logon handle: 1. Logon string: CLIENT=800 LANG=en  
ASHOST="vanrdw2k107.sap.crystald.net" SYSNR=00 SNC_MODE=1  
SNC_QOP=1  
SNC_LIB="C:\WINDOWS\System32\sapcrypto.dll"  
SNC_PARTNERNAME="p:CN=R21Again, OU=PG, O=BOBJ, C=CA" EX  
TIDDATA=HENRIKRPT3 EXTIDTYPE=UN
```

The logon string must have the appropriate EXTIDTYPE=UN (for username) and EXTIDDATA should be the SAP username of the recipient. In this example, the logon attempt was successful.





# Integrating BusinessObjects Enterprise and BW



# 6

chapter



This section shows how to configure BW to enable and administer report publishing from BW to BusinessObjects Enterprise. It also includes instructions for configuring the http request handler in SAP.

## Configuration overview

This section outlines the configuration steps needed to integrate BW and BusinessObjects Enterprise.

Before beginning this section, make sure you have completed the configuration steps outlined in [Configuring SAP authentication](#).

### About BW Publisher Service

BW Publisher Service enables you to add content to your SAP and BusinessObjects Enterprise repositories simultaneously.

The BW Publisher Service is different from the Publishing Wizard and the Publishing feature. The Publishing Wizard is a BusinessObjects Enterprise component that enables you to add reports to your BusinessObjects Enterprise repository only. The Publishing feature in BusinessObjects Enterprise lets you distribute personalized collections of documents (known as publications) to a mass audience.

## Understanding the default folder security patterns

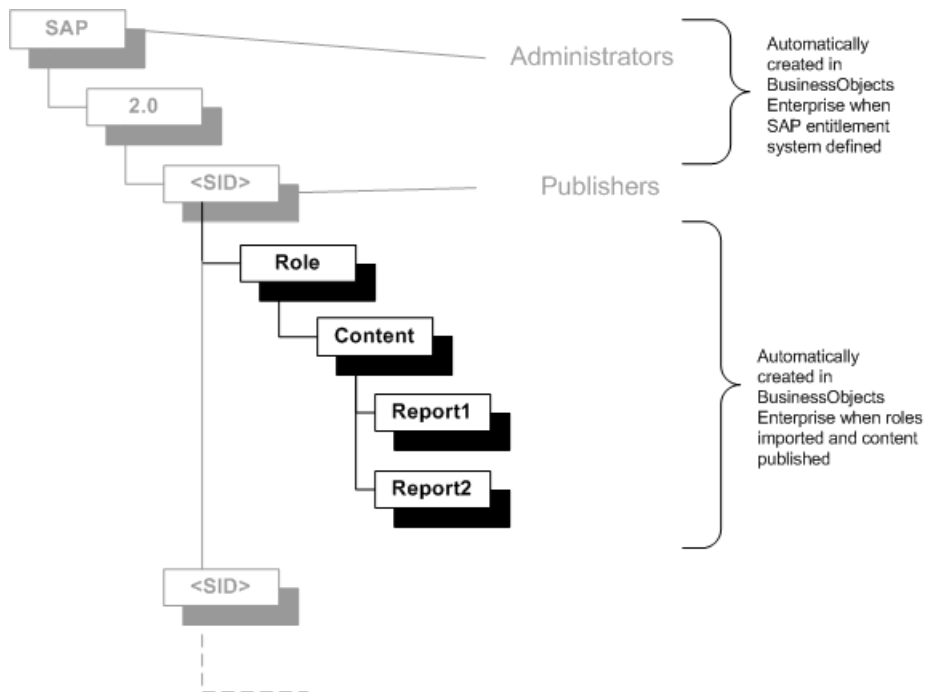
When you publish content to BusinessObjects Enterprise from SAP, BusinessObjects Enterprise automatically creates the remaining hierarchy of roles, folders, and reports. That is, BusinessObjects Enterprise organizes your Crystal reports in folders that are named according to the System ID and Client Number, and according to the name of the role.

The diagram that follows shows how BusinessObjects Enterprise organizes content when you publish two roles from one BW system:

- BusinessObjects Enterprise creates the top-level folders - that is, the SAP, 2.0, and system (*SID*) folders - when you define an entitlement system.

- BusinessObjects Enterprise creates Role folders (imported as groups into BusinessObjects Enterprise) as necessary, when a role is published from BW.
- BusinessObjects Enterprise creates a Content folder for each role that content is published to.
- Security is set on each report object, so users can view only the reports that belong to their roles.

The diagram below displays the basic folder structure that is created.



The administrator is responsible for assigning rights to members of different roles. To do this, the following rights should be assigned in the Content Administration Workbench.

### Content folders

BusinessObjects Enterprise imports a group for each role that is added to the entitlement system as defined in the CMC.

To ensure that suitable default rights are granted to all members of a content-bearing role, grant the appropriate rights in the Content Administration

Workbench for each entitlement system that is defined in BusinessObjects Enterprise:

1. In the Content Administration Workbench, expand **Enterprise system** and then expand **Available systems**.
2. Double-click the system you want.
3. Click the **Layout** tab.
4. Set **Default security policy for reports** to **View**.
5. Set **Default security policy for role folders** to **View On Demand**.
6. Click **OK**.

These settings are reflected in BusinessObjects Enterprise for all content roles. That is, roles that have content published to them. Members of these roles will now be able to view scheduled instances of reports published to other roles and will be able to refresh reports published to roles that they are a member of.

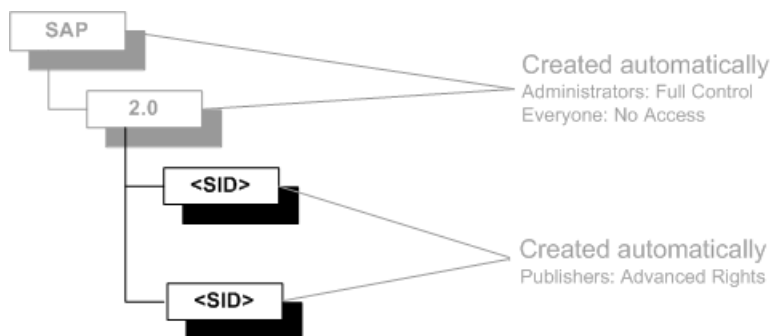
**Note:**

It is strongly recommended that you keep the activities of roles distinct. For example, while it is possible to publish from an administrator role, it is better practice to publish only from publisher roles. Additionally, the function of publishing roles is only to define which users can publish content. Thus, publishing roles should not contain any content; publishers should publish to content bearing roles that are accessible to regular role members.

## Setting up folders and security in BusinessObjects Enterprise

When you define an entitlement system in BusinessObjects Enterprise, BusinessObjects Enterprise creates a logical folder structure to match your SAP system. When you import roles and publish content to BusinessObjects Enterprise, corresponding folders are created. As an administrator, you do not have to create these folders. They are created as a result of you defining an entitlement system in BusinessObjects Enterprise, importing roles into the CMC, and publishing content to BusinessObjects Enterprise.

The diagram below displays the basic folder structure that is created.



Note that you, the administrator, are responsible for assigning the correct rights to these folders:

- SAP top-level folder

Ensure the Everyone group has limited access to the SAP top-level folder.

- System ID folders

Assign the principal Publisher the following rights in the CMC:

- Add objects to folder
- View objects
- Edit objects
- Modify the rights users have to objects
- Delete objects

#### Tip:

To make rights administration easier, you can create a customized Publisher access level that includes these rights, and then grant the principal Publisher this access level on relevant System ID folders. For more information about working with access levels, see the *SAP BusinessObjects Enterprise Administrator's Guide*.

For more information about how to grant principals rights on top-level folders and on objects, see the “Setting Rights” chapter in the *SAP BusinessObjects Enterprise Administrator's Guide*.

#### Note:

After you have set up folders and security in BusinessObjects Enterprise, complete the tasks in [Configuring the BW Publisher](#), and [Configuring publishing in the Content Administration Workbench](#). Once you have completed those tasks, you can publish content to BusinessObjects Enterprise from BW.

## Configuring the BW Publisher

The BW Publisher allows you to publish Crystal reports (.rpt files) individually or in batches from BW to BusinessObjects Enterprise.

On Windows, you can configure the BW Publisher in one of two ways:

- Start the BW Publisher using a service on a BusinessObjects Enterprise machine. The BW Publisher service will start instances of the BW Publisher as required.
- Start the BW Publisher using a local SAP Gateway to create BW Publisher instances.

You must select the configuration method based on the requirements of your site, after considering the advantages and disadvantages of each configuration. Once you have configured the BW Publisher in BusinessObjects Enterprise, you must configure publishing in the Content Administration Workbench.

### Related Topics

- [Selecting your BW Publisher configuration](#)
- [Configuring publishing in the Content Administration Workbench](#)

## Configuring the BW Publisher as a service

This section explains how to enable publishing of reports from BW to BusinessObjects Enterprise, using the BW Publisher as a service, perform the following procedure.

For information on adding system redundancy using multiple BW Publishers, see [Distributing the BW Publisher installation](#).

### Starting the BW Publisher: UNIX

Run the BW Publisher script to create a publisher instance or instances to handle publishing requests. It is recommended that you start one publisher instance.



Once the BW Publisher starts, it establishes a connection with the SAP Gateway Service that you specified when you ran the BusinessObjects XI Integration for SAP Solutions setup program.

### To start the BW Publisher

1. Log on to your UNIX system under the Business Objects user account you created for your BusinessObjects Enterprise installation.
2. Run the following script to start a publisher instance:

```
businessobjects/bwcepub.sh num -aPROGID -gGWHOST -xGWSERVICE
```

where:

- *businessobjects* is the root Business Objects directory where you installed BusinessObjects Enterprise and BusinessObjects XI Integration for SAP Solutions.
- *num* is the number of publisher instances to start.
- *PROGID* is the Program ID of the RFC Destination for the BW Publisher. The Program ID can take any value, but must be 64 characters or fewer, and may not contain spaces. The Program ID is case-sensitive.

Record the exact value you specify here for the Program ID. You will need this value when you configure the RFC destination on your BW system.

- *GWHOST* is the name of your Gateway Host.
- *GWSERVICE* is the port number of the Gateway Service.

### Related Topics

- [Configuring a destination for the BW Publisher service](#)

### To stop the BW Publisher: UNIX

1. Log on to your UNIX system under the Business Objects user account you created for your BusinessObjects Enterprise installation.
2. Type `./bwcepub.sh stop`.

### Starting the BW Publisher: Windows

On Windows, use the Central Configuration Manager (CCM) to start the BW Publisher service. When you start the BW Publisher service it creates a publisher instance to service publishing requests from your BW system. If

the volume of publishing requests increases, the BW Publisher automatically spawns additional publishers to meet the demand.

For more information on the CCM, consult the *SAP BusinessObjects Enterprise Administrator's Guide*.

Once the BW Publisher starts, it establishes a connection with the SAP Gateway Service that you specified when you ran the BusinessObjects XI Integration for SAP Solutions setup program.

### To start the BW Publisher service: Windows

1. Start the Central Configuration Manager (CCM) from the BusinessObjects Enterprise program group.
2. Right-click **BW Publisher Service** and, on the shortcut menu, click **Start**.

### Configuring a destination for the BW Publisher service

To enable the BW Publisher, you must configure an RFC destination on your BW server to communicate with the BW Publisher service. If you have a BW cluster, configure the RFC destination on each server, using the central instance of BW as your Gateway Host in every case.

If you wish to publish to multiple BusinessObjects Enterprise systems from BW, create a separate RFC destination for the BW Publisher service in each BusinessObjects Enterprise system. You must use unique Program IDs for each destination, but the same Gateway host and Gateway service.

### To create the required RFC destination (TCP/IP connection)

1. Execute transaction `SM59`, which allows you to display and maintain RFC destinations.
2. Click **Create** and provide the values described in the following table.

#### Tip:

You cannot view all of these fields until you provide the Connection type. The Connection type must be non-Unicode; otherwise, connection to the BW Publisher will fail.

3. After saving your settings, click **Test connection**.

The connection test attempts to contact your BW Publisher service.

If the RFC destination is properly configured and can communicate with your BW Publisher service, the result is a list showing how long it took to

contact the service on each of four attempts. If the RFC destination cannot contact your BW Publisher service, the result is a connection error.

**Note:**

- The publishing process will not work until the destination is working successfully.
- If you plan to enforce Secure Network Communication (SNC) between SAP and BW Publisher, you must provide your SNC options on the Logon/Security tab for the `CRYSTAL_PUBLISHER` destination. For details about SNC, see [Configuring BusinessObjects Enterprise for server-side trust](#).
- The RFC destination must be created as non-Unicode in the "MDMP/Unicode " tab regardless whether your SAP system is Unicode or non-Unicode.

For more information on RFC destinations and TCP/IP connection types, consult your SAP documentation.

Field	Value
RFC destination	Use a descriptive name.  <b>Note:</b> Do not use the name <code>CRYSTAL_PUBLISHER</code> unless you do not have the Content Administration Workbench. See <a href="#">Configuring publishing in the Content Administration Workbench</a> for details.
Connection type	Type <code>T</code> (for TCP/IP connection) and press Enter.
Description	Type a short description of the destination.

Field	Value
Activation Type	Select "Registered Server Program."
Program ID	<p>Type the descriptive string used to identify the process associated with this destination. You must use the same Program ID that you specified when you started the BW Publisher, when you installed BusinessObjects XI Integration for SAP on your BusinessObjects Enterprise machines. See "Recommended initial installation". See <a href="#">To start the BW Publisher</a>.</p> <p><b>Tip:</b></p> <ul style="list-style-type: none"> <li>• Program ID is case-sensitive.</li> <li>• Program ID should not contain any spaces.</li> </ul>
Gateway host	<p>Type the name of your BW server. If you have a BW cluster, enter the name of the central instance of BW. You must use the same BW server name here that you specified when you installed BusinessObjects XI Integration for SAP on your BusinessObjects Enterprise machines.</p> <p>For details, see "Recommended initial installation" <a href="#">Publishing Reports</a>.</p>

Field	Value
Gateway service	<p>Type the port number that the Gateway host is listening on. For example, type <code>sapgw##</code>, where <code>##</code> represents the instance number of your SAP Gateway. Often, the instance number is <code>00</code>, and the value for this field is <code>sapgw00</code>.</p> <p>If you have defined a symbolic name for this port (such as <code>sapgw##</code>), you may use this symbolic name instead.</p> <p>You must use the same port number or symbolic name here that you specified when you installed BusinessObjects XI Integration for SAP on your BusinessObjects Enterprise machines.</p> <p>For details, see "Recommended initial installation" <a href="#">Distributing information over the Web</a>.</p>
Other	<p>Type <code>-LSNClibrary_path-SS-NCpublisher_process</code>. Here <code>SNClibrary_path</code> represents the file directory in which the SNC library is located, and <code>SNCpublisher_process</code> represents the name of the SNC Publisher process.</p>

## Configuring the BW Publisher with a local SAP Gateway

### Note:

Do not use this configuration if “BusinessObjects Enterprise” is installed on UNIX. Using this method on UNIX could result in unpredictable system behavior.

To enable publishing of reports from BW to BusinessObjects Enterprise, using a local SAP Gateway, perform the following procedure:

- *Installing a local SAP Gateway.*
- *Configuring a destination for the BW Publisher.*

### Installing a local SAP Gateway

A local SAP Gateway must be installed on the machine where you installed the BW Publisher. (See "Recommended initial installation".) It is recommended that an SAP BASIS administrator perform the installation of one of these SAP Gateways.

For up-to-date instructions on installing a local SAP Gateway, see the SAP installation instructions included on your SAP Presentation CD.

For a detailed list of tested environments for BusinessObjects XI Integration for SAP, consult the `platforms_EN.txt` file included with your product distribution. This file includes specific version and Service Pack requirements for application servers, operating systems, SAP components, etc.

After you have installed the SAP Gateway, use `regedit` to verify the `TMP` and `TEMP` registry entries under the `HKEY_CURRENT_USER\Environment` subkey. Both registry entries should hold the same string value, which must be a valid absolute directory path. If either entry's value contains the `%USERPROFILE%` variable, replace it with an absolute directory path. Typically, both registry entries are set to `C:\WINDOWS\TEMP`.

## Configuring a destination for the BW Publisher

To enable the BW Publisher, you must configure an RFC destination to provide BW with the location of the machine where you have installed the local SAP Gateway and the BW Publisher.

### To create the required RFC destination (TCP/IP connection)

1. Execute transaction **SM59**, which allows you to display and maintain RFC destinations.

Here you will create a TCP/IP connection.

2. Click **Create** and provide the values described in the following table.

**Tip:**

You cannot view all of these fields until you provide the Connection type.

3. After saving your settings, click **Test connection**.

The connection test attempts to contact your BW Publisher on the local SAP Gateway.

If the RFC destination is properly configured and can communicate with your BW Publisher, the result is a list showing how long it took to contact the Gateway on each of four attempts. If the RFC destination cannot contact your BW Publisher Service, a connection error occurs.

**Note:**

- The publishing process will not work until the destination is working successfully.
- If you plan to enforce Secure Network Communication (SNC) between SAP and BusinessObjects Enterprise, you must provide your SNC options on the Logon/Security tab for the `CRYSTAL_PUBLISHER` destination. For details about SNC, refer to the *"Configuring SAP Server-Side Trust"* section in this guide.

For more information on RFC destinations and TCP/IP connection types, consult your SAP documentation.

Field (Windows)	Value (Windows)
RFC destination	<p>Use a descriptive name.</p> <p><b>Note:</b> Do not use the name CRYSTAL_PUBLISHER unless you do not have the Content Administration Workbench. See <a href="#">Configuring publishing in the Content Administration Workbench</a> for details.</p>
Connection type	Type T (for TCP/IP connection) and press Enter.
Description	Type a short description of the destination.
Activation Type	Select "Start on Explicit Host."
Program	<p>Type the absolute path to the BW Publisher program (bwcepub.exe). If you installed it in the default directory on Windows, the value is:</p> <p>C:\Progra~1\Busine~1\Business~1.0\win32_x86\bwcepub.exe</p> <p><b>Tip:</b> Use the MS-DOS short path name, as shown here.</p>



Field (Windows)	Value (Windows)
Target host	Type the fully qualified domain name or IP address of the machine where you installed the BW Publisher. For example: <code>ceserver01.privatedomain.com</code>
Gateway host	Type the name of the machine where you installed the SAP Gateway. This should be the same machine as the "Target host." For example: <code>boserver01</code>
Gateway service	Type <code>sapgw##</code> , where ## represents the instance number of your SAP Gateway. Typically, the instance number is 00, and the value for this field is <code>sapgw00</code>

## Configuring publishing in the Content Administration Workbench

Once you have set up SAP authentication, and have configured the BW Publisher, perform the functions outlined in this section to enable publishing. These instructions will allow you to:

- Set appropriate authorizations for different users of the Content Administration Workbench.
- Set up connections to the BusinessObjects Enterprise systems where content is published.
- Define which roles can publish to each BusinessObjects Enterprise system.

- Publish content from BW to BusinessObjects Enterprise.

## Users who can access the Content Administration Workbench

There are three types of users who may access the Content Administration Workbench:

- Content consumers, who belong to content-bearing roles and who can view reports. They do not have authorization to do anything other than view reports.
- BusinessObjects Enterprise content publishers, who can view, publish, modify, and (optionally) delete reports from BW.
- BusinessObjects Enterprise administrators, who are able to perform all tasks within Content Administration Workbench. These tasks include defining BusinessObjects Enterprise systems, publishing reports, and performing report maintenance.

## Creating roles in BW for designated content publishers

When you are configuring BW for integration with BusinessObjects Enterprise, assess whether or not your current role structure allows you to quickly designate particular BW users as BusinessObjects Enterprise content publishers or system administrators.

It is suggested that you label any new roles you create in a descriptive manner. Examples of descriptive role names would include `BOE_CONTENT_PUBLISHERS` and `BOE_SYSTEM_ADMINISTRATORS`.

### Tip:

In BusinessObjects Enterprise XI you can assign an administrative user either full system administration rights or a subset of those rights. For more information, consult “Controlling Administrative Access” in the *SAP BusinessObjects Enterprise Administrator's Guide*.

To modify the rights that these new roles (or any of your existing roles) are granted in BusinessObjects Enterprise, you must first set up SAP

Authentication and import the roles. You can then modify the rights of each imported role through the Central Management Console in BusinessObjects Enterprise.

For details on creating roles, see your SAP documentation. For more information on the use of roles in administering content, see the following sections:

- [Importing SAP roles to BusinessObjects Enterprise.](#)
- [Setting up folders and security in BusinessObjects Enterprise.](#)
- [Understanding the default folder security patterns.](#)

## Configuring access to the Content Administration Workbench

For each type of user that can access the Content Administration Workbench, you must apply the appropriate set of authorizations within BW. The authorizations are listed in the following tables.

Table 6-3: Authorizations for administrative users

Authorization object	Field	Values
S_RFC S_TCODE	RFC_TYPE	FUGR
	RFC_NAME	/CRYSTAL/CE_SYNCH, SH3A, SUNI
	ACTVT	Execute (16)
	TCD	/CRYSTAL/RPTADMIN, RSCR_MAINT_PUBLISH

Authorization object	Field	Values
S_TABU_CLI	CLIIDMAINT	X
S_TABU_DIS	ACTVT	Change, Display (02, 03)
	DICBERCLS	&NC&
	JOBACTION	DELE, RELE
	JOBGROUP	' '
S_RS_ADMWB	ACTVT	Execute (16)
	RSADMWBOBJ	WORKBENCH
	ACTVT	Create new, Change, Display, Delete (01, 02, 03, 06)
ZCNTADMJOB	ACTVT	Create new, Delete (01, 06)
ZCNTADMRPT	ACTVT	Display, Delete, Activate, Maintain, Check (03, 06, 07, 23, 39)

Table 6-4: Authorizations for content publishers

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	/CRYSTAL/CE_SYNCH, SH3A, SUNI
	ACTVT	Execute (16)
	TCD	/CRYSTAL/RPTADMIN
S_BTCH_JOB	JOBACTION	DELE, RELE
	JOBGROUP	' '
	ACTVT	Execute (16)
	RSADMWBOBJ	WORKBENCH
ZCNTADMCES	ACTVT	Display (03)
ZCNTADMJOB	ACTVT	(New, Delete) 01, 06
ZCNTADMRPT	ACTVT	Display, Activate, Main- tain, Check (03, 07, 23, 39) Delete (optional) (06) Edit (optional) (02)

Granting content publishers the right to delete reports in the BW Content Administration Workbench is optional. However, be aware that deleting a report in BW also deletes the report in BusinessObjects Enterprise. If publishers do not have sufficient rights to delete reports in BusinessObjects Enterprise, an error results. See [Setting up folders and security in BusinessObjects Enterprise](#) for information on granting rights in BusinessObjects Enterprise.

#### Authorizations for content consumers

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SH3A, SUNI
	ACTVT	Execute (16)
	TCD	/CRYSTAL/RPTADMIN
S_RS_ADMWB	ACTVT	Execute (16)
	RSADMWBOBJ	WORKBENCH
	ACTVT	Display (03)

## Defining a BusinessObjects Enterprise system

You must create a system definition within the Content Administration Workbench for each BusinessObjects Enterprise system to which you want to publish reports.

## To add a BusinessObjects Enterprise system

1. Execute the transaction `/crystal/rptadmin` to access the Content Administration Workbench.
2. From the **Operations** pane, select **Enterprise System**.
3. Double-click **Add new system**.
4. On the **System** tab, enter the following values:
  - Type a descriptive name in the **Alias** field. Avoid using spaces or special characters, as these characters need special treatment when the alias name is used while configuring Enterprise Portals.
  - Type the name of the machine that is running your BusinessObjects Enterprise CMS. If you configured your CMS to listen on a port other than the default, type `CMSNAME : PORT`
  - Select **Default system** if you want to publish reports to this system from any role that has not been explicitly assigned to a BusinessObjects Enterprise system. Only one BusinessObjects Enterprise system can be the default.

In the list of all available systems, the default system is indicated with a green checkmark.
5. Click **Save**.
6. On the **RFC Destinations** tab, add each RFC destination that is associated with this BusinessObjects Enterprise system. To add a destination, click the **Insert Row** button. In the list that appears, double-click the name of the RFC destination.

### Note:

A BusinessObjects Enterprise system may have multiple destinations to add system redundancy. See [Distributing the BW Publisher installation](#) for more information.

7. Next, test the destination. Select the destination you just added by clicking the gray box to the left of its name.
8. Click **Verify CE definition**.

This test verifies that BW can contact the specified BW Publisher, and can log on to this BusinessObjects Enterprise system using the Crystal entitlement user account.

9. On the **HTTP** tab, enter the following values:

- **Protocol**

Type http (unless the web server that is connected to BusinessObjects Enterprise is configured to use https).

- **Web server host and port**

Type the fully qualified domain name or IP address of the web server that hosts your BusinessObjects EnterpriseInfoView. For a installation that uses a Java application server, include the port number. For example:

```
boserver01.businessobjects.com:8080
```

- **Path**

Type:

```
SAP
```

This path is essentially the virtual path that your web server uses when referring to the `sap` subfolder of your BusinessObjects Enterprise web content. Provide an alternate value only if you have customized your web environment and the location of the BusinessObjects Enterprise web content files.

Do not include a forward slash at the beginning or at the end of this entry.

- **Viewer application**

Type the name of your viewer application. Type `reportview.do` to use the default viewer for BusinessObjects Enterprise that use the Java version of InfoView. If BusinessObjects Enterprise was installed on Windows using the default ASP.NET configuration, type `iviews/report_view.aspx` to use the default browser.

10. On the **Languages** tab, select the languages of reports that will be published to this BusinessObjects Enterprise system.
11. Use the **Roles** tab to add the content-bearing roles that you want to associate with this BusinessObjects Enterprise system. See [Importing SAP roles to BusinessObjects Enterprise](#) for more information.
12. Click the **Insert Row** button.



A list of roles available to add to this BusinessObjects Enterprise system is displayed.

**Note:**

Each role can publish to only one BusinessObjects Enterprise system. If the roles that you want to add to this BusinessObjects Enterprise are not displayed in the list, click **Cancel** to return to the **Roles** tab. Then click **Reassign Roles**.

13. Select the roles that you want to publish to this BusinessObjects Enterprise system, and click the **Ok** button.
14. Next, set the default security settings for content published to this BusinessObjects Enterprise system. Click the **Layout** tab, and select the security settings that are used by default for reports and roles folders. Consult your *SAP BusinessObjects Enterprise Administrator's Guide* for more information about these security settings.

**Note:**

- A folder is created automatically in BusinessObjects Enterprise for each role published to that system. This folder contains shortcuts to the reports published under that role.
  - Once you have configured a BusinessObjects Enterprise system, changing the default security levels here will not affect the security levels of published role folders or reports. To change the default security levels for all roles and content published to BusinessObjects Enterprise, delete the roles folders and shortcuts in BusinessObjects Enterprise. (This will not delete the actual reports.) Then change the security settings here, and republish the roles and reports.
15. Click the **Ok** button at the bottom to save your settings and create the BusinessObjects Enterprise system in the Content Administration Workbench.

You are now able to publish reports to BusinessObjects Enterprise from BW.

## Publishing reports using the Content Administration Workbench

After a report has been saved to BW, you can publish it using the Content Administration Workbench. You can use the Content Administration Workbench to publish individual reports, or you can publish all reports saved

to a particular role. Only a user who has the authorizations granted to a Crystal content publisher (see [Creating and applying authorizations](#)) can use the Content Administration Workbench to publish and maintain reports.

## Publishing roles or reports

1. Execute the transaction `/crystal/rptadmin` to access the Content Administration Workbench.
2. From the **Operations** pane, select **Publish reports**.
3. To find content saved to your BW system, double-click **Select reports and roles to publish**.

A dialog box designed to help you filter the available roles and reports appears.

4. From the **BusinessObjects Enterprise System** list, select the BusinessObjects Enterprise system or systems containing content that you want to display.

### Note:

The **BusinessObjects Enterprise System** list contains all available systems defined on this BW system.

5. Next, filter your results to limit the number of reports and roles that will be displayed. Use these options:

- **Object version**

Selecting "A: active" displays all reports that can be published.

Selecting the blank option displays all reports. (The remaining options are SAP reserved terms.)

- **Object status**

Select "ACT Active, executable" to display only reports that have been published. Select "INA Inactive, not executable" to display only reports which have not been published. Leave the field blank to display all reports. (The remaining options are SAP reserved terms.)

- **Role filter**

If you type text in this box, only the roles that match what you type here are displayed. Use \* as a wildcard character. For example, to display all roles beginning with the letter d, type "d\*".

- **Report description**

If you type text in this box, only the reports whose descriptions match what you type here are displayed. Use \* as a wildcard character to match any number of characters. Use + as a wildcard to match 0 or 1 characters. For example, to display all reports whose description contains the word revenue, type \*revenue\*.

**6. Click OK.**

The list of reports that meet your criteria appears in the right-hand panel.

The reports are arranged in a hierarchy: BusinessObjects Enterprise system > Roles on that system > Reports saved to the role.

Each item in the hierarchy is labeled with a red, yellow, or green dot. Items higher in the hierarchy reflect the status of the items that they contain, with the least favorable condition percolated to the top of the hierarchy. For example, if one report in a role is yellow (active), but all of the rest are green (published), then the role shows as yellow (active).

- **Green:** The item is fully published. If the item is a BusinessObjects Enterprise system or a role, all reports in that item are published.
- **Yellow:** The item is active, but not published. If the item is a report, the item is available for publishing. If the item is a role or a BusinessObjects Enterprise system, then all content is active and at least one item that the role or system contains has not been published.
- **Red:** The item is SAP content, and is not available for publishing using the Content Administration Workbench. Content is not available for publishing until it has been activated using the BW Administration Workbench.

**7. Select the reports that you want to publish.**

To publish all of the reports in a role, select the role. To publish all roles on a BusinessObjects Enterprise system, select the system.

**Note:**

When you select a role (or a system), all reports contained in that role (or system) are selected. To clear this selection, clear the role (or system) checkbox, and then click Refresh.

**8. Click Publish.**

**Note:**

Reports published in the background are processed as system resources become available. To use this option, click **In background** instead of **Publish**. See [Scheduling background publishing](#) for details.

9. Click **Refresh** to update the display of the status of BusinessObjects Enterprise systems, roles, and reports in the Content Administration Workbench.

**Tip:**

To view a report, right-click the report and select **View**. To see which queries are used by the report, right-click the report and select **Used Queries**.

**Note:**

After you have published a report to BusinessObjects Enterprise, if you want to overwrite the report you published, click the **Overwrite** button.

## Scheduling background publishing

Publishing reports in the background, either immediately or as a scheduled job, conserves system resources. It is recommended that you publish reports in the background to improve system responsiveness.

Publishing reports periodically, as scheduled jobs, synchronizes the report information between BW and your BusinessObjects Enterprise system. It is recommended that you schedule all reports (or roles containing these reports). You can also manually synchronize roles and reports using the Update status option of the Report Maintenance operation. See [Updating the status of reports](#) for details.

### To publish a report immediately

1. Use the Content Administration Workbench to find the reports or roles that you want to publish, as described in [Publishing roles or reports](#).
2. In the Content panel, select the roles or reports to publish.

**Note:**

Only active (green or yellow) reports or roles are available to be published.

3. Click **In background** to publish the selected items as a background process.

The “Define Background Job” transaction appears.

4. To publish the item immediately, click **Start Condition**, and then click **Immediate** and save the job.

The job appears under **Scheduled jobs** in the **Operations** tree.

A user with administrative privileges may need to release this job (using transaction SM37) before it is published.

### To publish a report as a scheduled job

1. Use the Content Administration Workbench to find the reports or roles that you want to publish, as described in [Publishing roles or reports](#).
2. In the Content panel, select the roles or reports to publish.

#### Note:

Only active (yellow) reports or roles are available to be published.

3. Click **In background** to publish the selected items as a background process.

The “Define Background Job” transaction appears.

4. To publish the item at a scheduled time, click **Start Condition**.
5. Click **Date/Time** and specify when the job should start.
6. Click **Periodic job**, and then **Period values**.

Use the Period Values dialog to specify how often the job should run.

7. Click **Save** to save the period values, and then click **Save** again to save the job.

The job appears under **Scheduled jobs** in the **Operations** tree.

A user with administrative privileges may need to release this job (using transaction SM37) before it is published.

### Updating system information for published reports

The BW Publisher uses the SAP system information entered here to update the data source of published reports. You can choose to use the local BW application server, or the central BW instance if you prefer a load balancing configuration.

### To update system information

1. Execute the transaction `/crystal/rptadmin` to access the Content Administration Workbench.
2. From the **Operations** pane, select **Publish reports**.
3. Under **SAP system settings**, double-click **Set BW source parameters**.
4. To change an existing BW system, click **Display ->Change**, and then update the information about the listed system.
5. To add a new BW system (or a load-balanced system), first select any existing entries, and click **Delete**. Then click **New Entries**, and add information about the new system.
6. Click **Save**.

## Maintaining reports

Report maintenance tasks include synchronizing information about reports between BusinessObjects Enterprise and BW (Update status), deleting unwanted reports (Delete reports), and updating reports migrated from previous versions of BusinessObjects Enterprise (Post-migration).

### Updating the status of reports

If you make a change to a published report on a BusinessObjects Enterprise system (such as changing which role a report is published to), the change is not reflected in BW until you synchronize BusinessObjects Enterprise and BW. You can schedule a publishing job to periodically synchronize BusinessObjects Enterprise and BW (see [Scheduling background publishing](#)), or you can manually update the status of the report using the Report Maintenance tool.

### To update reports

1. Execute the transaction `/crystal/rptadmin` to access the Content Administration Workbench.
2. Under **Report Maintenance**, double-click **Update Status**.
3. Use the dialog that appears to filter the list of displayed BusinessObjects Enterprise systems, roles, and reports, as described in [Publishing roles or reports](#).

4. Select the reports you want to update from the displayed list.

To select all reports and roles on a BusinessObjects Enterprise system, select the system.

5. Click **Version Check**.

BW connects to the BusinessObjects Enterprise systems containing the reports you have indicated, to synchronize information. If BW cannot contact a BusinessObjects Enterprise system, it returns an error message. You must correct the problem before you can update the status of reports on that system in BW.

## Deleting reports

Deleting a published report from BW using the Content Administration Workbench also deletes the report from BusinessObjects Enterprise. Only users who have been granted the authorizations necessary to delete reports on both BW and the BusinessObjects Enterprise system can remove reports.

### Note:

If a user has rights to delete a report on BW, but not on the BusinessObjects Enterprise system where that report is published, you may encounter an error.

## To delete reports

1. Execute the transaction `/crystal/rptadmin` to access the Content Administration Workbench.
2. Under **Report Maintenance**, double-click **Delete reports**.
3. Use the dialog that appears to filter the list of displayed BusinessObjects Enterprise systems, roles, and reports, as described in [Publishing roles or reports](#).
4. Select the reports you want to delete from the displayed list.

To select all reports and roles on a BusinessObjects Enterprise system, select the system.

### Note:

You cannot delete reports using the Content Administration Workbench if their status dot is red. These reports are SAP content.

5. Click **Delete reports**.

BW connects to the BusinessObjects Enterprise systems containing the reports you have indicated, to delete the reports. If BW cannot contact a BusinessObjects Enterprise system, it returns an error message. You must correct the problem before you can delete these reports.

## Configuring the SAP http request handler

To enable viewing of reports in BW, you must configure BW to use the http request handler that is included as part of the Content Administration Workbench. Then, when a BW user opens a Crystal report from within the SAPGUI, BW is able to route the viewing request over the Web appropriately.

Use the transaction SICF to access the list of virtual hosts and services active on your BW system. Create a new node named `ce_url` under BW in the `default_host` hierarchy and add `/CRYSTAL/CL_BW_HTTP_HANDLER` to the handler list. You may have to manually activate this service after creating it.





# Managing the SAP Enterprise Portal



# 7

chapter



## SAP Enterprise Portal overview

SAP Enterprise Portal provides a single point of access to information, enterprise applications, and services. This scalable portal provides you with the tools to manage your information, to analyze it, and to share and collaborate this information with others.

With BusinessObjects XI Integration for SAP Solutions, users can include and view Crystal reports from within the SAP Enterprise Portal. For example, users can choose to create a new iView inside of the portal and include a report in this iView.

The portal provides administrators with tools to manage and monitor the portal. Using iViews, administrators use the administration tools in the portal to configure the BusinessObjects Enterprise backend. Administrators can also include and incorporate multiple BusinessObjects Enterprise systems into one SAP Enterprise Portal. For more information on configuring BusinessObjects Enterprise, refer to [Configuring publishing in the Content Administration Workbench](#). For information on SAP Enterprise Portal, refer to your SAP documentation.

### Content access points

The following different access points for content are provided with BusinessObjects XI Integration for SAP Solutions:

- Sample iViews
- URL iViews
- BusinessObjects Enterprise Knowledge Management and Collaboration Solution (CMC)

## Single sign-on requirements

To facilitate access and administration, you need to enable single sign-on between the SAP Enterprise Portal and the BusinessObjects Enterprise systems incorporated in the portal.

For single sign-on to work:

- The Enterprise Portal and the application server used by BusinessObjects Enterprise must reside in the same domain. This requirement enables token-based logon to use single sign-on.
- User roles from the SAP entitlement systems must be imported into the BusinessObjects Enterprise backend. For more information see [Importing SAP roles to BusinessObjects Enterprise](#).
- BusinessObjects Enterprise InfoView must be configured to support single sign-on. If you are using BusinessObjects Enterprise Java InfoView you must modify the `web.xml` file which is located by default in the following directory:

```
<INSTALLDIR>\BusinessObjects Enterprise
12.0\warfiles\WebApps\InfoViewApp\WEB-INF
```

For BusinessObjects Enterprise .NET InfoView, you must modify the `web.config` file which is located by default in the following directory:

```
<INSTALLDIR>\BusinessObjects Enterprise 12.0\Web
Content\InfoViewApp\InfoViewApp
```

You must modify the parameters to specify the values listed in the table below.

Parameter name	Required value
authentication.default	secSAPR3
siteminder.enabled	false
sso.enabled	true

## Using sample iViews

The BusinessObjects XI Integration for SAP Solutions install includes sample iViews. The sample iViews can be used to view Crystal Report Alerts or to view reports by selecting their corresponding thumbnail. These files are by default located in the following directory:

```
<INSTALLDIR>\BusinessObjects\BusinessObjects Enterprise
12.0\Web Content\Enterprise 12\SAP\iviews\import\ep
```

This folder contains all the files that are needed for you to import sample iViews to your portal. The subfolder `ep` contains files for SAP Enterprise

Portal (.epa files). Within each of these subfolders are additional subfolders that contain the corresponding files for JSP.

These samples include three sample iViews:

- Alert iView

Alert iViews displays all alerts for a specific user.

- iView Template

iView template is a template that allows users to create new iViews as a type of BusinessObjects Enterprise Report.

- Thumbnail iView

Thumbnail iViews displays reports from BusinessObjects Enterprise as a thumbnail.

You can import these files through the Portal Administration portion of your SAP Enterprise Portal. For more information on importing, see “Importing iViews for Enterprise Portal”.

**Note:**

- After importing the .epa files, you need to change the system setting for these iViews. By default, the system is set to "SAP\_BW".
- You also need to configure the BusinessObjects Enterprise server parameters for your system in the Portal System Landscape.

## iView Template

BusinessObjects Enterprise iView templates provide templates for users to create new Crystal Report iViews. Before create a new iView, you need to upload the master iView .par file.

The master iView .par file is named `com.businessobjects.pct.masteriview.par`, and is located the same directory as the sample iView `com.businessobjects.pct.sap_pik.epa` file.

The iView template is available in the SAP Enterprise Portal in the list of iView templates when you create a new iView. The template is designed to report Crystal Reports only.

## Alert iView

This iView presents all triggered alerts in a table. The table contains the report name, alert message, and the date when the alert was triggered. The alert message provides a link to the report instance that triggered the alert.

You can specify the following parameters for this iView:

- **SAP\_SYSID:** The ID for the SAP system that's used for the Alert iView (for example, `DEB`).
- **SAP\_CLIENT:** The client of the SAP system that's used for the Alert iView (for example, `800`).

These parameters are automatically filled by SAP Enterprise Portal.

## Thumbnail iView

This iView displays all reports in a thumbnail format (as a report preview). When the user moves the mouse over the report preview, a brief description of the report appears. The user can view a report by clicking the thumbnail.

### Note:

When you save a Crystal report, select the Save Preview Picture option (on the Reporting tab of the Options dialog box). Selecting this option ensures that the report is saved with a thumbnail image which is used by the Thumbnail iView.

You can specify the following parameters for this iView:

- **SAP\_SYSID:** The ID for the SAP system that's used for the Thumbnail iView (for example, `DEB`).
- **SAP\_CLIENT:** The client of the SAP system that's used for the Thumbnail iView (for example, `800`).

These parameters are automatically filled by SAP Enterprise Portal.

## How to configure imported content

After you have imported the import files for the iViews, you will find the folder (SAP BusinessObjects Enterprise Integrations) in the Portal Content Directory. The delivered iViews are configured to work with the system alias "SAP\_BW". Either you can configure a new alias inside the SAP Portal landscape to reflect this system alias "SAP\_BW" or you can change the iViews to make use of another system alias.

After assigning the correct system alias to these iViews you need to proceed with the following steps:

- Configure the BusinessObjects Enterprise server for the system.
- Create a page containing these iViews.
- Create a role containing the page.
- Assign the role to a user.
- Include the role into the navigation inside the portal.

In addition, specify the Application Parameter for each iView. For this property, enter `"cmsname"=[cms]` for the fully qualified server name.

For more information on creating and setting roles, refer to your SAP documentation.

## Importing SAP Enterprise Portal business packages

In order to use the Sample iViews, you need to import specific business packages from BusinessObjects Enterprise to the Enterprise Portal. There are two methods to do this.

### To import business packages from SAP Enterprise Portal

1. In SAP Enterprise Portal, while in the administrator role, select the **System Administration** tab.

2. Click **Transport** and then click **Import**.
3. Specify where the files to be imported are found.
  - Server: Select this option if the files are on the server.
  - Client: Select this option if the files are on your local client.

**Note:**

By default the Java sample iViews is located in the following directory:

```
<INSTALLDIR>\BusinessObjects Enterprise 12.0\Web  
Content\Enterprise12\SAP\iviews\import\ep\jsp
```

The .NET sample iViews are located in the following directory:

```
<INSTALLDIR>\BusinessObjects Enterprise 12.0\Web  
Content\Enterprise12\SAP\iviews\import\ep\aspx
```

4. Click **Browse** and navigate to the .epa file that you want to import.
5. Click **Select** to choose the package that you want to import.

The package is automatically unpacked and the individual objects are listed in the Object Preview.

6. On the Content to be Overwritten list, specify whether you want to overwrite existing content or not by clicking **All** or **None**.
  - None: Content objects that already exist in the portal (for example, roles, worksets, and so on) are not overwritten.
  - All: All existing content objects are overwritten.
7. Click **Import** to begin importing the file.

A new screen appears showing you the status of the import. You can stop the import at any time by clicking Cancel Import. The status of the import is updated automatically until the import has finished. When the import is complete, any error messages that occurred are listed in the Details of Import Status table. There is a link for each error that you can use to navigate directly to an explanation of the error.

## To import BusinessObjects Enterprise master iView par file

1. Logon to SAP Enterprise Portal as an administrator, and select the **System Administration** tab.
2. Click **Support**, and in the **Support Desk**, click **Portal Runtime**.
3. In the “Portal Anywhere” table, click **Administration Console**.
4. Click **Browse**, and navigate to the master iView `com.businessobjects.pct.masteriview.par` file for the BusinessObjects Enterprise iView template that you want to import.

By default the file is located in the following directory `C:\Program Files\Business Objects\BusinessObjects Enterprise 12.0\Web Content\Enterprise12\SAP\iviews\import\ep`

5. Click **Upload** to choose the package that you want to upload.

## Specific SAP NetWeaver 7.3 considerations

SAP NetWeaver 7.3 does not support par files - the usual format by which SAP BusinessObjects iViews are distributed. However by using a tool provided by SAP NetWeaver 7.3 - the PAR Migration tool- it is possible to convert par files into Enterprise Archive - `.ear` - files.

### Using the PAR Migration Tool

In the current SAP NetWeaver version, PAR (Portal Application Archive) files are no longer supported. When upgrading portal applications from SAP NetWeaver 7.0 to the current version, you need to migrate `.par` files to `.war` files. The `.war` files are then automatically packaged into `.ear` files. For more information, consult your NetWeaver 7.3 documentation.

The PAR Migration Tool is a wizard that enables you to migrate standalone `.par` files, as well as `.par` files contained in `.sca` and `.sda` files. You can simultaneously migrate multiple applications.

The PAR Migration Tool provides the following options for selecting the files to migrate:

- Browse and upload individual files



- Upload all the files from a specific folder on the local server
- Upload files from imported transport packages.

**Note:**

The import process cannot import `.par`, `.sda`, or `.sca` files containing PAR files, because as mentioned earlier, this file type is no longer supported. When importing a transport package, the files that cannot be imported must be saved to the local file system. The PAR Migration Tool wizard enables you to view, select and then migrate these files to a supported format. After migration is complete you can download the files.

### To migrate PAR files for NetWeaver 7.3

1. In the SAP NetWeaver 7.3 Enterprise Portal, navigate to **System Administration Support**.
2. Select the **PAR Migration Tool**.  
 The PAR migration Tool wizard is uploaded and its initial screen is displayed.
3. Upload files to the "Available Files" list using any of the following methods:
  - Upload files from imported transport packages.
  - Browse for and upload individual files.
  - Specify the path of a local folder from which to upload the files.
4. Select and move the files you want to migrate to the **Selected Files** list.
5. Click **Next**.  
 The selected files are migrated and displayed in the **Migrated Files** list.
6. Select the files to download, and then click either **Download** or **Download All**.  
 The files are download to the specified directory.

The files can now be deployed on the portal.

Once the files are deployed you can run the iView applications. For more information on deploying `ear` files consult your NetWeaver 7.3 documentation.

## To deploy ear files to the NetWeaver 7.3 Enterprise Portal

After migrating `com.businessobjects.pct.masteriview.ear` file, it must be deployed to the NetWeaver portal using a shell script that is shipped together with the portal. To locate the required P4 port of the NetWeaver Portal, can do one of the following:

- Add a “4” to the port number of the portal application server. For example, use 502004 if the portal application server port number is 50200.
- Access the SAP System Information page at `http://<Portal Hostname>:<port>/sap/monitoring/SystemInfo`

**1.** Launch a command-line prompt to the following directory:

```
<INSTALLEDIR>/usr/sap/<SID>/<Instance_Number>/j2ee/deployment/scripts
```

**2.** Execute the following command:

```
deploy <user>:<password>@<host>:<port> <archive> [-no_start]
```

the table below briefly explains the arguments above:

Arguments	Description
user	The user executing the command. This user must have administrative privileges.
password	The password associated with the user executing the command.
host	The target AS Java host.
port	The target P4 port number.
archive	The path to the archive.
no_start	Specifies not to start the modules once deployed.

**Example:**

```
J2EE_ADMIN:<pass123>@myhost:50804 EJBs/OurEJB.jar -no_start
```

## Configuring the BusinessObjects Enterprise server entry point

Before you use any iViews, you need to configure your BusinessObjects Enterprise server. Using SAP Enterprise Portal, you need to specify the host name and the path for your BusinessObjects Enterprise server.

### To configure the BusinessObjects Enterprise system in SAP NetWeaver

1. From the top-level navigation bar, choose **System Administration**; then choose **System Configuration**.
2. From the Detailed Navigation iView, choose **System Landscape**.
3. In the **Portal Catalog**, expand **Portal Content**.
4. In the folder containing the systems, right-click a system and choose **Open**, and then choose **Object**.
5. In the System Landscape Editor, from the **Edit** list, select **Crystal Enterprise Server**.
6. In the BusinessObjects Enterprise Editor, enter the following parameters:

- Host Name of Crystal Enterprise Server:

Here you need to enter the BusinessObjects Enterprise server as fully qualified host name (including the port).

For example: BusinessObjects001.business.net:1080

- Path of BusinessObjects Enterprise Server:

Here you need to enter the path to the SAP web application you want to use for this system.

For example: /SAP

**Note:**

This path starts with a "/" but does not end with a "/".

- Protocol:

The protocol which gets used by the viewer applications.

All these settings function as a template (with the selected settings) for all iViews running against the system. Thus, you can have different settings for each system.

Therefore, you can have the following:

- Different BusinessObjects Enterprise server per system.
- Different viewer applications per system.

## To configure the BusinessObjects Enterprise system in NetWeaver 7.3

The required EAR files for BusinessObjects Enterprise must be deployed on the Enterprise Portal. For more information consult your NetWeaver 7.3 documentation.

Use the procedure below to configure the Enterprise Portal landscape for BusinessObjects Enterprise in NetWeaver 7.3.

1. In the Enterprise Portal, go to **System Administration > System Configuration > System Landscape**.
2. Expand the "Portal Content" tree structure and create a new folder.
3. In the new folder, right-click **New > System**.
4. Select "'SAP system using dedicated application server'" from **Available Templates** and then click **Next**.
5. Specify the following System Properties and then click **Next**:
  - System Name
  - System ID (optional)
  - System ID Prefix (optional): for example com.sapbusinessobjectsThe "Defined Aliases" page is displayed.
6. Specify the alias for the system being configured and click **Add > Next**.  
The alias specified will be used by other objects to refer to the system. The alias can be identical to the System Name or System ID specified in the previous step.  
The "Template Properties" page is displayed.
7. Specify values for the following properties:  
Under the "Connector" category:

- Application Host
- Gateway Host
- Gateway Service (optional)
- Logical System Name
- SAP Client
- SAP System ID
- SAP System Number
- System Type: SAP\_BW

Under the "User Management" category:

- Logon Method: SAPLOGONTICKET

Uncheck the **Run connection test after click Next** checkbox if you do not want to test SSO connectivity to the SAP entitlement system.

8. Click **Finish**.
9. On the new system object you have created, click **Properties > All > Show Category > Crystal Enterprise Server > Modify Properties**.
10. Specify the following:
  - Hostname of Crystal Enterprise Server - for example <hostname>:8080
  - Path of Crystal Enterprise Server
  - Protocol of Crystal Enterprise Server - for example HTTP
11. Click **Save** to submit and save all the modified properties.

## Using URL iViews

URL iViews can be used to access Crystal and Web Intelligence Reports based on SAP data sources. This type of iView leverages URL Reporting capabilities through Business Objects' OpenDocument functionality. URL reporting using OpenDocument provides URL access to multiple report types passing a URL string to a BusinessObjects Enterprise server. OpenDocument controls how reports are generated and displayed.

The OpenDocument resource files are by default available after BusinessObjects Enterprise is installed. For further information refer to BusinessObjects Enterprise documentation in the "Get More Help" section of this guide.

## To configure a URL iView to access a report

You can use either the .NET or Java OpenDocument resources to create your URL iView to create a report.

1. Provide the URL iView you are going to use to access the report.

For example, the URL iView for .NET:

```
http://hostname.domain.com:port/OpenDocument/open
doc/openDocument.aspx
```

For Java:

```
http://hostname.domain.com:port/OpenDocument/open
doc/openDocument.jsp
```

2. Add the following parameter values shown in the table below:

URL Parameter	Value
iDocID	report's unique ID

### Note:

The report's unique ID, can be found in the properties of a report in InfoView.

### Note:

Additional parameters can be appended to a URL iView to define the viewer, refresh options and many other parameters that are report-type specific. For a full listing of these parameters see the *Viewing Reports and Documents using URLs* document that is available on the support site. For more information see the “Get More Help” section at the end of this guide.

The URL iView is ready to redirect you from the SAP Enterprise Portal to view your report in BusinessObjects Enterprise.

3. Click **Preview** to redirect to InfoView.

If single sign-on has been correctly configured, you should automatically be logged into InfoView using your SAP credentials.

## To configure a URL iView to access InfoView

You can use either the .NET or Java OpenDocument resources to create your URL iView to create a report.

1. Open your browser.

2. Type the URL used to access InfoView:

For Java use the following format:`http://hostname.domain.com:port/InfoViewApp`

For .NET use:`http://hostname.domain.com:port`

3. Add the following three parameter values

URL Parameter	Value to type
sap_sysid	three digit system ID
sap_client	three digit client number
language	two digit language code

4. Click **Preview** to redirect to InfoView.







# Configuring KMC



chapter



# Configuring the BusinessObjects Enterprise repository for Knowledge Management and Collaboration (KMC)

SAP NetWeaver provides Knowledge Management & Collaboration (KMC) capabilities via the SAP Enterprise Portal (SAP EP). SAP EP uses the BusinessObjects Enterprise repository.

This section describes how to install, configure and maintain BusinessObjects Enterprise repository in SAP Enterprise Portal (SAP EP). This information is intended for the SAP EP administrator who is responsible for configuring repository managers.

## Quick reference: configuring the BusinessObjects Enterprise repository for SAP EP

Administrators experienced with SAP EP and BusinessObjects Enterprise may want to follow these steps to quickly configure Business Objects Enterprise for knowledge management and collaboration. For more detailed instructions, see the instructions that follow this quick reference.

1. Upload `BusinessObjectsKM.par` into SAP EP from the Administration Console within Portal Runtime.
2. In the Repository Manager, create a new instance.

To save time, you can duplicate the existing one using the following steps:

- a. Make sure Property Search Manager is Not Set.

This is because the Property Search Manager class in some SAP EP deployments may prevent the `BusinessObjectsKM.par` from starting properly.

- b. Make sure the service "layout" is selected.
- c. Specify the host and port of the CMS you want to connect to.
- d. Replace `WEB_SERVER_AND_PORT` with the host and port of your web server in the OpenDoc URL, Dispatch URL and web service URL.
- e. Make sure the specified SAP System ID has been imported into the CMS, and the certificate of the EP has been imported in this SAP system.

3. On the KM Content page, right-click the repository and choose **Details** > **Settings** > **Presentation** on the context menu.
4. Click **Select profile** to select the **BOBJELayout** layout and select the **Apply settings to all subfolders** check box.

## To install the BusinessObjects Enterprise repository

1. Log on to SAP EP with administrator rights.
2. Go to the Administration console (under System Administration > Support > Portal Runtime), browse to the BusinessObjectsKM.par file and click **Upload**.

### Note:

After installing SAP IK, you can get the par file from %Business Objects%/BusinessObjects Enterprise 12.0/java/applications (for Windows Installer) or on the CD (for UNIX Installer).

3. To undeploy BusinessObjects Enterprise repository, return to the Administration console, select BusinessObjectsKM.par, and click **Clean**.

## Configuring the BusinessObjects Enterprise repository

To configure BusinessObjects Enterprise repository, you need to configure settings in SAP EP, BusinessObjects Enterprise, and an SAP BW system.

To understand why, consider the following workflow:

- When a user logs onto SAP EP, a login ticket is issued by SAP EP.
- When the user clicks BusinessObjects Enterprise repository, the login ticket (and the configured SAP\_System\_ID and SAP\_Client) is passed to BusinessObjects Enterprise.
- The ticket is then validated against the SAP BW system specified by the SAP\_System\_ID.

The following step procedures describe how to configure all of the components involved in using the BusinessObjects Enterprise repository with SAP EP.

## To configure SAP BW for BusinessObjects Enterprise repository

To use the BusinessObjects Enterprise repository, you need to configure the following settings in SAP BW.

1. Make sure the SAP BW system and SAP EP are in the same domain.
2. Make sure the user has the same name on the SAP EP and SAP BW systems.

**Note:**

If the SAP EP user doesn't exist in SAP BW system, create one.

3. Make sure the certificate of SAP EP has been imported into the SAP BW system.
  - a. Go to **System Administration > System Configuration > Keystore Administration**.
  - b. Select `SAPLogonTicketKeypair-cert`, click **Download verify.der File to local machine** (`verify.der.zip`), and then unzip it.
  - c. In the SAP system where you want to authenticate the SAP EP user, start transaction `STRUSTSSO2`.
  - d. Choose **Import Certificate** for the system PSE.
  - e. Browse to the downloaded `verify.der` and set the encoding to binary.
  - f. Click **Add to PSE** and **Add to ACL**. In the new dialog box, the system ID is the portal's system ID (generally the same as CN), and client is 000.
  - g. After a successful log on to SAP EP, a user will get the `MYSAPSSO2` cookie, which can be verified by the SAP system.

## To configure BusinessObjects Enterprise for SAP EP

Before implementing the following instructions, make sure SAP EP and the BusinessObjects Enterprise web application server are in the same domain.

1. Make sure the SAP BW system and role have been imported for the SAP EP user:

- a. Add the SAP BW system as an entitled system in BusinessObjects Enterprise.
- b. Import the corresponding role into BusinessObjects Enterprise.
- c. In the BusinessObjects Enterprise repository configuration, specify the names of the CMS and the SAP BW system ID.
2. To enable single sign-on when viewing a report, set `opendoc.session.cookie.enabled` to `false` in the `web.xml` file for the OpenDocument web application.
3. To see localized error messages (optional):
  - a. Copy the following files to the `dswsbobje/WEB-INF/lib` folder on your web server:
    - `ceresprops_LANG.jar`
    - `federation_LANG.jar`
    - `webreporting_LANG.jar`
    - `ws-langpack-resource_LANG.jar`
  - b. In the `dswsbobje/WEB-INF/classes/langpacks.properties` file, set `INSTALLEDLANGUAGES=LANG1,LANG2` and so on.
4. If you want users to be able to log onto the BusinessObjects Enterprise web applications via HTTPS, follow these optional steps:
  - a. Download the certificate of BusinessObjects Enterprise Web Service.
  - b. Use the following command to import the certificate to a keystore:
 

```
%java_home%\bin\keytool -import -v -trustcacerts -alias tomcat -file server.cer -keystore client.key store -keypass password -storepass password
```
  - c. Put the keystore file in the SAP EP server.
  - d. In the configuration settings for BusinessObjects Enterprise in the Repository Manager, specify the location and password of the keystore file.

## To configure the client

- Make sure all clients have cookies enabled.

## To configure SAP EP for BusinessObjects Enterprise repository

1. Go to **System Administration > System Configuration > Knowledge Management > Content Management > Repository Managers**, choose the BusinessObjects Enterprise repository.
2. Specify the following items:

Setting	Description
CMS	The name of the CMS you want to connect to. One BusinessObjects Enterprise repository instance maps to one BusinessObjects Enterprise CMS. To view objects for multiple CMSSs, create multiple BusinessObjects Enterprise repository instances. For example: <code>cms_host_name:port</code>
Prefix	The prefix of one instance, which will be displayed in the KM Content view. For example: <code>/BOERM</code>
Starting folder SID	The SI_ID of the object in BusinessObjects Enterprise that you want to use as the starting folder in KM. For example: 23
SAP Client	The client number of the SAP BW system which is used for single sign-on. Provide your 3-digit client number
SAP System ID	The system ID of the SAP BW system which is used for single sign-on. Provide your 3-digit System ID
Hide URL parameters when viewing	Set to Yes to hide URL parameters from the user. This ensures that after a document is launched, the browser address bar will not contain any encoded credentials used to access the document.
Web Service URL	The URL of Web Service provider for logging SAP EP user onto BusinessObjects Enterprise. For example: <code>http://Web-server:port/dswsbobje/services/</code>
Logoff URL	The URL to use for cleanup when the user clicks Logoff.  An example for Java:  <code>http://host/PartnerPlatformService/service/app/logoff.do</code>  An example for .NET:  <code>http://host/PartnerPlatformService/Shared/Logon/Logoff.aspx</code>

Setting	Description
OpenDoc URL	<p>The URL in BusinessObjects Enterprise for viewing an object or its latest instance.</p> <p>An example for Java:</p> <pre>http://host/OpenDocument/opendoc/openDocument.jsp</pre> <p>An example for .NET:</p> <pre>http://host/OpenDocument/opendoc/openDocument.aspx</pre>
Dispatch URL	<p>The URL in BusinessObjects Enterprise for performing tasks such as scheduling objects and viewing an object's history.</p> <p>An example for Java:</p> <pre>http://host/SAP/jsp/Action_Dispatch/dispatch.jsp</pre> <p>An example for .NET:</p> <pre>http://host/SAP/Action_Dispatch/Dispatch.aspx</pre>
Property Search Manager	The class name of the Property Search Manager. Make sure this is set to <b>Not Set</b> .
Repository Services	<p>Enable the required services.</p> <ul style="list-style-type: none"> <li>To enable BusinessObjects Enterprise-specific commands, select <b>layout</b>.</li> <li>To enable search, select <b>properties</b>.</li> <li>To enable collaboration, select the collaboration features you want to use. (For example, <b>comment</b>, <b>discussion</b>, or <b>rating</b>.)</li> <li>To enable subscription, select <b>subscription</b>.</li> </ul>
Keystorefile	The location of keystore file for connecting to CMS with the HTTPs web service. See step 3 for additional configuration steps required for HTTPS.
Keystorepwd	The password for the keystore. See step 3 for additional configuration steps required for HTTPS.

**Note:**

- The CMS, Web Service URL, OpenDoc URL and Dispatch URL can be on different machines.

- Changes to the CMS, SAP\_System\_ID, SAP\_Client and starting folder ID settings will take effect when the user has logged off and logged back on again.
- 3. If you want to use HTTPS for logon to BusinessObjects Enterprise, you also need to perform the following optional steps:
  - a. Download the certificate of the BusinessObjects Enterprise Web Service.
  - b. Import the certificate to a keystore using the following command:

```
%java_home%\bin\keytool -import -v -trustcacerts -alias tomcat -fileserver.cer -keystore client.key store -keypass password -storepass password
```
  - c. Put the keystore file on the SAP EP server.
  - d. In the BusinessObjects Enterprise repository configuration settings, specify the location and password of the keystore.

## To configure the BusinessObjects Enterprise layout

To make BusinessObjects Enterprise properties and commands appear properly, you need to change the layout set of your configured BusinessObjects Enterprise repository to the BusinessObjects Enterprise layout.

1. Go to **Content Administration > KM Content**, right-click the BusinessObjects Enterprise repository and choose **Details** from the context menu.
2. On the "Details" page, click **Settings > Presentation**, then click **Select Profile** and choose "BOBJELayout".
3. To apply the layout to all folders in the repository, check **Apply settings to all subfolders**.
4. Click **Save**.



## Configuring collaboration

The collaboration feature allows users to easily discuss objects stored in BusinessObjects Enterprise. Collaboration features include comments, discussions, feedback, personal notes and rating.

To enable the collaboration features for your users, select the features you want in the BusinessObjects Enterprise repository settings in Content Management > Repository Managers.

## Configuring subscription

Subscription notifies users who have subscribed to a folder or document on changes to it. The notification can be sent via email or SMS. You can also set subscription to send notifications at certain intervals or according to certain events.

The requirements for subscription are:

- The subscription service is enabled for the BusinessObjects Enterprise repository in Content Management > Repository Managers.
- The user has chosen to Subscribe the BusinessObjects Enterprise repository.
- Your mail server or SMS server has been configured to allow subscription.

## To maintain BusinessObjects Enterprise repository instances

1. Go to System Administration > System Configuration > Knowledge Management > Content Management > Repository Managers, and choose the BusinessObjects Enterprise repository.

A predefined instance of the BusinessObjects Enterprise repository appears. You can modify the predefined instance or create a new one.

2. To create a new instance:
  - a. Click **New**.
  - b. Provide the required information and click **OK**.

For more information about these settings, see [To configure SAP EP for BusinessObjects Enterprise repository](#).

3. To modify an existing instance:
  - a. Select an instance and click **Edit**.
  - b. Modify the settings you want to change.

**Note:**

All changes except Repository Services settings can take effect immediately. (Changes to Repository Services require the J2EE server to restart.)

## Using the BusinessObjects Enterprise Knowledge Management and Collaboration (KMC) solution

This section describes how to use a Business Objects Repository in SAP EP. It includes procedures for logging on, navigating, viewing, scheduling, creating, copying, moving, downloading, subscribing, searching, and troubleshooting.

### Logging on and off

After the SAP Enterprise Portal (SAP EP) administrator has configured a BusinessObjects Enterprise Repository, SAP EP users should be able to access this repository through the Knowledge Management (KM) content or through a KM iView using single sign-on.

To log off, click **Logoff** on either the **View** menu or the **BusinessObjects** menu. If you do not log out, the sessions will be automatically terminated according to the timeout settings.

### Navigation

You can navigate to a folder using the breadcrumb navigation, which appears at the top of the screen, or using the tree list on the left.

You can browse through all folders of the CMS specified in the BusinessObjects Enterprise repository that you have access to. After entering the BusinessObjects Enterprise repository, you should see three folders:

- Inbox  
Your personal inbox.
- My Favorites  
Your Favorites folder.
- <Starting\_Folder\_Name>

The starting folder is seen as Root folder within KM content. However you may define any subfolder to the Root folder (Public Folder) in you KM iView

If you have changed the navigation type to By Category, two categories should appear in the first level:

- Personal Category
- Corporate Category

## To change navigation settings

You must be logged onto BusinessObjects Enterprise repository.

- To change the navigation type, click **View**, and then click **By Folder** or **By Category**.

After changing navigation type, you will be redirected to the original page of KM Content.

### Note:

The default navigation type is By Folder. If you change your navigation type, you will browse folders by that navigation type during your current BusinessObjects Enterprise session. The navigation type will be reset to By Folder when you log off.

## Performing common tasks

Most common tasks can be performed using either commands in the menus or using the context menus for individual objects.

The following table provides a list of common commands, with descriptions and links to additional resources.

Task	Description
<b>Refresh</b>	Click <b>Folder&gt;Refresh</b> to get the latest view of BusinessObjects Enterprise information. If there are any changes to the folder that you are browsing, they will appear when you click <b>Refresh</b> .
<b>View</b>	Click the context menu of an object and chose <b>View</b> to view the object on demand. The content appears in a new window.  <b>Note:</b> This command does not apply to folder objects.
<b>View latest instance</b>	If an object has been scheduled and has at least one successful instance, you can click the <b>View Latest Instance</b> command to view the most recent successful instance. The content appears in a new window.  <b>Note:</b> This command does not apply to folder objects.
<b>Schedule</b>	Click <b>Schedule</b> to schedule a new instance of an object. The <b>Schedule</b> command appears in the context menu for an object if it can be scheduled (for example, a Crystal report or a Web Intelligence document), and if you have the right to schedule it.
<b>History</b>	Click <b>History</b> to view a history of an object's scheduled instances. The <b>History</b> command appears in the context menu for an object if it contains instances.
<b>MyInfoView</b>	Click <b>Goto &gt; MyInfoView</b> to open MyInfoView in a new window.
<b>Create</b>	For more information, see <a href="#">To create a document</a> .
<b>Copy / Move</b>	You can copy or move documents or folders from one repository to another. For more information, see <a href="#">To copy or move documents</a> .

Task	Description
<b>Delete</b>	You can delete documents or folders in the BusinessObjects Enterprise repository. For more information, see <a href="#">To delete a document</a> .
<b>Details</b>	Click the context menu of an object and choose <b>Details</b> to see detailed information about the object, including name, description, the last date the object was run, and the size of the object. The Details page also shows collaboration information for the object, if the collaboration service has been enabled for the repository. For more information on collaboration, see <a href="#">Collaboration</a> .
<b>Download</b>	To download a copy of an object to your local machine, click the context menu of the object and choose <b>Download</b> .

**Note:**

More advanced user tasks are discussed in [Performing advanced tasks](#).

## To create a document

You can create new objects, such as Desktop Intelligence, Voyager, and Web Intelligence documents, and save them to BusinessObjects Enterprise.

**Note:**

You can also upload document types such as Crystal reports, text files, and Microsoft documents to BusinessObjects Enterprise.

- To create a new document, click **Folder > New**, and then choose the type of document you want to create.

A new window will appear where you can configure the new document.

## To copy or move documents

You can copy or move documents or folders from one repository to another.

**Note:**

If a folder is copied or moved, the objects in the folder are also copied or moved in the BusinessObjects Enterprise Repository. For some SAP EP repositories, the name of the source object cannot be passed. In this case, the CUID of the new object in BusinessObjects Enterprise is used as its name.

1. Select the check box next to each document that you want to copy or move.

You can select multiple checkboxes in order to copy or move multiple documents.

2. Click the **Selection** menu, then click **Copy** or **Move**.

**Note:**

If you have insufficient rights to perform the move or copy action, an error message appears.

## To delete a document

You can delete documents or folders in the BusinessObjects Enterprise repository.

**Note:**

If you delete a folder, its contents are also deleted.

1. Select the check box next to each document that you want to delete.

You can select multiple checkboxes in order to delete multiple documents.

2. Click the **Selection** menu, then click **Delete**.

**Note:**

To delete a single object, you can right-click it and choose **Delete** from the context menu.

**Note:**

If you do not have the appropriate rights to delete objects, you may receive an error message.

## Performing advanced tasks

The following tasks may require additional administrative settings. Contact your system administrator for more information.

### Search

If the Search service is enabled within the BusinessObjects Repository, you can search a folder by clicking the context menu of the folder and choosing **Search from here**.

A new window opens where you can type keywords to search for. The search is a "fuzzy" search, based on the properties of the objects.

### Subscribe

You can subscribe to a document or folder to be notified at certain intervals of changes that occur, such as document creation, edits, or deletions.

This feature is available to users only if the subscription service is enable on the BusinessObjects Enterprise Repository.

To subscribe to a document or folder, click the its context menu and choose **Subscribe**. A new window appears where you can configure the subscription settings.

These Subscribe command is also available on the Details page of an object. For information on how to navigate to the Details page, see [Performing common tasks](#) .

### Collaboration

The collaboration feature allows you easily discuss objects. To initiate a collaboration about an object, click context menu of the object and choose one of the collaboration commands:

- Give Feedback. This option is like a review, but is visible only to the feedback writer and the object author.

- Start a discussion.
- Rate. Select a rating level (Excellent, for example).
- Write a review. This option is visible to all users.

These commands are also available on the Details page of an object. For information on how to navigate to the Details page, see [Performing common tasks](#) .





# Defining Security for the Open SQL driver



9 chapter



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This section shows how to use the Security Definition Editor to define table-level and row-level security for specific SAP tables when you access them using the Open SQL driver. The Security Definition Editor enables you to maintain your current SAP security levels when you deploy the Open SQL driver.

## Security Definition Editor overview

When you deploy the Data Access component and distribute the database drivers, you allow SAP users to access the data stored within your SAP R/3, mySAP ERP, and BW systems. By default, the Open SQL driver provides an open reporting environment where there are no data access restrictions. (You can, however, easily reverse this default behavior with the Security Definition Editor's Global Lock feature, which initially restricts users from accessing all SAP tables. For details, see [Choosing your table-level security model](#).)

If you need to deploy a security model that regulates users' access to SAP data, use the Security Definition Editor (transaction /CRYSTAL/RLS) to restrict data access at the table level and at the row level. The Security Definition Editor defines security for transparent tables, pool tables, cluster tables, and tables containing data clusters (for instance, PCL2). The restrictions that you specify are enforced whenever a user attempts to connect to SAP with the Open SQL driver, whether to design, refresh, or schedule a Crystal report. Thus, in order to design, refresh, or schedule a Crystal report against R/3, mySAP ERP or BW, users require access to all of the tables referred to by the report.

Data access restrictions that you define using the Security Definition Editor are applied on a per-client basis. That is, the restrictions you apply affect all users who access SAP using the same client used to define the restrictions.

In previous versions of BusinessObjects XI Integration for SAP, data access restrictions were client-independent. To preserve restrictions that you defined using earlier versions of this tool, follow the instructions in [Migrating your existing security model](#) before continuing.

### Note:

The Security Definition Editor is provided by the Security Definition Editor transport, which you import into your SAP system when you set up the Data Access. For details, see [Configuring transports](#).

## Migrating your existing security model

To continue to use the data access restrictions that you defined using a previous version of BusinessObjects XI Integration for SAP (using the ZRLS transaction), you can import these restrictions into client-dependent form using /CRYSTAL/RLS. Import these data restrictions before using /CRYSTAL/RLS to create or modify additional restrictions. Any changes you made using /CRYSTAL/RLS will be overwritten when you import the global restrictions.

To apply your global data access restrictions to additional clients, import these restrictions once for each client.

### To migrate data access restrictions

1. Enter the transaction /CRYSTAL/RLS in your SAP system.
2. Under the **Extras** menu, select **Import Global Data**.

A dialog appears, warning you that importing these restrictions will overwrite any restrictions you have defined using /CRYSTAL/RLS.

3. Click **Yes**.

Your global, client-independent data access restrictions are imported.

## Choosing your table-level security model

For enhanced flexibility, the Security Definition Editor provides a Global Lock feature, which allows you to define the basis of your data access security model in one of two ways:

- Global Lock disabled

This open security model initially provides all users with access to all tables. To customize the model to match your current SAP security configuration, you can prevent users from accessing particular tables on a table-by-table basis. When you first deploy the Data Access , the Global Lock is disabled by default.

- Global Lock enabled

This closed security model initially denies all users access to all tables. To customize the model to match your current SAP security conventions, you can authorize users to access particular tables on a table-by-table basis. Additionally, you can specify a list of custom functions that users can still report off when the Global Lock is enabled. For details, see [Customizing authorizations for specific functions](#) for details.

Once you have enabled or disabled the Global Lock, you can refine the security model by customizing data access authorizations for particular tables. For details, see [Customizing authorizations for specific tables](#).

## To enable/disable the Global Lock

1. From the SAPGUI, execute transaction `/CRYSTAL/RLS`.

The "Security Definition Editor" appears.

2. You now have two options:
  - If you want to enable the Global Lock, select the **Allow access only to the tables specified above** option.
  - If you want to disable the Global Lock, ensure that the **Allow access only to the tables specified above** option is not selected.

Now that you've chosen an open or closed basis for your security model, you can customize authorizations for particular users and tables, thereby allowing or disallowing data access in order to match your SAP security conventions.

## Customizing authorizations for specific tables

Whether you have enabled or disabled the Global Lock feature, you may need to customize the data access authorizations for one or more SAP tables. If the Global Lock is enabled, you will need to allow all or some users to access particular tables. (Otherwise, users will be unable to design or refresh reports against the SAP system.) Alternatively, if the Global Lock is disabled, you may need to prevent all or some users from accessing tables that contain sensitive data.

In either case, whether you want to secure a table or to permit access to a table, you must use an authorization object for that purpose. (You can customize a new authorization object, or reuse an existing one.) Then, using the Security Definition Editor, you associate the authorization object with the table in question. Finally, you incorporate the new authorization object into your current configuration of user profiles or roles.

Essentially, by associating an authorization object with an SAP table, you define that table as an exception to the Global Lock settings that you have made within the Security Definition Editor. In other words, once you've associated an authorization object with a table, that table is withheld from all users—regardless of your Global Lock settings. You must then use the authorization object according to your usual SAP security conventions in order to provide particular users with access to the SAP table.

## To customize authorizations for a specific table

1. Create a new authorization object.

For this example, create an authorization object called ZTABCHK that consists of one authorization field called TABLE. The ZTABCHK authorization is being used to secure the VBAK table from all but a particular subset of users.

### Note:

Use transaction SU21 to create the authorization object, or see the SAP Help for more information on creating authorization objects.

2. From SAP, execute transaction `/CRYSTAL/RLS`.

The "Security Definition Editor" screen appears.

You will now associate your new authorization object with an SAP table.

3. In the **Table name** field, type the name of the table whose security definition you will customize.

For this example, type VBAK.

4. Click **Create**.

The "Authorization entries" screen appears

5. Click **Create**.

The "Authorization Object entry" dialog box appears.

6. Click **Reference to an authorization object**.

For details on the second option—Reference to an already defined table or group—see [Defining table authorizations by group](#). Click **OK**.

The "Authorization Object entry" screen appears.

7. In the **Authorization object name** field, type the name of the authorization object that you created in step 1.

For this example, type ZTABCHK.

8. Click **Create**.

The "Authorization field values" screen appears.

9. In the **Field value** list, type the name of the table whose security definition you want to customize.

For this example, type VBAK.

10. Click **Save**.

You have now associated your customized authorization object with a specific SAP table.

11. Exit the Security Definition Editor.

12. Following your usual procedure, incorporate the new authorization object into your configuration of user profiles or roles.

For instance, following this example, you would apply the ZTABCHK authorization object to the subset of users who need to access the VBAK table.

Depending on the version of R/3 or mySAP ERP that you are using, and the SAP authorization model that you have already deployed, you can accomplish this in various ways:

- Attach the new authorization object to a new role that you in turn add to each user's security profile.
- Attach the new authorization object to a new profile that you in turn add to each user's security profile.

The end result is that the authorization is added to the master user data, so the database drivers can adhere to your customized data access restrictions.

**Note:**

Regardless of the method you use, ensure that your new authorization holds the name of the correct database table in its TABLE field value. In this example, the VBAK table must be specified.

## Customizing authorizations for specific functions

When the Global Lock feature is disabled, report designers essentially have the freedom to call any function on the SAP system. To restrict the functions available to report off, enable the Global Lock. This restricts users from calling any functions on the SAP system. In the `/CRYSTAL/AUTHFCN` table, you can specify a list of functions that are exceptions to the Global Lock. That is, you can specify a list of functions that users are able to call. To access the list of functions, use the `/CRYSTAL/RLS` tool and go to **Extras > Function modules**.

## Defining table authorizations by group

The Security Definition Editor provides two ways for you to quickly define table authorizations for tables that require similar levels of security:

- You can reference a table to any other table whose data access authorizations you have already defined.

The **Reference to an already defined table or group** option is provided in the "Select authorization entry type" screen, which appears in the Security Definition Editor when you create an authorization entry for a table.

- You can reference multiple tables to a group table that acts as a security template.

To create a group table, execute transaction `/CRYSTAL/RLS` and specify a nonexistent table name in the Editor. (When the specified table does not exist, the Editor assumes instead that you are creating a group or template.) The main screen listing all the definitions will show the table

type as group. You can now share security levels by referencing existing tables to this security template.

## Applying row-level security

Sometimes table-level security does not allow you to secure data in a way that corresponds with the security privileges of your SAP users: you may need to grant all users access to a particular table, while at the same time limiting a subset of those users to a certain portion of the table's data. To accomplish this, use the Security Definition Editor to define an additional level of security for the individual rows of data.

In general, row-level security is based on a particular field within a table. For instance, you might need to prevent users from seeing data for all customers within a Sales table. To enable this type of restriction, you create an authorization object and use the Security Definition Editor to associate the object with the Customer field in the Sales table. Then, when you apply the new authorization object to each user's profile or role, you specify the Customer values for those customers whose Sales records the user is permitted to view. When the user designs or refreshes reports against the Sales table, data is returned only for those customers that you have specified.

Essentially, by associating an authorization object with a field within an SAP table, you define that table as an exception to the Global Lock settings that you have made within the Security Definition Editor. In other words, once you've associated an authorization object with a field, the parent table is secured from all users—regardless of your Global Lock settings. You must then use the authorization object according to your usual SAP security conventions in order to provide particular users with access to rows of data within the SAP table.

You can secure rows in a table by using authorization objects, custom functions, or both.

## Securing rows using authorization objects

In order to define row-level security for tables, you can create an authorization object and use the Security Definition Editor to associate the object with one of the table's fields. You then apply the new authorization object to the roles or profiles of SAP users who need to access any of the table's data. When



you apply the authorization object, you specify the rows of data that each user is permitted to access.

## To define row-level security using an authorization object

1. Create a new authorization object.

For this example, create an authorization object called Z\_BUKRS that consists of one authorization field called BUKRS. This authorization is being used to secure the GLT0 table based on the values in the BUKRS (Company Codes) field.

### Note:

Use transaction SU21 to create the authorization object, or see the SAPGUI Help for more information on creating authorization objects.

2. Execute transaction /CRYSTAL/RLS to access the Security Definition Editor.
3. In the **Table name** field, type the name of the table that contains the rows you want to secure.

For this example, type GLT0.

### Note:

You can now use wildcards to specify the table name. This is an efficient way to apply an authorization to multiple tables with similar names simultaneously. Use \* to specify zero or more characters and + to specify one character.

4. Click **Create**.
5. In the "Authorization entries" screen, click **Create**.
6. In the "Select authorization entry type" screen, click **Reference to an authorization object**.
7. Click **OK** to access the "Authorization Object entry" screen.
8. In the **Authorization object name** field, type the name of the authorization that you created in step 1.

For this example, you would type Z\_BUKRS.

9. Click **Create**.

The "Authorization field values" screen appears.

10. In the **Field value** list, type the equals sign (=) and the name of the field that you want to secure.

For this example, you would type =BUKRS.

**Tip:**

To view a list of available fields, right-click the Field value list and, on the shortcut menu, click Possible entries. Double-click the desired field (in this case, BUKRS) to insert it along with the required equals sign (=).

11. Click **Save**.
12. Exit the Security Definition Editor.
13. Following your usual procedure, apply the new authorization object to the profiles or roles of the appropriate users.

For instance, following this example, you would apply the Z\_BUKRS authorization object to each user who needs to access rows of data within the GLT0 table. When you apply the authorization object, you enter the appropriate Company Code values into the BUKRS authorization field, thereby specifying the Company Codes that the specified user is authorized to access.

Depending on the version of R/3 or mySAP ERP that you are using, and the SAP authorization model that you have already deployed, you can accomplish this in various ways:

- Attach the new authorization to a new role that you in turn add to each user's security profile.
- Attach the new authorization to a new profile that you in turn add to each user's security profile.

The end result is that the authorization is added to the master user data, so the database drivers can adhere to your customized data access restrictions.

## Securing rows using custom security exits

In addition to, or instead of using authorization-based restrictions for tables, you can secure rows using custom security exits. That is, you can map table fields to function parameters so that you can define the call to one function to handle the post filtering for any table.

**Note:**

- You must give a value (either constant or field-mapped) for all non-optional parameters.
- Make mappings between compatible types. For example, do not link a function parameter for a date to a number field. Mapping incompatible types results in a failure at runtime.

The following example shows how to map table fields to function parameters in a custom security exit.

## To define row-level security using a custom security exit

1. Execute transaction `/CRYSTAL/RLS`.
2. In the **Table name** field, type the name of the data table whose rows you want to secure.

For this example, type PA0000 to secure the rows in that table.

**Note:**

You can now use wildcards to specify the table name. This is an efficient way to apply an authorization to multiple tables with similar names simultaneously. Use \* to specify zero or more characters and + to specify one character.

3. Click **Create**.

The "Authorization entries" screen appears.

This screen lists the authorization entries (if any) that are currently applied to the table.

4. Click **Custom exit**.

The "Edit custom function security exit mappings" window appears.

5. In the **Function name** field, type the name of the function that you want to use to secure the table, and then click **Transfer**.

For this example, type HR\_CHECK\_AUTHORITY\_INFITY.

6. For each necessary parameter, specify a value or field to map to that parameter.

In this example make the entries listed in the table below:

Imported parameter name	Field name
INFTY	'0000'
PERNR	=PERNR
SUBTY	=SUBTY

7. Click **Save**.

You are returned to the "Authorization entries" screen, which now indicates that there is an active custom security exit for this table.

When a user attempts to access a table secured by a custom security exit, the driver checks the appropriate field(s) in the table. The field values you mapped are passed as parameters to the function you selected, in this example HR\_CHECK\_AUTHORITY\_INFTY. When authorization restrictions are combined with the values you mapped, the authorization restrictions filters the results first, and then the mapped values further filter the results.



# Firewalls Configuration for BusinessObjects XI Integration for SAP Solutions

# 10

chapter

## Understanding communication between BusinessObjects Enterprise components

This chapter shows what ports are used for communication specifically between BusinessObjects XI Integration for SAP Solutions and SAP systems when configuring to work with firewalls. You need to configure BusinessObjects Enterprise system to work in a firewalled environment first, for detailed information about this, please refer to “Working with Firewalls” section in *SAP BusinessObjects Enterprise Administrator's Guide*.

## Guidelines for communication with BusinessObjects XI Integration for SAP Solutions

BusinessObjects Enterprise components include browser clients, rich clients, servers, and the BusinessObjects Enterprise SDK hosted in the Web Application server. BusinessObjects Integration for SAP Solutions components can be distributed installed on the appropriate machines. It is helpful to understand the basics of communications with BusinessObjects Integration for SAP Solutions components before configuring your BusinessObjects Enterprise system to work with firewalls. Deployments of BusinessObjects Integration for SAP Solutions must conform to these general communication rules:

- The CMS (along with Security components) must be able to initiate communication with SAP system on SAP System Gateway port.
- The Crystal Reports Job Server and Crystal Reports Processing Server (along with Data Access components) must be able to initiate communication with SAP system on the SAP System Gateway port.
- The BW Publisher component must be able to initiate communication with the SAP system on the SAP System Gateway port.
- BusinessObjects Integration for SAP Solutions components deployed on the SAP Enterprise Portal side (for example, iView and KMC) must be able to initiate communication with BusinessObjects Enterprise web applications on HTTP/HTTPS ports.
- The web application server must be able to initiate communication on the SAP System Gateway service.

- Crystal Reports must be able to initiate communication with the SAP host on the SAP System Gateway port and SAP System Dispatcher port.

The port that the SAP Gateway service is listening on is the same as that specified in the installation. For more details about SAP Gateway service, consult your SAP documentation.

**Note:**

If a BusinessObjects Enterprise component requires an SAP router to connect to an SAP system, you can configure the component using the SAP router string. For example, when configuring an SAP entitlement system to import roles and users, the SAP router string can be substituted for the application server's name. This insures that the CMS will communicate with the SAP system through the SAP router.

## Detailed port requirements for the BusinessObjects Integration for SAP Solutions

This section lists the requirements for communication with BusinessObjects Integration for SAP Solutions. If you deploy BusinessObjects Enterprise with firewalls, you can use this information to open the minimum number of ports in those firewalls necessary for BusinessObjects Integration for SAP Solutions.

### **Port requirements for BusinessObjects Enterprise servers**

The following ports are required for their corresponding servers in BusinessObjects Enterprise:

- Central Management Server Name Server port
- Central Management Server Request port
- Input File Repository Server Request port
- Output File Repository Server Request port
- Report Application Server Request port
- Crystal Reports Cache Server Request port
- Crystal Reports Processing Server Request port

For detailed information about how to configure your BusinessObjects Enterprise system to work in an environment with firewalls, see the “Working

with Firewalls” chapter in the *SAP BusinessObjects Enterprise Administrator's Guide*.

## **Port requirements for SAP**

BusinessObjects Integration for SAP Solutions uses the SAP Java Connector (SAP JCO) to communicate with the Enterprise Resource Planning side. You require these ports:

- SAP Gateway service listening port (for example, 3300).
- SAP Dispatcher service listening port (for example, 3200).

The following table summarizes the specific port configurations that you need.



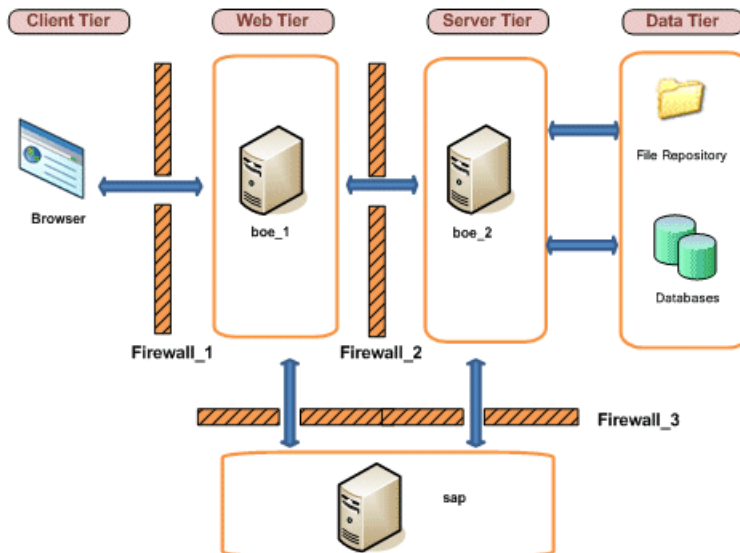
Source computer	Port	Destination computer	Port	Action
SAP	Any	BusinessObjects Enterprise Web Application Server	Web Service HTTP/HTTPS port	Allow
SAP	Any	CMS	CMS Name Server port	Allow
SAP	Any	CMS	CMS Requested port	Allow
Web Application Server	Any	SAP	SAP System Gateway Service port	Allow
Central Management Server (CMS)	Any	SAP	SAP System Gateway Service port	Allow
Crystal Reports	Any	SAP	SAP System Gateway Service port and SAP System Dispatcher port	Allow

## Example: BusinessObjects Enterprise servers separated from SAP by a firewall

This example shows how to configure a firewall for BusinessObjects Enterprise and SAP to work together in a deployment where separated by a firewall. In this deployment scenario, BusinessObjects Enterprise and BusinessObjects Integration for SAP Solutions components are deployed across these machines:

- Machine boe\_1 hosts the Web Application Server and the BusinessObjects Enterprise SDK.
- Machine boe\_2 hosts the back-end servers, including the Central Management Server, the Input File Repository Server, the Output File Repository Server, the Crystal Reports Cache Server, Crystal Reports Job Server, Web Intelligence Job Server, Web Intelligence Report Server, Report Application Server, and the Crystal Reports Processing Server.
- Machine sap hosts the SAP system, which communicates with BusinessObjects Enterprise through BusinessObjects Integration for SAP

Solutions. In this example, the SAP System Gateway Service port is 3300 and the SAP System Dispatcher port is 3200.



To configure this example, you require the following:

### 1. Communication prerequisites:

- The CMS (along with Security components) must be able to initiate communication with SAP system on SAP System Gateway port.
- The Crystal Reports Job Server and Crystal Reports Processing Server (along with Data Access components) must be able to initiate communication with the SAP system on the SAP System Gateway port.
- The BusinessObjects Integration for SAP Solutions components deployed on the SAP Enterprise Portal side (for example, iView and KMC) must be able to initiate communication with the BusinessObjects Enterprise web applications on HTTP/HTTPS ports.
- The web application server must be able to initiate communication on the SAP System Gateway service.

### 2. The web application server must communicate with all Business Objects Enterprise servers on machine boe\_2. Configure the port numbers for each server on these machines. Note that you can use any free port between 1,025 and 65,535.

The port numbers chosen for this example are listed in the following table.

Server	Port number
Central Management Server	6411
Input File Repository Server	6415
Output File Repository Server	6420
Crystal Reports Cache Server	6425
Crystal Reports Job Server	6430
Web Intelligence Processing Server	6435
Report Application Server	6440
Crystal Reports Processing Server	6445

3. Configure the firewalls Firewall\_1 and Firewall\_2 to allow communication to the fixed ports on the BusinessObjects Enterprise servers and the web application server that you set in BusinessObjects Enterprise, and Firewall\_3 to allow communication between the BusinessObjects Enterprise system and SAP system.

In this example, you open the HTTP port for the Tomcat application server.

*Table 10-1: Configuration for Firewall\_1*

Port	Destination computer	Port	Action
Any	boe_1	8080	Allow

*Table 10-2: Configuration for Firewall\_2*

Source computer	Port	Destination computer	Port	Action
boe_1	Any	boe_2	6410	Allow
boe_1	Any	boe_2	6411	Allow

Source computer	Port	Destination computer	Port	Action
boe_1	Any	boe_2	6415	Allow
boe_1	Any	boe_2	6420	Allow
boe_1	Any	boe_2	6425	Allow
boe_1	Any	boe_2	6430	Allow
boe_1	Any	boe_2	6435	Allow
boe_1	Any	boe_2	6440	Allow
boe_1	Any	boe_2	6445	Allow

*Table 10-3: Configuration for Firewall\_3*

Source computer	Port	Destination computer	Port	Action
boe_1	Any	sap	3300	Allow
boe_2	Any	sap	3300	Allow



# Troubleshooting

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chapter



This section describes some common installation and configuration issues in order to assist you in troubleshooting your BusinessObjects XI Integration for SAP Solutions implementation.

## Locating and generating log files

You can create and view several log files to help determine the cause of errors. The core BusinessObjects Enterprise server components log information by default to the `logging` directory of your BusinessObjects Enterprise installation.

To enable logging for your SAP drivers, go to `HKEY_LOCAL_MACHINE\SOFTWARE\Business Objects\Suite 12.0\SAP` and create a new string key called `TraceDir` (this name is case-sensitive). Set trace dir directory (such as `c:\sapikLog\`) as the registry value. Then, change the trace level from No to Yes for each component that you want to enable logging for.

## Disabling SAP entitlement systems in the CMC

In the CMC, you can temporarily disable a connection between BusinessObjects Enterprise and an SAP entitlement system. This may be useful to maintain the responsiveness of BusinessObjects Enterprise in cases such as the scheduled down time of an SAP entitlement system.

### To temporarily disable a connection to an SAP entitlement system

1. In the CMC, go to the **Authorization** management area.
2. Double-click the **SAP** link.
3. In the **Logical system name** list, select the system you want to disable.
4. Select the **Disabled** check box.
5. Click **Update**.

**Note:**

See the *SAP BusinessObjects Enterprise Administrator's Guide* for a number of sections devoted to general system troubleshooting, such as web server configuration, path mapping, report processing, and so on. You can download our product documentation from our customer support site: [http://support.businessobjects.com/documentation/product\\_guides/default.asp](http://support.businessobjects.com/documentation/product_guides/default.asp).

## Reports, tables, and functions

If the SAP data source does not appear when you create a new report, there may be a problem with the driver installation, or required files may have been deleted since installation. Run the Crystal Reports–SAP Edition installation again.

## Errors when connecting to SAP

If an error message indicates that the `RSAQ_REMOTE_FUNCAREA_CATALOG` function module was not found, you may be trying to use the InfoSet driver to access a system that is older than R/3 4.6c. The InfoSet driver is supported only for versions 4.6c and later of SAP R/3 and for mySAP ERP.

## Viewing document and reports

If an InfoView user recognizes any of the following symptoms when using the InfoView, it means that the `partnercafinstall.bat` file was not run when you installed BusinessObjects Integration for SAP Solutions.

- in the "Document List", the **My Group** folder does not appear.
- In the "Document List", every SAP multilingual report appears, instead of the specific reports based on the user's *Preferred Viewing Locale* setting.
- When viewing an SAP report that uses parameters, Online Prompting does not appear.
- When scheduling an SAP multilingual report, the "Languages" section does not appear on the "Schedule" page.
- When scheduling an SPA report that uses parameters, the "Parameters" section does not appear on the "Schedule" page.

- On the "History" page for an SAP report, the **Show all instances scheduled in all languages** checkbox does not appear.

If a user recognizes any of these symptoms, manually run the `partnercafinstall.bat` or `partnercafinstall.sh` file, depending on your environment.

## To run the `partnercafinstall` command

1. Locate the `partnercafinstall` file.
  - On a Windows computer, the `partnercafinstall.bat` file is located at `<INSTALL_DIR>common\4.0\java\lib\`, where `<INSTALL_DIR>` is the folder where BusinessObjects Enterprise is installed.
  - On UNIX, the `partnercafinstall.sh` is located at `$BOBJEDIR/bobje/java/lib/`, where `$BOBJEDIR` is an environment variable that identifies the root folder where BusinessObjects Enterprise is installed.
2. Run the appropriate script, using `BOE_PASSWORD` as a parameter, where `BOE_PASSWORD` is the administrative password.
  - On Windows, run `partnercafinstall.bat BOE_PASSWORD`.
  - On UNIX, run `partnercafinstall.sh BOE_PASSWORD`.





# Transport Files

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chapter



This section lists the names and contents of the transports that are included on the installation CD. Also read the `transports_EN.txt` file located in the `transports` directory on the installation CD. This text file lists the names of the files that make up each transport.

## Note:

- For NetWeaver 7.0.2 or higher, several transports will be included as part of NetWeaver. If you are only using NetWeaver BI integration, you will not have to import any transports into NetWeaver to enable the SAP Integration Product. The transports included with NetWeaver are listed below.
  - Authentication Transport
  - Authentication Helper Transport
  - Content Administration Workbench
  - BQ Query Parameter Personalization Transport
  - BW MDX Connectivity Transport
- If you download the integration for SAP solutions from the self-extraction file on the SAP Service Market Place Web site, the transport files discussed in this chapter are extracted to the following locations:
  - On Windows, to the system temp folder `%Temp%\Transports`
  - On Unix, to the installer extraction destination folder

## Overview

BusinessObjects XI Integration for SAP includes nine transports: the Open SQL Connectivity transport, the InfoSet Connectivity transport, the Row-level Security Definition transport, the Cluster Definition transport, the Authentication Helpers transport, the Content Administration Workbench, the BW Query parameter personalization transport, the MDX transport, and the ODS transport.

The contents of each transport are listed here. To determine which transports you need to import, see [Configuring transports](#).

There are two different sets of the transports: Unicode compatible transports and ANSI transports. If you are running a BASIS system of 6.20 or later, use the Unicode compatible transports. If you are running a BASIS system earlier than 6.20, use the ANSI transports. The `transports_EN.txt` file located

in the `transports` directory on the installation CD lists the Unicode compatible and ANSI transport files.

**Note:**

When checking for possible installation conflicts, ensure that none of the object names already exists in your SAP system. Objects use a `/crystal/` namespace by default, so it is not necessary to create this namespace yourself. If you do create the `/crystal/` namespace manually, you will be prompted for license repair keys that you cannot access.

## Open SQL Connectivity transport

The Open SQL Connectivity transport enables the drivers to connect to and report off the SAP system.

Object	Type	Description
/CRYSTAL/BC	Package	Development class
/CRYSTAL/OPENSQ	Function group	Open SQL functions
/CRYSTAL/OS QL_AUTH_FORMS	Program	Helper program
/CRYSTAL/OSQL_EXE CUTE	Program	Helper program
/CRYSTAL/OS QL_TYPEPOOLPROG	Program	Helper program
/CRYSTAL/OS QL_TYPEPOOLS	Program	Helper program

Object	Type	Description
/CRYSTAL/OS QL_UTILS	Program	Helper program
ZSSI	Authorization object class	Reporting authorization objects
ZSEGREPORT	Authorization object	Reporting authorization object
/CRYSTAL/OS QL_CLU_ACTKEY_EN TRY	Table	Cluster meta data
/CRYSTAL/OS QL_FCN_PARAM	Table	Function meta data
/CRYSTAL/OS QL_FCN_PARAM_FIELD	Table	Function meta data
/CRYSTAL/OS QL_FIELD_ENTRY	Table	Table meta data
/CRYSTAL/OSQL_OB JECT_ENTRY	Table	Table meta data
/CRYSTAL/OS QL_RLS_CHK_ENTRY	Table	RLS meta data
/CRYSTAL/OS QL_RLS_FCN_ENTRY	Table	RLS meta data

Object	Type	Description
/CRYSTAL/OS QL_RLS_VAL_ENTRY	Table	RLS meta data
ZCLUSTDATA	Table	Cluster meta data
ZCLUSTID	Table	Cluster meta data
ZCLUSTKEY	Table	Cluster meta data
ZCLUSTKEY2	Table	Cluster meta data
/CRYSTAL/AUTHCHK	Table	RLS meta data
/CRYSTAL/AUTHFCN	Table	RLS meta data
/CRYSTAL/AUTHKEY	Table	RLS meta data
/CRYSTAL/AUTHOBJ	Table	RLS meta data
/CRYSTAL/AUTHREF	Table	RLS meta data
ZSSAUTHCHK	Table	Old RLS meta data
ZSSAUTHOBJ	Table	Old RLS meta data
ZSSAUTHKEY	Table	Old RLS meta data

Object	Type	Description
ZSSAUTHREF	Table	Old RLS meta data
ZSSAUTH FCN	Table	Old RLS meta data

## InfoSet Connectivity transport

The InfoSet Connectivity transport enables the InfoSet driver to access InfoSets. This transport is compatible with R/3 4.6c and later. Do not import this transport if you are running R/3 4.6a or earlier.

Object	Type	Description
/CRYSTAL/BC	Package	Development class
/CRYSTAL/FLAT	Function group	InfoSet wrapper functions
/CRYSTAL/QUERY_BATCH	Program	Batch mode execution
/CRYSTAL/QUERY_BATCH_STREAM	Program	Streaming batch mode execution.

## Row-level Security Definition transport

This transport provides the Security Definition Editor, which is a tool that serves as a graphical interface to the /CRYSTAL/AUTH tables in the Open SQL Connectivity transport. For details on using the Security Definition Editor, see [Security Definition Editor overview](#).

Object	Type	Description
/CRYSTAL/BC	Package	Development class
/CRYSTAL/TABMNT	Function group	Function group for table maintenance view for function restrictions
/CRYSTAL/RLSDEF	Program	Main program
/CRYSTAL/RLS_IN CLUE1	Program	Include program containing the module definitions
/CRYSTAL/RLS_IN CLUE2	Program	Include program containing the subroutine definitions
TDDAT [/CRYSTAL/AUTHFCN]	Table contents	Table maintenance definition
TVDIR [/CRYSTAL/AUTHFCN]	Table contents	Table maintenance definition

Object	Type	Description
/CRYSTAL/AUTHFCNS	Definition of transport and maintenance object	Table maintenance definition
/CRYSTAL/RLS	Transaction	Main program transaction
/CRYSTAL/RLSFCN	Transaction	Helper transaction called internally by main program.

## Cluster Definition transport

This transport provides the Cluster Definition tool. This tool enables you to build up a metadata repository for ABAP data cluster definitions. These definitions provide the Open SQL driver with the information it requires in order to report off these data clusters. For details on using the Cluster Definition Tool, see the “Reporting off clusters” section of the *SAP BusinessObjects XI Integration User's Guide*.

### Note:

ABAP data clusters are not the same as cluster tables. Cluster tables are already defined in the DDIC.

Object	Type	Description
ZCIMPRBG	Program	Main program
ZCRBGTOP	Program	Include program



Object	Type	Description
ZCDD	Transaction	Main program transaction

## Authentication Helpers transport

### Note:

For NetWeaver 7.0.2 or higher, this transport will be provided as part of NetWeaver.

This transport provides access to the higher performance user list used by the SAP SAP BusinessObjects Enterprise security plug-in. This enhancement frees users from having to enter their credentials more than once to access any of the SAP BusinessObjects Enterprise, R3, and BW systems.

Object	Type	Description
/CRYSTAL/BC	Package	Development class
/CRYSTAL/SECURITY	Function group	Security helper functions

## Content Administration Workbench

### Note:

For NetWeaver 7.0.2 or higher, this transport will be provided as part of NetWeaver.

This transport provides content administration functionality for BW systems. It is available only as a Unicode compatible transport.

Object	Type	Description
/CRYSTAL/BC	Package	Development class
/CRYSTAL/CL_BW_HTTP_HANDLER	Class	Multi CE-aware HTTP request handler
/CRYSTAL/OBJECT_STATUS_DOM	Domain	Report activity
/CRYSTAL/OBJ_POLICY_DOM	Domain	CE object security
/CRYSTAL/OBJECT_STATUS	Data element	Report activity
/CRYSTAL/OBJ_POLICY	Data element	CE object security
/CRYSTAL/CE_SYNCH	Function group	Publisher stubs
/CRYSTAL/CA_MSG	Message class	Status messages
/CRYSTAL/CE_SYNCH_FORMS	Program	Program component
/CRYSTAL/CONTENT_ADMIN	Program	Program component

Object	Type	Description
/CRYSTAL/CONTENT_AD MIN_CLASS_D	Program	Program component
/CRYSTAL/CONTENT_AD MIN_CLASS_I	Program	Program component
/CRYSTAL/CONTENT_ADMIN_CTREE	Program	Program component
/CRYSTAL/CONTENT_ADMIN_FORMS	Program	Program component
/CRYSTAL/CONTENT_ADMIN_MODULES	Program	Program component
/CRYSTAL/CONTENT_ADMIN_PAIS	Program	Program component
/CRYSTAL/CONTENT_ADMIN_PBOS	Program	Program component
/CRYSTAL/CONTENT_AD MIN_TAB_FRM	Program	Program component
/CRYSTAL/CONTENT_ADMIN_TOP	Program	Program component

Object	Type	Description
/CRYSTAL/PUBLISH_WORKER	Program	Program component
/CRYSTAL/PUBLISH_WORKER_DISP	Program	Program component
/CRYSTAL/PUBLISH_WORKER_DISP_I	Program	Program component
/CRYSTAL/PUBLISH_WORKER_FORMS	Program	Program component
/CRYSTAL/PUBLISH_WORKER_PROC	Program	Program component
/CRYSTAL/PUBLISH_WORKER_PROC_I	Program	Program component
/CRYSTAL/PUBLISH_WORKER_SCREEN	Program	Program component
/CRYSTAL/CA_DEST	Table	Application state
/CRYSTAL/CA_JOB	Table	Application state
/CRYSTAL/CA_JOB2	Table	Application state

Object	Type	Description
/CRYSTAL/CA_LANG	Table	Application state
/CRYSTAL/CA_PARM	Table	Application state
/CRYSTAL/CA_ROLE	Table	Application state
/CRYSTAL/CA_SYST	Table	Application state
/CRYSTAL/MENU_TREE_ITEMS	Structure	Application state
/CRYSTAL/REPORT_ID	Table	Application state
/CRYSTAL/RPTADMIN	Transaction	Main program transaction
/CRYSTAL/EDIT_REPORT	Program	Wrapper for report edit
/CRYSTAL/EDIT_REPORT	Function Group	Functions for report edit
ZSSI	Authorization object class	Crystal Authorizations
ZCNTADMCES	Authorization object	CE operations
ZCNTADMRPT	Authorization object	Report operations

Object	Type	Description
ZCNTADMJOB	Authorization object	Background job operations

## ODS connectivity transport

This transport enables the ODS Query driver to access ODS data. This transport is compatible with BW 3.0B patch 27 or higher and BW 3.1C patch 21 or higher.

Object	Type	Description
/CRYSTAL/BC	Package	Development class
/CRYSTAL/ODS_REPORT	Function group	ODS functions

## BW Query parameter personalization transport

### Note:

For NetWeaver 7.0.2 or higher, this transport will be provided as part of NetWeaver.

This transport provides support for personalized and default parameter values in reports based on BW queries.

Object	Type	Description
/CRYSTAL/BC	Package	Development class
/CRYSTAL/PERS_VAR	Structure	Variable definition
/CRYSTAL/PERS_VALUE	Structure	Value definition
/CRYSTAL/PERS	Function Group	Personalization functions

## BW MDX connectivity transport

### Note:

For NetWeaver 7.0.2 or higher, this transport will be provided as part of NetWeaver.

This transport enables the MDX Query driver to access BW cubes and queries. This transport is compatible with BW 3.0B patch 27 or higher and BW 3.1C patch 21 or higher.

Object	Type	Description
/CRYSTAL/BC	Package	Development class
/CRYSTAL/MDX	Function group	MDX functions

Object	Type	Description
/CRYSTAL/MDX_STREAM_LAYOUT	Table definition	Dataset structure
/CRYSTAL/CX_BAPI_ERROR	Class	Exception
/CRYSTAL/CX_METADATA_ERROR	Class	Exception
/CRYSTAL/CX_MISSING_STREAMINFO	Class	Exception
/CRYSTAL/CX_NO_MORE_CELLS	Class	Exception
/CRYSTAL/CX_NO_MORE_MEMBERS	Class	Exception
/CRYSTAL/CX_NO_MORE_PROPERTIES	Class	Exception
/CRYSTAL/CX_SAVE_SESSION_STATE	Class	Exception
/CRYSTAL/MDX_APPEND_DATA	Class	Dataset processor



Object	Type	Description
/CRYSTAL/MDX_READER_BASE	Class	Dataset processor
/CRYSTAL/MDX_READ_DIMENSIONS	Class	Dataset processor
/CRYSTAL/MDX_READ_MEASURES	Class	Dataset processor
/CRYSTAL/MDX_READ_PROPERTIES	Class	Dataset processor
/CRYSTAL/MDX_AXIS_LEVELS	Table type	Metadata structure
/CRYSTAL/MDX_PROPERTY_KEYS	Table type	Metadata structure
/CRYSTAL/MDX_PROPERTY_VALUES	Table type	Metadata structure
/CRYSTAL/MDX_STREAM_LAYOUT_TAB	Table type	Metadata structure

## Configuring transports

To set up the Data Access or BW Publisher component of BusinessObjects XI Integration for SAP, you must import the appropriate transports from the installation disc to your SAP system. The Data Access and the BW Publisher use the contents of these transport files when communicating with the SAP system.

The transports provided with BusinessObjects XI Integration for SAP are located in the `transports` directory on the installation cd. These sections provide you with details on setting up the appropriate transports:

- [Types of transports](#)
- [Selecting which transports to import](#)
- [Checking for conflicts](#)
- [Importing the transport files](#)

The installation and configuration procedures required on the SAP system must be performed by a BASIS expert who is familiar with the Change and Transport system and who has administrative rights to the SAP system. The exact procedure for importing transport files varies, depending upon the version of BASIS that you are running. For specific procedural details, refer to your SAP documentation.

When you first deploy the Data Access , all users can access all of your SAP tables by default. To secure the SAP data that users can access, use the Security Definition Editor. For complete details, see [Security Definition Editor overview](#).

After you have imported transports, you must configure the appropriate levels of user access. Create the required authorizations and apply them through profiles or roles to SAP users who will be designing, running, or scheduling Crystal reports. For details, see [Creating and applying authorizations](#).

To return to the reporting overview, click [Reporting off BW queries, InfoSets, Operational Data Stores, and MDX cubes](#).

## Types of transports

There are two different sets of the transports: Unicode compatible transports and ANSI transports. If you are running a BASIS system of 6.20 or later, use

the Unicode compatible transports. If you are running a BASIS system earlier than 6.20, use the ANSI transports. The `transports_EN.txt` file located in the `transports` directory on the installation cd lists the Unicode compatible and ANSI transport files.

Each transport is described here. For details about the contents of each transport file, see [Transport Files](#).

- Open SQL Connectivity transport

The Open SQL Connectivity transport enables the Open SQL driver to connect to and report off the SAP system.

- Row-level Security Definition transport

This transport provides the Security Definition Editor, which is a tool that serves as a graphical interface to the `/crystal/auth` tables in the Open SQL Connectivity transport. For details on using the Security Definition Editor, see [Security Definition Editor overview](#).

- Cluster Definition transport

This transport provides the Cluster Definition tool. This tool enables you to build up a metadata repository for ABAP data cluster definitions. These definitions provide the Open SQL driver with the information it requires in order to report off these data clusters. For details on using the Cluster Definition Tool, see the "Reporting off clusters" section of the BusinessObjects XI Integration for SAP User's Guide.

**Note:**

ABAP data clusters are not the same as cluster tables. Cluster tables are already defined in the DDIC.

- InfoSet Connectivity transport

The InfoSet Connectivity transport enables the InfoSet driver to access InfoSets and SAP Queries.

- Authentication Helpers transport

This transport provides the Single Sign On enhancement for the SAP authentication plug-in. This enhancement frees users from having to enter their credentials more than once to access any of the BusinessObjects Enterprise, R3, and BW systems.

- Content Administration Workbench transport

This transport provides content administration functionality for BW systems. It is available only as a UNICODE compatible transport.

- BW Query parameter personalization transport

This transport provides support for personalized and default parameter values in reports based on BW queries.

### Note:

Read the `transports_EN.txt` file located in the `transports` directory on the installation CD. This text file lists the names of the files that make up each transport.

## Selecting which transports to import

Import the transports that are required for your R/3, mySAP ERP, or BW system. Select the Data Access components that you want, and import the required transports.

SAP System	Transport	Notes
R/3 or mySAP ERP	Open SQL Connectivity <ul style="list-style-type: none"> <li>• Row-level Security Definition</li> <li>• Cluster Definition</li> </ul>	
	InfoSet Connectivity	
	Authentication Helpers	Recommended. Required if you have installed the SAP Solution Tools Plug-in (ST-PI).
	Open SQL Connectivity <ul style="list-style-type: none"> <li>• Row-level Security Definition</li> <li>• Cluster Definition</li> </ul>	

SAP System	Transport	Notes
BW	InfoSet Connectivity	
	Authentication Helpers	Recommended. Required if you have installed the SAP Solution Tools Plug-in (ST-PI).
	Content Administration Workbench	Required.
	BW Query parameter personalization	Required.

## Checking for conflicts

The contents of the transport files are registered automatically under the Business Objects namespace when you import the files. The Business Objects namespace is reserved for this purpose within recent versions of R/3 and MYSAP ERP. However, object names for some objects such as authorization objects, authorization classes, and legacy objects may not contain the appropriate prefixes. It is recommended that you check these object types for conflicts prior to importing the transport files.

If the function group, any of the function modules, or any of the other objects already exists on the SAP system, then you must resolve the namespace before importing the BusinessObjects XI Integration for SAP transport files. Refer to your SAP documentation for the procedures appropriate to your version of SAP.

## Importing the transport files

Read the `transports_EN.txt` file located in the `transports` directory on the installation CD. This text file lists the exact names of the files that make up each transport. (The `cofiles` and `data` directories below the

transports directory correspond to the `.../trans/cofiles` and `.../trans/data` directories on your SAP server.)

You must import the Open SQL Connectivity transport before importing the Row-level Security Definition or the Cluster Definition transports. You may import the other transports in any order.

**Note:**

- After copying files from CD to server, ensure that all files are writable before you import the transports. Imports fail if the import files are read-only.
- Because the transports are binary files, on UNIX installations you must add the files by FTP in Binary mode (to avoid file corruption). In addition, you must have write permissions for the UNIX server.



# Authorizations

13

chapter



This section details the various SAP authorizations required when working with BusinessObjects XI Integration for SAP.

## Authorizations overview

This appendix provides a list of SAP authorizations that, in our experience and in our test environment, are required when carrying out common tasks with BusinessObjects XI Integration for SAP. Additional authorization objects or fields may be required, depending upon your individual implementation.

From each authorization object, you must create an authorization and define the appropriate field values. You then apply the appropriate authorizations to the profiles (or roles) of your SAP users. The following sections describe the required authorizations and provide you with the necessary field values. For procedural details that are specific to your version of SAP, refer to your SAP documentation.

### Note:

- The information in this appendix is provided as a guideline only.
- The ZSEGREPORT authorization object belongs to the ZSSI object class, which is installed when you import the BusinessObjects XI Integration for SAP transport files needed to support Open SQL queries.

## Creating and applying authorizations

Next you must create and apply the authorizations needed by each user to access information using the Desktop Intelligence Integration for SAP. The exact procedures for creating, configuring, and applying authorizations depend upon the version of SAP that you have installed.

[Creating and applying authorizations](#) provides a list of SAP authorizations that, in our experience and in our test environment, are required when carrying out common tasks with BusinessObjects XI Integration for SAP. Additional authorization objects or fields may be required, depending upon your individual implementation.

For information on the authorizations needed by content publishers, administrators of the content publishing tool, and users who view reports from within BW, see [Configuring publishing in the Content Administration Workbench](#).



# Actions in BW

This section guides you through a list of various actions in BW.

## From within Crystal Reports

This section guides you through a list of various actions in BW from within Crystal Reports.

### Creating a new report from a query in a BW role

Authorization object	Field	Values
S_USER_AGR	ACT_GROUP	<i>USER_ROLE*</i>
	ACTVT	01, 02, 06
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	RS_PERS_BOD
	ACTVT	16
S_CTS_ADMI	CTS_ADMFCT	TABL

Authorization object	Field	Values
S_RS_COMP	RSINFOAREA	<i>INFO_AREA</i> **
	RSINFOCUBE	<i>INFO_CUBE</i> **
	RSZCOMPTP	REP
	RSZCOMPID	<i>COMP_ID</i> **
S_RS_COMP1	RSZCOMPID	<i>COMP_ID</i> **
	RSZCOMPTP	REP
	RSZOWNER	<i>QUERY_OWNER</i> *
	ACTVT	16

\* *USER\_ROLE* denotes the name of any role that the user belongs to. You can enter multiple values in this field.

\* *QUERY\_OWNER* denotes the name of the owner of the query. If you specify a name, you can report off only those queries with that owner. Enter \* to report off of queries with any owner.

\*\*For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value. If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## Opening an existing report from a BW role

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SUSO, SUNI, RSCR, SH3A, RFC1, RZX0, RZX2, RS_PERS_BOD, /CRYSTAL/PERS, RSOB
	ACTVT	16
S_RS_COMP	RSINFOAREA	INFO_AREA**
	RSINFOCUBE	INFO_CUBE**
	RSZCOMPTP	REP
	RSZCOMPID	COMP_ID**
S_RS_COMP1	RSZCOMPID	COMP_ID**
	RSZCOMPTP	REP
	RSZOWNER	QUERY_OWNER*
	ACTVT	16

\* *QUERY\_OWNER* denotes the name of the owner of the query from which you are creating the report. If you enter the name of the query owner, you can only report off of queries with this owner. Enter \* to denote any query owner.

\*\* For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value. If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## Previewing or refreshing a report

Authorization object	Field	Values
S_RS_COMP	RSINFOAREA	<i>INFO_AREA</i> **
	RSINFOCUBE	<i>INFO_CUBE</i> **
	RSZCOMPTP	REP
	RSZCOMPID	<i>COMP_ID</i> **
S_RS_COMP1	RSZCOMPID	<i>COMP_ID</i> **
	RSZCOMPTP	REP
	RSZOWNER	<i>QUERY_OWNER</i> *
	ACTVT	16

\* *QUERY\_OWNER* denotes the name of the owner of the query from which you are creating the report. If you enter the name of the query owner, you

can only report off of queries with this owner. Enter \* to denote any query owner.

\*\* For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value. If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## Verifying the database (refreshing table definitions in a report)

Authorization object	Field	Values
S_RS_COMP	RSINFOAREA	<i>INFO_AREA</i> **
	RSINFOCUBE	<i>INFO_CUBE</i> **
	RSZCOMPTP	REP
	RSZCOMPID	<i>COMP_ID</i> **
S_RS_COMP1	RSZCOMPID	<i>COMP_ID</i> **
	RSZCOMPTP	REP
	RSZOWNER	<i>QUERY_OWNER</i> *
	ACTVT	16

\* *QUERY\_OWNER* denotes the name of the owner of the query from which you are creating the report. If you enter the name of the query owner, you can only report off of queries with this owner. Enter \* to denote any query owner.

\*\* For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value. If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## Setting the location of the data source

Authorization object	Field	Values
S_RS_COMP	RSINFOAREA	<i>INFO_AREA</i> **
	RSINFOCUBE	<i>INFO_CUBE</i> **
	RSZCOMPTP	REP
	RSZCOMPID	<i>COMP_ID</i> **
S_RS_COMP1	RSZCOMPID	<i>COMP_ID</i> **
	RSZCOMPTP	REP
	RSZOWNER	<i>QUERY_OWNER</i> *
	ACTVT	16

\* *QUERY\_OWNER* denotes the name of the owner of the query from which you are creating the report. If you enter the name of the query owner, you can only report off of queries with this owner. Enter \* to denote any query owner.

\*\* For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value.  
If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## Saving a report to a BW role

Authorization object	Field	Values
S_USER_AGR	ACT_GROUP	<i>USER_ROLE</i> *
	ACTVT	01, 02, 06
S_CTS_ADMI	CTS_ADMFCT	TABL

\* *USER\_ROLE* denotes the name of any role that the user belongs to. You can enter multiple values in this field.

## Preparing a report for translation while saving to BW

Authorization object	Field	Values
S_USER_AGR	ACT_GROUP	<i>USER_ROLE</i> *
	ACTVT	01
S_CTS_ADMI	CTS_ADMFCT	TABL

\* *USER\_ROLE* denotes the name of any role that the user belongs to. You can enter multiple values in this field.

## Saving a report and simultaneously publishing it to BusinessObjects Enterprise

Authorization object	Field	Values
S_USER_AGR	ACT_GROUP	<i>USER_ROLE</i> *
	ACTVT	01
S_CTS_ADMI	CTS_ADMFCT	TABL
S_RS_COMP	RSINFOAREA	<i>INFO_AREA</i> ***
	RSINFOCUBE	<i>INFO_CUBE</i> ***
	RSZCOMPTP	REP
	RSZCOMPID	<i>COMP_ID</i> ***
S_RS_COMP1	RSZCOMPID	<i>COMP_ID</i> ***
	RSZCOMPTP	REP
	RSZOWNER	<i>QUERY_OWNER</i> **
	ACTVT	16



\* *USER\_ROLE* denotes the name of any role that the user belongs to. You can enter multiple values in this field.

\*\* *QUERY\_OWNER* denotes the name of the owner of the query from which you are creating the report. If you enter the name of the query owner, you can only report off of queries with this owner. Enter \* to denote any query owner.

\*\*\* For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value. If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## Starting the Business Explorer Query Designer

Authorization object	Field	Values
S_RS_COMP	RSINFOAREA	<i>INFO_AREA</i> **
	RSINFOCUBE	<i>INFO_CUBE</i> **
	RSZCOMPTP	REP
	RSZCOMPID	<i>COMP_ID</i> **
S_RS_COMP1	RSZCOMPID	<i>COMP_ID</i> **
	RSZCOMPTP	REP
	RSZOWNER	<i>QUERY_OWNER</i> *
	ACTVT	16

Authorization object	Field	Values
S_CTS_ADMI	CST_ADMFCT	TABL

\* *QUERY\_OWNER* denotes the name of the owner of the query from which you are creating the report. If you enter the name of the query owner, you can only report off of queries with this owner. Enter \* to denote any query owner.

\*\* For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value. If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## From within InfoView

This section guides you through a list of various actions in BW from within InfoView.

## Logging on to BusinessObjects Enterprise with SAP credentials

Authorization object	Field	Values
S_ADMI_FCD	S_ADMI_FCD	ST0R, ST0M

## Viewing an SAP BW report on demand

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST, RSOB, SUNI
	ACTVT	16
S_RS_COMP	RSINFOAREA	<i>INFO_AREA**</i>
	RSINFOCUBE	<i>INFO_CUBE**</i>
	RSZCOMPTP	REP
	RSZCOMPID	<i>COMP_ID**</i>
S_RS_COMP1	RSZCOMPID	<i>COMP_ID**</i>
	RSZCOMPTP	REP
	RSZOWNER	<i>QUERY_OWNER*</i>
	ACTVT	16

Authorization object	Field	Values
S_RS_ODSO	RSINFOAREA	INFO_AREA**
	RSODSOBJ	0CRM_OLVM
	RSODSPART	DATA
	ACTVT	03

\* *QUERY\_OWNER* denotes the name of the owner of the query from which you are creating the report. If you enter the name of the query owner, you can only report off of queries with this owner. Enter \* to denote any query owner.

\*\* For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value. If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## Refreshing a report from the viewer

Authorization object	Field	Values
S_RS_COMP	RSINFOAREA	INFO_AREA**
	RSINFOCUBE	INFO_CUBE**
	RSZCOMPTP	REP
	RSZCOMPID	COMP_ID**

Authorization object	Field	Values
S_RS_COMP1	RSZCOMPID	<i>COMP_ID</i> **
	RSZCOMPTP	REP
	RSZOWNER	<i>QUERY_OWNER</i> *
	ACTVT	16
S_RS_ODSO	RSINFOAREA	<i>INFO_AREA</i> **
	RSODSOBJ	0CRM_OLVM
	RSODSPART	DATA
	ACTVT	03

\* *QUERY\_OWNER* denotes the name of the owner of the query from which you are creating the report. If you enter the name of the query owner, you can only report off of queries with this owner. Enter \* to denote any query owner.

\*\* For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value. If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## Scheduling a report

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST, RSOB, SUNI
	ACTVT	16
S_RS_COMP	RSINFOAREA	<i>INFO_AREA**</i>
	RSINFOCUBE	<i>INFO_CUBE**</i>
	RSZCOMPTP	REP
	RSZCOMPID	<i>COMP_ID**</i>
S_RS_COMP1	RSZCOMPID	<i>COMP_ID**</i>
	RSZCOMPTP	REP
	RSZOWNER	<i>QUERY_OWNER*</i>
	ACTVT	16

Authorization object	Field	Values
S_RS_ODSO	RSINFOAREA	INFO_AREA**
	RSODSOBJ	0CRM_OLVM
	RSODSPART	DATA
	ACTVT	03

\* *QUERY\_OWNER* denotes the name of the owner of the query from which you are creating the report. If you enter the name of the query owner, you can only report off of queries with this owner. Enter \* to denote any query owner.

\*\* For *INFO\_AREA*, *INFO\_CUBE*, or *COMP\_ID* enter \* to denote any value. If you specify a specific value, you can only report off of queries that contain these info areas, cubes, and component IDs.

## Reading dynamic picklists in report parameters

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST, RSOB
	ACTVT	16

# Actions in R/3 and mySAP ERP

This section guides you through a list of various actions in R/3 and mySAP ERP.

## From within Crystal Reports using the Open SQL driver

This section guides you through a list of various actions in R/3 and mySAP ERP from within Crystal Reports using the Open SWL driver.

### Logging on to an SAP server

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST, /CRYSTAL/OPENSQL
	ACTVT	16



## Creating a new report

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST, /CRYSTAL/OPENSQ
	ACTVT	16
ZSEGREPORT	ACTVT	01

## Opening or previewing an existing report

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST, /CRYSTAL/OPENSQ
	ACTVT	16
ZSEGREPORT	ACTVT	02

## Verifying the database (refreshing table definitions in a report)

Authorization object	Field	Values
S_ADMI_FCD	S_ADMI_FCD	ST0R, ST0M
ZSEGREPORT	ACTVT	02
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	/CRYSTAL/OPENSQ
	ACTVT	16

## Setting the location of the data source

Authorization object	Field	Values
ZSEGREPORT	ACTVT	02
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	/CRYSTAL/OPENSQ
	ACTVT	16

## From within Crystal Reports using the InfoSet driver, reporting off InfoSet

This section guides you through a list of various actions in R/3 and mySAP ERP from within Crystal Reports using the InfoSet driver, reporting off InfoSet.

### Logging on to an SAP server

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST
	ACTVT	16

### Creating a new report from an InfoSet on R/3 and mySAP ERP

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	/CRYSTAL/FLAT, SKBW, AQRC
	ACTVT	16

Authorization object	Field	Values
S_CTS_ADMI	CTS_ADMFCT	TABL

**Note:**

Also add enough authorizations to view data rows. For example, P\_ORIG or P\_APAP (see [Setting the location of the data source](#)).

## Verifying the database (refreshing table definitions in a report)

Authorization object	Field	Values
S_ADMI_FCD	S_ADMI_FCD	ST0R, ST0M

## Setting the location of the data source

Authorization object	Field	Values
P_ABAP	REPID	AQTGSYSTGENER- ATESY, SAPDBPNP
	COARS	2

## From within Crystal Reports using the InfoSet driver, reporting off an ABAP query

This section guides you through a list of various actions in R/3 and mySAP ERP from within Crystal Reports using the InfoSet driver, reporting off an ABAPA query.

### Logging on to an SAP server

Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST
	ACTVT	16

### Creating a new report from an ABAP query on R/3 and mySAP ERP

Authorization object	Field	Values
P_ABAP	REPID	AQTG02=====P6, SAPDBPNP
	COARS	2

Authorization object	Field	Values
S_ADMI_FCD	S_ADMI_FCD	ST0R, ST0M
S_TABU_DIS	ACTVT	03
	GROUP	Name of table group

### Verifying the database (refreshing table definitions in a report)

Authorization object	Field	Values
S_ADMI_FCD	S_ADMI_FCD	ST0R, ST0M
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SKBW
	ACTVT	16

## Setting the location of the data source

Authorization object	Field	Values
P_ABAP	REPID	AQTG02=====P6, SAPDBPNP
	COARS	2
S_ADMI_FCD	S_ADMI_FCD	ST0R, ST0M
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SKBW
	ACTVT	16
S_TABU_DIS	ACTVT	03
	GROUP	Name of table group

## From within BusinessObjects Enterprise

This section guides you through a list of various actions in R/3 and mySAP ERP from within BusinessObjects Enterprise.

## Scheduling a report in dialog mode (with an Open SQL query)

Authorization object	Field	Values
S_USER_GRP	CLASS	
	ACTVT	03
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST, RFC1, /CRYSTAL/OPENSQ
	ACTVT	16
ZSEGREPORT	ACTVT	02

### Note:

The value for CLASS is BLANK.

## Scheduling a report in batch mode (with an Open SQL query)

Authorization object	Field	Values
S_USER_GRP	CLASS	
	ACTVT	03



Authorization object	Field	Values
S_RFC	RFC_TYPE	FUGR
	RFC_NAME	SYST, RFC1, /CRYSTAL/OPENSQ, SH3A
	ACTVT	16
S_BTCH_JOB	JOBGROUP	' '
	JOBACTION	RELE
ZSEGREPORT	ACTVT	02
S_BTCH_ADM	BTCADMIN	Y

**Note:**

The value for CLASS is BLANK.

## Running and designing BW BeX queries

When creating a report from a universe based on a BW BeX query, if a date dimension is included, the system administrator needs to grant S\_RS\_IOBJ authorization to both the user designing the Universe and the user running the report.

Authorization object	Field	Values
S_RS_IOBJ	ACTVT	03
	RSIOBJ	
	RSIOBJ_CAT	
	RSIOBJ_PART	

## Crystal entitlement system

See [Creating a user account for BusinessObjects Enterprise](#) for a complete listing.



More Information



A

appendix



Information Resource	Location
SAP BusinessObjects product information	<a href="http://www.sap.com">http://www.sap.com</a>
SAP Help Portal	<p>Navigate to <a href="http://help.sap.com/businessobjects">http://help.sap.com/businessobjects</a> and on the "SAP BusinessObjects Overview" side panel click <b>All Products</b>.</p> <p>You can access the most up-to-date documentation covering all SAP BusinessObjects products and their deployment at the SAP Help Portal. You can download PDF versions or installable HTML libraries.</p> <p>Certain guides are stored on the SAP Service Marketplace and are not available from the SAP Help Portal. These guides are listed on the Help Portal accompanied by a link to the SAP Service Marketplace. Customers with a maintenance agreement have an authorized user ID to access this site. To obtain an ID, contact your customer support representative.</p>
SAP Service Marketplace	<p><a href="http://service.sap.com/bosap-support">http://service.sap.com/bosap-support</a> &gt; Documentation</p> <ul style="list-style-type: none"> <li>• Installation guides: <a href="https://service.sap.com/bosap-inst guides">https://service.sap.com/bosap-inst guides</a></li> <li>• Release notes: <a href="http://service.sap.com/releasenotes">http://service.sap.com/releasenotes</a></li> </ul> <p>The SAP Service Marketplace stores certain installation guides, upgrade and migration guides, deployment guides, release notes and Supported Platforms documents. Customers with a maintenance agreement have an authorized user ID to access this site. Contact your customer support representative to obtain an ID. If you are redirected to the SAP Service Marketplace from the SAP Help Portal, use the menu in the navigation pane on the left to locate the category containing the documentation you want to access.</p>

Information Resource	Location
Docupedia	<a href="https://cw.sdn.sap.com/cw/community/docupedia">https://cw.sdn.sap.com/cw/community/docupedia</a> Docupedia provides additional documentation resources, a collaborative authoring environment, and an interactive feedback channel.
Developer resources	<a href="https://boc.sdn.sap.com/">https://boc.sdn.sap.com/</a> <a href="https://www.sdn.sap.com/irj/sdn/businessobjects-sdclibrary">https://www.sdn.sap.com/irj/sdn/businessobjects-sdclibrary</a>
SAP BusinessObjects articles on the SAP Community Network	<a href="https://www.sdn.sap.com/irj/boc/businessobjects-articles">https://www.sdn.sap.com/irj/boc/businessobjects-articles</a> These articles were formerly known as technical papers.
Notes	<a href="https://service.sap.com/notes">https://service.sap.com/notes</a> These notes were formerly known as Knowledge Base articles.
Forums on the SAP Community Network	<a href="https://www.sdn.sap.com/irj/scn/forums">https://www.sdn.sap.com/irj/scn/forums</a>
Training	<a href="http://www.sap.com/services/education">http://www.sap.com/services/education</a> From traditional classroom learning to targeted e-learning seminars, we can offer a training package to suit your learning needs and preferred learning style.
Online customer support	<a href="http://service.sap.com/bosap-support">http://service.sap.com/bosap-support</a> The SAP Support Portal contains information about Customer Support programs and services. It also has links to a wide range of technical information and downloads. Customers with a maintenance agreement have an authorized user ID to access this site. To obtain an ID, contact your customer support representative.

Information Resource	Location
Consulting	<p><a href="http://www.sap.com/services/bysubject/businessobjectsconsulting">http://www.sap.com/services/bysubject/businessobjectsconsulting</a></p> <p>Consultants can accompany you from the initial analysis stage to the delivery of your deployment project. Expertise is available in topics such as relational and multidimensional databases, connectivity, database design tools, and customized embedding technology.</p>

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