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SAP BusinessObjects Explorer Administrator's Guide

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1 About this guide

This guide is for administrators who need to install and manage SAP BusinessObjects Explorer 4.1.

Most of the server administration tasks that apply to the Explorer servers are described in the *Business Intelligence Platform Administrator Guide* 4.1 available at the SAP Help portal: <http://help.sap.com>. These administration tasks are common tasks that can be affected to all servers in the CMS. This guide describes administration tasks specific to the Explorer servers in the CMS.

For information on how to use SAP BusinessObjects Explorer to explore corporate business intelligence data, see the [Help](#) or the updated User Guide PDF also at the SAP Help portal.

For information relating to the resources available in this release, refer to the related Documentation page in Related Links.

Related Information

[Related documentation \[page 5\]](#)

2 Related documentation

The following SAP documentation provides information for SAP BusinessObjects Explorer 4.1:

Information	Documentation	Location
List of known issues and workarounds.	SAP BusinessObjects 4.1 Release Notes	http://service.sap.com/release-notes
Supported platforms and third party software.	Product Availability Matrix	SAP Service Marketplace: http://service.sap.com/pam In the <i>Search</i> field, type: Explorer 4.1
List of the new features introduced with the latest release.	What's New in SAP BusinessObjects 4.1	SAP Help Portal: http://help.sap.com
Architecture and technical landscape of the SAP BusinessObjects Business Intelligence platform 4.1, as well as links to required documentation and SAP notes.	<ul style="list-style-type: none"> <i>Business Intelligence Platform Installation Guide</i> <i>Business Intelligence Platform Administrator Guide</i> <i>Business Intelligence Platform Web Application Deployment Guide</i> <i>Business Intelligence Platform Upgrade Guide</i> 	
Error messages explained	SAP BusinessObjects 4.1 Error Message Guide	
Explorer installation tasks	<i>SAP BusinessObjects Explorer Installation Guide</i>	
Explorer server administration tasks	<i>SAP BusinessObjects Explorer Administrator's Guide</i>	
End-user information on creating, managing and exploring data using the Explorer application interface.	<i>SAP BusinessObjects Explorer Online Help PDF</i> <i>SAP BusinessObjects Explorer Online Help Online Help</i>	Log into the application then click Help .

3 Deployment overview

3.1 Overview

SAP BusinessObjects Explorer 4.1 is installed as part of the SAP BusinessObjects Business Intelligence platform 4.1. The servers, information spaces, and users are managed by the Central Management Server (CMS) and administered from the Central Management Console (CMC).

The architecture of SAP BusinessObjects Explorer is structured into three layers:

- Clients
- Web tier/gateway - includes the web server(s) and web application server(s)
- Backend - includes the SAP BusinessObjects Explorer servers and the SAP BusinessObjects Business Intelligence platform servers.

Related Information

[The Explorer servers \[page 6\]](#)

[Supported data providers \[page 7\]](#)

[Supported platforms for SAP BusinessObjects Explorer \[page 7\]](#)

3.1.1 The Explorer servers

When you install SAP BusinessObjects Explorer, the following servers are added to the SAP BusinessObjects Business Intelligence platform Central Configuration Manager (CCM) and Central Management Console (CMC):

Server	Description
Explorer Master	Manages all of the Explorer servers.
Explorer Indexing	Provides and manages the indexing of Information Space data and metadata.
Explorer Search	Processes search queries and returns search results.
Explorer Exploration	Provides and manages the Information Space exploration and analysis capabilities including search on data, filtering and aggregation.

Each Explorer server manages its own index.

3.1.2 Supported data providers


SAP BusinessObjects Explorer 4.1 can consume data from the following data providers:

- BusinessObjects universes : .UNV and .UNX (relational)
- Excel spreadsheets
- SAP HANA
- SAP NetWeaver BW Accelerator
- SAP Lumira

Note

OLAP universes are not supported.

3.1.3 Supported platforms for SAP BusinessObjects Explorer

For detailed information on supported operating systems and web application servers, refer to the SAP Product Availability Matrix (PAM) at: <http://service.sap.com/pam> .

3.2 Distributed deployment scenarios

Implementing a distributed deployment scenario is recommended for larger and critical production deployments

Security

To optimize security in deployments using single or multiple master servers, the following deployment practices are recommended:

Master server deployment in	Recommendation
Small deployments where there is <ul style="list-style-type: none">• only one master, and• clients and servers all reside on the same network.	Activate SSL between all nodes .
Larger deployments where there are multiple masters	Connect Explorer servers and clients to separate subnets interconnected with the appropriate filtering device (router).

Master server deployment in

Recommendation

Note

This version of SAP BusinessObjects Explorer does not support Internet Protocol version 6 (IPv6) in a multiple master deployment.

When using multiple master servers, you can ensure that the master servers can communicate between themselves by:

- Verify that multicast is authorized in your network.
- Check that your firewall is not blocking the ports from 5701 to 570x, where 'x' is the number of Explorer master servers.
- Disable IPv6 on the system that hosts Explorer services.
- Set the 'master.cluster.name' Explorer application property variable.

Failover

If failover is a key requirement, you can deploy more than one Explorer Master Server to manage the other Explorer servers. The Master Servers work together to maintain the consistency of critical data.

Load balancing

SAP BusinessObjects Explorer supports the clustering of your web application server. Hardware or software load balancers can be used as the entry-point for the web application servers to ensure that the processing is evenly distributed among servers.

Note

The following persistence types are currently supported

- Source IP address persistence

For information about the use of supported load balancers for SAP BusinessObjects Business Intelligence platform, refer to the SAP Product Availability Matrix (PAM) at: <http://service.sap.com/pam>.

Related Information

[Network security \[page 55\]](#)

[Deploying Multiple Index Servers for Improved Indexing \[page 32\]](#)

[Deploying Multiple Explorer Servers for Improved Information Space Exploration \[page 32\]](#)

[Configuring the workload update setting for Load Balancing \[page 32\]](#)

4 System Management

4.1 Starting and stopping Explorer

The following Explorer servers can be started, stopped, or restarted within the SAP BusinessObjects Business Intelligence platform CMC:

- Explorer Master server
- Explorer Exploration server
- Explorer Indexing server
- Explorer Search server

For complete information on managing servers in the CMC, refer to the *Business Intelligence Platform Administrator Guide*.

To start SAP BusinessObjects Explorer:

1. Start your Web Application server.
2. Start your CMS database.
3. Start your SAP BusinessObjects Business Intelligence platform system.
If the Explorer servers are set to start up automatically, they are enabled at startup.
4. If you need to start Explorer servers manually, log into the SAP BusinessObjects Business Intelligence platform CMC, select the [Servers](#) option, navigate through the categories to [Explorer](#), and then [Start](#) or [Restart](#) enable the appropriate Explorer servers.
The Explorer servers are listed.

Related Information

[Related documentation \[page 5\]](#)

4.2 Connecting to datasources

4.2.1 Connecting Explorer to SAP HANA

There are two ways to connect Explorer to a SAP HANA data source:

- Directly by registering connection parameters in the application properties of the Explorer server in the CMC. This is a connection to a single SAP HANA data source.
- Using a secured connection in available in the CMC. This is a connection created in the information design tool and published to the repository. This connection can access multiple data sources.

Related Information

[Registering a SAP HANA data source \[page 10\]](#)

[Using a pre-defined connection to a SAP HANA data source \[page 11\]](#)

4.2.1.1 Registering a SAP HANA data source

You can connect SAP BusinessObjects Explorer directly to a SAP HANA data source by registering a SAP HANA appliance on the Explorer Application Properties configuration page in the Central Management Console (CMC). By setting the following parameters, you activate SAP BusinessObjects Business Intelligence platform database credentials and authentication mode for the SAP HANA system.

Application parameters	Values	Example
newdb.system.alias	The name of the New DB System name as it will appear in the "Manage Spaces" tab	newdb.system.alias=NDB
newdb.url	The JDBC url that will be used to connect to the New DB System. This URL contains the System host name and port as follows: newdb.url=jdbc:sap//<server name>:<port>	newdb.url=jdbc:sap//server1:30016
newdb.authentication.mode	<p><DatabaseMapping>: activates the use of the SAP BusinessObjects Business Intelligence platform "Database Credentials".</p> <p><ConfiguredIdentity>: allows the specification of a "fixed" user name / password. With this authentication mode, two extra parameters are required:</p> <ul style="list-style-type: none">• < newdb.user >• <newdb.password >	<p>newdb.authentication.mode=DatabaseMapping</p> <p>newdb.authentication.mode=ConfiguredIdentity</p> <p>newdb.user=system</p> <p>newdb.password=manager</p>

Note

<ConfiguredIdentity> authentication ensures that all users share the same database credentials. This type of authentication is more appropriate for development and test environments.

Note

To use SSO access to SAP HANA, you activate database credentials authentication mode by setting the "newdbauthentication.mode" parameter to "DatabaseMapping".

1. Log on to the SAP BusinessObjects Business Intelligence platform CMC.
2. Navigate to Servers and stop the Explorer servers.
3. Navigate to Applications.

4. Right-click Explorer and click Properties.
5. In the Advanced Configuration pane, set the application parameters described in the previous table.
6. Do one of the following:

If you entered	Then...
<ConfiguredIdentity>	Go to the final step.
<DatabaseMapping>	<p>You must enable the Database Credentials option in the CMC to ensure that the account name and password of the database are used automatically as connection parameters. Do this as follows:</p> <ul style="list-style-type: none"> • Navigate to a principle user group. • Open its Properties panel. • Select "Enable Database Credentials"

7. Save your changes and restart the Explorer servers.

4.2.1.2 Using a pre-defined connection to a SAP HANA data source

You can connect SAP BusinessObjects Explorer to one or more SAP HANA data sources by using a SAP BusinessObjects Business Intelligence platform connection stored in the repository. These connections are created in the information design tool and published to the repository.

Note

Only Relational connections are supported for .UNIX universes.

Refer to the information design tool user's guide for information on creating connections. This section describes the following:

- SAP HANA specific settings to define when you create the connection
 - Render the connection visible to Explorer
 - Verify the connection is available in Manage Spaces
 - Activate the Database Authentication mode
1. Start the information design tool from the SAP BusinessObjects Business Intelligence platform programs list.
 2. Start the New Relational Connection wizard.
 3. Follow the wizard steps to create a connection setting the following options:

Wizard page	Enter this information...
Database middleware driver selection	Select the JDBC driver under the node SAP HANA Appliance.

Wizard page	Enter this information...
Parameters for SAP High-Performance Analytic Appliance (SAP HANA)	<p>Authentication mode <i>Use specified user name and password:</i></p> <p>All BusinessObjects Enterprise users are connected to the database with the user name and password specified in the connection. All users share the same security profile.</p> <hr/> <p>Authentication mode <i>Use BusinessObjects credential mapping:</i></p> <p>SAP BusinessObjects Business Intelligence platform users are connected to the database with the user name and password specified in their profile (Database Credentials).</p>

4. Publish the new connection to the repository.
5. Verify that the SAP Hana connection appears in the Manage Spaces tab of Explorer.
6. If you selected Use BusinessObjects Credential Mapping, do the following:
 - a. Go to the Central Management Console (CMC) and select the user or group associated with the connection.
 - b. Open the group properties.
 - c. Select the Enabled check box.

4.2.1.3 Updating Explorer when SAP HANA version is updated

When installing or updating new versions of SAP HANA, Explorer should be also updated with the corresponding version of the SAP HANA JDBC driver.

Perform the following steps on all nodes containing Explorer:

1. Stop all Explorer servers:
 - Exploration
 - Indexation
 - Master
 - Search
2. Remove the old driver from the following directory:

```
$InstallFolder\SAP
BusinessObjects\Explorer14.0\plugins\com.sap.ngdbc_1.0.0\lib\ngdbc.jar
```

Note

The file can be deleted or moved to another directory that is not in the install folder.

3. Copy the new ngdbc.jar driver from the following directory `__installer.HDB\client\JDBC.TGZ\JDBC.tar\ngdbc.jar` to the location of the old driver.
4. Restart the Explorer servers.

4.2.2 Connecting Explorer to BWA

You connect SAP BusinessObjects Explorer with a designated SAP NetWeaver BW Accelerator from the SAP BusinessObjects Enterprise Central Management Console (CMC) administration page:

1. Stop the Explorer servers.
2. Log on to the BusinessObjects Enterprise CMC.
3. Navigate to [Servers](#) and stop the Explorer servers.
4. Navigate to [Manage Applications](#).
5. Right-click [Explorer](#) and click [Properties](#).
6. Within [Advanced Configuration](#) type the host and port values of the designated BWA.

For example:

```
com.businessobjects.datadiscovery.dataprovider.trex.host=<mybwaserver>  
com.businessobjects.datadiscovery.dataprovider.trex.port=3<TREX_instance_number>16
```

Note

This first entry should point to the blade with the first master name server (or at least to a blade with a master name server).

7. Optional: if you have one or more backup blades in place for your BW Accelerator landscape, you can also configure additional connections to those backup blades.

For example, to add two backup blades:

```
com.businessobjects.datadiscovery.dataprovider.trex.host1=<bwa_backup_blade1>  
com.businessobjects.datadiscovery.dataprovider.trex.port1=3<TREX_instance_number>16  
com.businessobjects.datadiscovery.dataprovider.trex.host2=<bwa_backup_blade2>  
com.businessobjects.datadiscovery.dataprovider.trex.port2=3<TREX_instance_number>16
```

8. Click [Save](#) and [Close](#).
9. Restart the servers.

4.2.3 Using an SAP alias to connect to BWA

You can connect to BWA using an SAP alias. To enable the login you need to add a new parameter to the advanced configuration text area of the Explorer application in the CMC. You do this as follows:

1. Stop all the Explorer servers.
2. Open the Applications page from the Central Management Console.
3. Double click Explorer in the application list
4. Add the following parameter to the Advanced Configuration text field:
`com.businessobjects.datadiscovery.dataprovider.trex.resolveUserSAPAlias`
5. Set the parameter to true as follows:
`com.businessobjects.datadiscovery.dataprovider.trex.resolveUserSAPAlias=true`

- Restart the Explorer servers.

4.3 Software Configuration

4.3.1 Web Application settings

You can modify application settings from a single properties file:

`default.settings.properties`

The file is stored under the web application server directory, for example: `C:\Program Files (x86)\SAP BusinessObjects\Tomcat6\webapps\explorer\WEB-INF\classes`.

You set the following parameters specific to Explorer in the `default.settings.properties` file:

Setting	Description	Example
<code>product.name</code>	For internal use only.	
<code>default.locale</code>	The default locale to use. For example, English.	<code>en</code>
<code>default.cms.name</code>	The name and port number of your CMS.	<code>myserver:6400</code>
<code>show.cms.name</code>	Determines if the value stored in <code>default.cms.name</code> is displayed in the CMS Name field of the Log On page.	
<code>disable.cms.name</code>	Disables the CMS name textbox within the Log On page. You cannot change the textbox value. The default value is TRUE.	
<div><div>📌 Note</div><div>Leave the default value unchanged to avoid security problems related to port scanning.</div></div>		
<code>default.authentication.method</code>	The default log on authentication to use. The value is displayed in the Authentication list of the Log On page.	<code>secEnterprise</code>
<code>authentications</code>	The values that populate the Authentication list.	<code>sec Enterprise,</code> <code>secWindowsNT,</code> <code>secLDAP</code>
<code>hide.authentication.method</code>	Determines if the Authentication list is displayed in the Log On page.	
<code>disable.authentication.method</code>	Disables the Authentication list within the Log On page. You cannot change the value.	

Setting	Description	Example
<code>use.effects</code>	Determines if graphical effects are to be used. For example, after clicking Log On the Log On box has a graphical effect applied to it.	
<code>request.timeout</code>	The period of time in seconds before Explorer times out after an operation. Explorer can time out when backend operations take too much time, for example, when: <ul style="list-style-type: none"> retrieving data from the data providers in the <i>Manage Spaces</i> tab performing operations on real-time basis such as SAP HANA or SAP Netweaver BW Accelerator retrieving data during the exploration of an information space or an exploration view set 	Default value: 60 100
<code>help.url</code>	The root location for the Explorer documentation.	
<code>tutorial.url</code>	The root location for the Explorer tutorial.	
<code>disable.password.encryption</code>	Determines if password encryption is to be used.	
<code>opendoc.url</code>	The OpenDocument URL of your BusinessObjects Enterprise deployment. It is used when a user exports Information Space data to a Web Intelligence query. Setting the value opens the query using OpenDocument. If you do not set the value, the query is not launched.	<code>http://server:port/OpenDocument/opendoc/opendocument.jsp</code>

Related Information

[Configuring SAP BusinessObjects Explorer for SAP authentication \[page 38\]](#)

4.3.2 Explorer server settings

Server properties are listed in the Object Properties list in the for each Explorer server in the CMC. Generic server properties are described in the Business Intelligence Platform Administrator Guide. This section describes properties are specific to Explorer servers.

You can configure the following settings:

- The unit to use for validating bookmarks; possible values include: `DAYS`, `MINUTES`, `HOURS`, or `WEEKS`.
- The period of time (based on the unit) that a bookmark is stored. For example 365.

- The period of time in milliseconds before a session object handled by an underlying watchdog is deleted.
- The delay in milliseconds between each update of when slave servers inform the master server about their workload to balance the load.

You can also configure the indexing path in order of priority using:

- A properties file for all servers on a single node.
- The SAP BusinessObjects Business Intelligence platform CMC server properties for a single indexing server on a single node.

Modifications you make to settings are implemented in the following order of priority:

- configurations made from the command line for each server within the CMC for a single server on a single node
- configurations made directly in a properties file for all servers on a single node
- configurations made via the CMC application properties for all nodes within your deployment cluster

For example, if you configure the settings using a properties file on a node, the CMC settings are ignored for that node.

4.3.2.1 Information Space indexes path

You can specify where you want the indexes to be stored. You can either set the indexing path from the SAP BusinessObjects Business Intelligence platform CMC or create a properties file and specify the index path there.

Note

When changing a directory for index storage, you must ensure that Explorer directories are not shared by multiple Explorer servers. Each Explorer server needs to have its own unique directory. In a distributed environment where multiple Explorer servers are installed on multiple boxes, Explorer replicates the indexes from each Explorer directory to all other Explorer directories in the system. This means that all Explorer servers should have the same number of total indexes.

Related Information

[Configuring the index path using the CMC \[page 16\]](#)

[Configuring the index path using a properties file \[page 17\]](#)

4.3.2.1.1 Configuring the index path using the CMC

To change the indexing path for a single indexing server, edit the server properties within the CMC. The indexing path is dependent on your installation path and is defaulted to:

- %DefaultDataDir%/Explorer14.0/index

1. Logon to the CMC.
2. Navigate to the Explorer Indexing server you want to configure from [Servers](#).
3. Right-click the server and click [Properties](#).
4. From [Index Files Directory](#), enter a path.
5. Click [Save](#).

Note

If you copy existing indexes to the new location, the Explorer Indexing Server has to be stopped.

6. Restart the server.

4.3.2.1.2 Configuring the index path using a properties file

You can change the indexing path for all servers on a single node, by creating or editing a properties file.

1. Create or edit a properties file named `explorer.service.properties` located under:

- C:\Program Files (x86)\SAP BusinessObjects\Explorer14.0\

Add this entry:

- `index.path=C:/Index`

2. Amend the value accordingly and save the file.
3. Restart the servers.

Note

If you copy existing indexes, the Explorer Indexing Server has to be stopped.

4.3.2.2 Session timeout period

The Explorer Master Server ensures that unnecessary resources are released efficiently. The session object is deleted when the associated peer stops operating or when the underlying network is lost. A watchdog service observes all network activity.

The `watchdog.timeout` parameter specifies the duration of time (in milliseconds) a live session is considered active even if the watchdog detected no activity.

Note

It is necessary for the `watchdog.timeout` parameter value to be superior to the timeout value set for the http session. If this is not the case, the Explorer session can expire even though the http session is still valid.

To change the session timeout period, an administrator can do one of the following:

Action	How?
Change a setting for a single node.	<ol style="list-style-type: none"> 1. Create or edit a properties file named <code>explorerr.service.properties</code> located under: <code>C:\Program Files (x86)\SAP BusinessObjects\Explorer14.0\</code> 2. Add this entry: <code>watchdog.timeout=300 000</code>, amend the value accordingly and restart the servers.
Modify the command line to configure a single server.	<p>Add <code>-watchdog.timeout 300 000</code> to the command line to configure a single server</p> <p>For example <code>-loggingPath "C:/Program Files (x86)/SAP BusinessObjects/Explorer14.0/Logging/" -serverkind polestarMaster -trace true -watchdog.timeout 300 000</code></p>

Note

The default value of `watchdog.timeout` is 300 000 milliseconds (5 minutes). Changing the setting, especially if the specified value is too low, can impact stability and possibly delete a valid session. This value must be greater than the value of `workload.update.delay`. The `workload.update.delay` parameter specifies the duration of time (milliseconds) between updates to the Explorer Master Server.

4.3.2.3 Request timeout limit

Timeouts may occur while using large datasets. If users come across a timeout error message when using SAP BusinessObjects Explorer, follow the instructions below.

Workaround: It is necessary to change the default `request.timeout` setting (in seconds) located within:

`C:\Program Files (x86)\SAP BusinessObjects\Tomcat6\webapps\explorer\WEB-INF\classes\default.settings.properties`

To do this:

1. Open for edit the `default.setting.properties` file.
2. Locate the `request.timeout` setting.
3. Change the setting accordingly.

Caution

Defining a large value affects the waiting time for users.

Option	Description
-1	Deactivate timeout limit
360	Maximum value for timeout.

4. Save the file.
5. Restart the Explorer servers.

The timeout is changed according to the new value.

4.3.2.4 Bookmark validity

The bookmark validity period is the duration at which bookmarks of the exploration views (or filtered versions of Information Spaces) created by end users remain saved on the Explorer Application Server. Once this duration expires, the bookmark can no longer be opened. There are three methods to configure the validation duration for bookmarks. See Related Topics, below, for details.

Note

Administrators are advised to communicate the duration of bookmarks to Explorer end users, so that users know how long any bookmarks they save will remain valid.

Related Information

[Configuring the bookmark validity period from the CMC \[page 19\]](#)

[Configuring the bookmark validity period from the server command line within the CMC \[page 20\]](#)

[Configuring the bookmark validity period using a properties file \[page 20\]](#)

4.3.2.4.1 Configuring the bookmark validity period from the CMC

To change the bookmark validation period from the SAP BusinessObjects Business Intelligence platform CMC, amend the value within the CMC administration page. The value is taken into account by all slave nodes after the Explorer servers have been restarted.

Note

The new bookmark validation value applies only to bookmarks created after the new value has been set and Explorer servers restarted. All bookmarks created prior to the change, and server restart, persist until the default expiry date.

1. Logon to the CMC.
2. Navigate to ► *Manage* ► *Applications* ►.
3. Right-click *Explorer* and click *Properties*.
4. Change the *Bookmark validity* values and click *Save*.
5. Restart the *Explorer* servers.

4.3.2.4.2 Configuring the bookmark validity period from the server command line within the CMC

To change the Explorer validity period for a single server, edit the server properties within the SAP BusinessObjects Business Intelligence platform CMC.

1. Logon to the CMC.
2. Navigate to the Explorer server you want to configure via [Servers](#).
3. Right-click the server and click [Properties](#).
4. Within [Command Line Parameters](#), add the following:
`-bookmark.validity.time 365 -bookmark.validity.unit DAYS`

For example:

```
-loggingPath "C:/Program Files (x86)/SAP BusinessObjects/Explorer14.0/Logging/"  
-serverkind polestarIndexing -trace true -bookmark.validity.time 365  
-bookmark.validity.unit DAYS
```

5. Click [Save](#).
6. Restart the [Explorer](#) servers.

4.3.2.4.3 Configuring the bookmark validity period using a properties file

You can change the Explorer bookmark validity for all servers on a single node, by creating or editing a properties files.

1. Create or edit a properties file named `explorer.service.properties` located under:
 - `C:\Program Files (x86)\SAP BusinessObjects\Explorer14.0\`
2. Add the following entries.

```
bookmark.validity.time=365  
  
bookmark.validity.unit=DAYS
```

3. Amend the value accordingly and save the file.
4. Restart the servers.

4.3.2.5 Increasing virtual memory on the Explorer servers

The amount of virtual memory required by the Explorer servers depends on the size of the Information Spaces being explored and indexed across your deployment. You can increase the amount of virtual memory available on each server by changing the JVM heap size value as necessary:

- If a large number of end users need to explore large Information Spaces, it is recommended you increase the JVM heap size value on your Exploration Server(s).

- If you have a lot of users indexing, it is also recommended you increase the JVM heap size value on your Explorer Indexing Servers.

By default, the JVM heap size value is 1 GB. In most cases, this is sufficient for the Master server(s) and Search Server(s).

The JVM heap size has an influence on the following:

- Memory garbage collection
For example, having a large heap size for the Indexing Server(s) reduces the rate of garbage collection of memory during indexing, thus improving performance. If the heap size is small, scheduling spends more time to free (and retrieve) memory than executing the required task. A heap size of 1.6 GB decreases the rate of garbage collecting in most cases.
- Swapping memory to hard disk
The JVM heap size value you define should always be lower than the amount of physical memory available on the server. Having a low amount of physical memory and configuring large values for the heap size of each server results in the swapping of memory to the hard disk. For example, if there is 2 GB of RAM, it is not efficient to provide a heap size of 1024 MB for each Explorer server. SAP BusinessObjects Explorer functions correctly but memory swapping occurs, therefore having an impact on performance.

4.3.2.5.1 Configuring the JVM heap size value

Verify the memory limit you can configure for a server and the JVM. The heap size is dependent on the hardware and software used. For example, a Windows 32-Bit or a Windows 64-Bit operating system, the version of the JVM and the amount of physical memory installed.

Refer to the *Business Intelligence Platform Administrator Guide* for information on configuring memory size.

Related Information

[Related documentation \[page 5\]](#)

4.3.2.6 Concurrent Excel file uploads

As an administrator of Explorer you can configure how many concurrent upload operations of Excel files can be processed. By default the value is 30 concurrent Excel upload operations.

4.3.2.6.1 Configuring the number of possible concurrent Excel uploads

As an administrator of the Explorer you can configure how many concurrent upload operations of Excel files can be processed. By default the value is 30 concurrent Excel upload operations.

1. Log into the CMC.
2. Navigate to: [Applications](#) > [Explorer](#) > [Properties](#) > [Advanced configuration](#)
3. Enter the following parameter and specify the value of your choice.

```
com.businessobjects.datadiscovery.max_nb_parallel_indexing_tasks
```

For example:

```
com.businessobjects.datadiscovery.max_nb_parallel_indexing_tasks=50
```

The parameter change is taken into account immediately.

4.3.2.7 Limiting rows and cells when exporting to Excel

You can set a limit on the number of rows or cells that can be exported to an Excel spreadsheet.

You can manage large data sets when exporting to Excel by adding the following parameters to the Explorer Application page in the Central Management Console (CMC):

Parameter	Description
export.csv.maxrows	Set a value for the maximum number of rows to export.
export.csv.maxcells	Set a value for the maximum number of cells to export. Set to -1 if you only want to manage the maximum number of rows.

1. Go to the [Applications](#) area of the CMC.
2. Double click [Explorer](#) under [Application Name](#).
3. In the [Advanced Configuration](#) section add and specify values for `export.csv.maxrows` or `export.csv.maxcells`.
4. Click [Save & Close](#).

4.3.2.8 Enabling specific metadata languages in SAP HANA Cubes

Perform the following steps to allow SAP BusinessObjects Explorer to use the locales of your choice from the list of languages configured in SAP HANA.

The translation of data and metadata must be configured in SAP HANA.

For more information, refer to the SAP HANA Administration documentation. This guide is available on the SAP Help Portal at <http://help.sap.com>.

1. Log on to the CMC.
2. Navigate to the [Manage](#) area and click [Applications](#).
3. Right-click [Explorer](#) and select [Properties](#) from the contextual menu.
4. In the [Advanced Configuration](#) field, add the following parameter, followed by a list of comma-separated locales using the `lc_CC` format:

```
newdb.metadata.search.locales=lc_CC.
```

For example, if you want the metadata to be displayed in American English, in French from France, and in Canadian French, enter the parameter as follows:

```
newdb.metadata.search.locales=en_US,fr_FR,fr_CA
```

5. Click [Save](#).
6. Restart the Explorer servers.

This parameter will apply the next time an information space is indexed.

4.3.3 Standardizing font usage across your deployment

The fonts used to display character strings in Information Spaces are provided by the font libraries on the clients and servers across your SAP BusinessObjects Explorer deployment:

- The Exploration servers supply the fonts used to display the character strings on charts.
- The client machines logged into SAP BusinessObjects Explorer supply the fonts used to display the character strings in the rest of the application GUI.

If the fonts installed on the Exploration servers do not match the fonts on the clients, the character strings in the charts and the rest of the application GUI display with different fonts.

4.3.3.1 Ensuring font compatibility across clients and servers

The Arial Unicode J font is matched by the Arial Unicode MS font on most Microsoft Windows client machines. This provides a standard display for character strings throughout the application GUI.

You can ensure font compatibility across your deployment as follows:

1. Verify that a font compatible with the Arial Unicode J font is installed on your client machines, and if you implement a distributed deployment architecture, on each Explorer server.

ⓘ Note

On most Microsoft Windows client machines, the Arial Unicode MS font is compatible with Arial Unicode J.

2. On each client machine or Explorer server that does not have a compatible font, install Arial Unicode J.

ⓘ Note

The Arial Unicode J font is available in the following directory of the SAP BusinessObjects Explorer server once you have installed the application: `<BusinessObjects_Explorer_InstallDir>/Explorer14.0/jre/lib/fonts`

4.3.3.4 Configuring custom fonts for the interface outside of charts

For SAP BusinessObjects Explorer to use custom fonts, the fonts must first be installed on the servers and client machines.

You can define a specific custom font or font size globally for all languages, and also for specific languages, to override the global setting.

1. Open the `<install_dir>\webapps\explorer\schema\chinese.css.example\` file for edit.
2. Replace the default font name and size with the font and size of your choice:

```
global {  
  font-family: Arial Unicode J, Arial Unicode MS, Arial, Sans-serif;  
  font-size: 13pt;  
}
```

Information

The fonts are specified in order of preference. If the first font in the list is not available, the second font is used; if the second font is not available, the third font is used, and so on.

Note

If a different font size is specified for a particular interface label, such as ToolTips, then the global font size is overridden in that particular type of label.

3. Where you save the file depends on whether you want to apply these settings globally, to all languages, or just to a specific language:
 - To apply the settings to all languages, rename the file as `global.css` and save it to:
`<install_dir>\webapps\explorer\schemas\global\global.css\`
 - to apply the settings to a specific language, rename the file as
`<language>.css` and save it to a sub-folder named with the language code for that language as follows: `<install_dir>\webapps\explorer\schemas\global\
<language_code>\<language>.css\`
For example, for Chinese, you would save the file as follows:
`<install_dir>\webapps\explorer\schemas\global\zh_CH\chinese.css\`

Note

As the `css` files control all of the display properties, it is recommended you only modify the values for these specified parameters.

4. Restart the Exploration servers.

4.3.4 Customizing the geography names repository

You can add a custom repository to enable a customized list of geo-locations to be used as a data source for the geography dimension.

You can create a custom geographical repository to do the following:

- Add geographic aliases for city values in the database
- Create new city locations using latitude and longitude coordinates

You create each repository in a separate XML file using the Navteq geography repository file syntax. You upload the files to a folder in the CMS, and then add one of the following new repository parameters to the advanced properties of the Explorer application in the Central Management Console (CMC):

For this XML repository file	Add this parameter
Adding alternative city names	custom.geo.repository.renamednames.file.cuid
Adding new city names	custom.geo.repository.explorer.file.cuid

You set the unique identifier (CUID) value of each repository XML file to the appropriate parameter.

The custom geography repositories use information from the main geography names repository called `names.csv` stored in a compressed .JAR file installed here: `<INSTALLDIR>\SAP BusinessObjects\Explorer 14.0\plugins\com.sap.geo.repository.names.navteq.levels012c_<version number>.jar`

The syntax and the procedure to create the geography repositories are described in Related Topics.

Related Information

[Geography repository file syntax \[page 30\]](#)

[Adding new cities to the geography repository \[page 28\]](#)

[Adding alternative location names to the geography repository \[page 26\]](#)

4.3.4.1 Adding alternative location names to the geography repository

You can add city names for geography dimension values that are alternatives to those used by the Navteq `names.csv` repository file. These are added as aliases in a customized geography repository. To create a new repository, you need to have access to the Explorer installation file system, and have Administrator rights to use the Central Management Console.

The alternative geography names repository is an .XML file that contains city and parent identifiers from the parent `names.csv` repository file, and a customized name for an existing city entry. The file is uploaded to a folder in the CMS, and the CUID for the file is passed as a value to a new parameter `custom.geo.repository.renamednames.file.cuid` that you add manually to the properties for the Explorer application in the CMC.

1. Create a new .XML file in a text editor. Save it locally and give it a relevant name, for example `custom_renamed_repository.xml`.
2. Open the Navteq repository file `names.csv` in a text editor. The repository file is contained in a compressed .JAR file installed here: `<INSTALLDIR>\SAP BusinessObjects\Explorer 14.0\plugins\com.sap.geo.repository.names.navteq.levels012c_<version number>.jar`.

Note

The .JAR name is variable depending on the build number installed on your machine, but is similar to this: `navteq.levelso12c_3.2.0.r606_v20120131.jar`.

3. In the `names.csv` file, search for the name of the city that you want to alias.
If there is more than one occurrence of the city, then search the file using the parent ID, this is the second ID number on the line, and is the city's region identifier. Once you have the correct region, then you most likely have the correct city. For example if you are searching for London in the UK, one entry for London is the following:

```
"C20337455" "20248595" "c" "London" "eng" "false" "false" "OFFICIAL"
```

To ensure that this is the correct London, search the file for parent ID 20248595. This is the ID of the region for the city that you want to alias. The search finds:

```
"20248595" "UK" "1" "England" "eng" "false" "false" "OFFICIAL"
```

So England is the parent region. You can check further by searching the second identifier `UK`. This is the parent identifier that identifies the country. This returns:

```
"UK" "" "0" "United Kingdom" "eng" "false" "false" "OFFICIAL"
```

The United Kingdom is the parent country, and there is no further geographical parent, so this London entry, is the correct London, England, UK.

4. Copy the entry for the city from the `names.csv` file and paste it in the new .XML file.
In this example you copy and paste the entry for London:

```
"C20337455" "20248595" "c" "London" "eng" "false" "false" "OFFICIAL"
```

5. Change the city name to the modified city name that you want to use instead of the entry in the `names.csv` file.

For example the London entry is changed to return "London City" as a value:

```
<locations>
<location id="C20337455" parent="20248595" name="London City" type="OFFICIAL"
lang="eng" exonym=
false" transliteration="false" />
</locations>
```

6. Save the new .XML file.
7. Upload the new .XML file to a folder in the Central Management Console (CMC).
8. From the CMC do the following:
 - a. Open the folder and right click the .XML file. Click Properties and copy the CUID value for the file. This is the unique identifier in the CMS for the file. Click Cancel.
 - b. Click the CMC Home icon or select CMC Home from the Central Management Console drop down list at the top right of the console window.
The CMC Home page appears.
 - c. Click the Applications icon, or select Applications from the Central Management Console drop down list at the top right of the console window.
 - d. Double click the Explorer entry in the Application name column.

- e. In the properties panel, add the following parameter:
`custom.geo.repository.renamednames.file.cuid`. Set the value to the CUID of the new repository file.

For example if the CUID value for the file `custom_renamed_repository.xml` is `ATavVgn075lKjaoRA2sTals`, then the parameter you add is :

```
custom.geo.repository.renamednames.file.cuid = ATavVgn075lKjaoRA2sTals
```

- f. Click Save and Close.

9. Restart the Explorer Index and Master servers.

In this example, when you select values for a geography dimension in Explorer, you can choose London City as a city value.

Related Information

[Geography repository file syntax \[page 30\]](#)

4.3.4.2 Adding new cities to the geography repository

You can add new city names to a customized geography repository that are made available as geography dimension values. To create a new repository, you need to have access to the Explorer installation file system, and have Administrator rights to use the Central Management Console.

A new geography repository is an .XML file that contains a location identifier from the parent `names.csv` repository file, a custom identifier and location coordinates for a new city entry. The file is uploaded to a folder in the CMS, and the CUID for the file is passed as a value to a new parameter `custom.geo.repository.explorer.file.cuid` added to the properties for the Explorer application in the CMC.

1. Create a new .XML file in a text editor. Save it locally and give it a relevant name, for example `custom_newcity_repository.xml`.
2. Open the Navteq repository file `names.csv` in a text editor. The repository file is contained in a compressed .JAR file installed here: `<INSTALLDIR>\SAP BusinessObjects\Explorer 14.0\plugins\com.sap.geo.repository.names.navteq.levels012c_<version number>.jar`.

Note

The .JAR name is variable depending on the build number installed on your machine, but is similar to this: `navteq.levels012c_3.2.0.r606_v20120131.jar`.

3. In the `names.csv` file, find the parent regional ID for the city that you want to add. For example to add the city of Levallois in France, you search for Ile-de-France (ID = 20002126) which is the regional parent of Levallois.
4. In the new .XML file, add the following parameters:

Option	Description
Feat ID	Identifier for the new city line. You assign a number. It can be any number, as long as it is unique in the new repository file.
parent	Identifier for the parent region of the new city. This is the same as the parent id in the names.csv.
name	Your new city entry.
latitude	Latitude coordinates of the city
longitude	Longitude coordinates of the city.

Refer to Geography repository file syntax section in Related Topics for a description of the correct syntax in the repository file.

Note

The easiest way to create an entry is to copy an existing entry for a city in the `names.csv` file to the new repository file, and modify the location id, name, and add the latitude and longitude coordinates.

For example, the Levallois city addition would be the following:

```
<locations>
  <location id="100" parent="20002126" name="Levallois-Perret"
  type="OFFICIAL" lang="fra"
  exonym="false" transliteration="false" latitude="48.89829696596768"
  longitude="2.278434634208679" />
</locations>
```

5. Save the new .XML file.
6. Upload the new .XML file to a folder in the Central Management Console (CMC).
7. From the CMC do the following:
 - a. Open the folder and right click the .XML file. Click Properties and copy the CUID value for the file. This is the unique identifier in the CMS for the file. Click Cancel.
 - b. Click the CMC Home icon or select CMC Home from the Central Management Console drop down list at the top right of the console window.
The CMC Home page appears.
 - c. Click the Applications icon, or select Applications from the Central Management Console drop down list at the top right of the console window.
 - d. Double click the Explorer entry in the Application name column.
 - e. In the properties panel, add the following parameter:
`custom.geo.repository.explorer.file.cuid` . Set the value to the CUID of the new repository file.
For example if the CUID value for the file `custom_newcity_repository` is `AfMRhpbRaqRXXXskIJZQ3Uo` , then the parameter you add is :
`custom.geo.repository.explorer.file.cuid = AfMRhpbRaqRXXXskIJZQ3Uo`
 - f. Click Save and Close.
8. Restart the Explorer Index and Master servers.

In this example, when you select the values for a geography dimension in Explorer, the city Levallois-Perret is available localized in the Ile-de-France region.

Related Information

[Geography repository file syntax \[page 30\]](#)

4.3.4.3 Geography repository file syntax

This section describes the syntax that must be followed in the customized geography XML repository files.

The repository must conform to these constraints to be parsed correctly:

- The file is in .XML format.
- Use the exact format for each new or modified location. Failure to do so causes a parsing error so the entire file is ignored.
- Each location is represented by an element, you must use a separate element for each location.
- Attributes are used for the values.
- Attributes can be in any order.
- There must be at least one location.

A typical entry in the `names.csv` is as follows:

```
"C20337455" "20248595" "c" "London City" "eng" "false" "false" "OFFICIAL"
```

The attributes used in `names.csv` and the .XML files are described as follows:

Column	Example	Description	Mandatory in renamed names XML repository	Mandatory in new names XML repository
Feature ID	"C20337455"	Unique feature ID of a geographic location. String.	Yes	Yes. Must be a unique value. For example, if you use 100 as the first ID, then for each location increment: location 1's id = 100, location 2's id = 200 etc.
Parent ID	"20248595"	Unique parent ID of a geographic location. String.	Yes	No. Optional, if given, then contributes to the context of the feature (the parents) when we are searching for it during reconciliation.
Admin Level	"c"	The administrative level of the geographic location. (0 -> Country, 1 -> Sub Admin Level1, 2 -> Sub Admin Level2, c -> City). String.	N/A	N/A

Column	Example	Description	Mandatory in renamed names XML repository	Mandatory in new names XML repository
Name	"London City"	The name of the geographic location. This is the alias that you add. String.	Yes	Yes
Language ISO code	"eng"	The ISO 639 language code for the geographic location entry, for example "fra" is French. String.	Yes	Yes
Is Exonym?	"false"	Is the geographic location entry an exonym? An exonym is a word used in another language for the geographical location. For example "Londres" is an exonym (French) for London. Boolean.	Yes	Yes
Is Transliteration?	"false"	Is the geographic location entry a transliteration? A transliteration is the spelling of a location in one language using the alphabet of another language. Boolean.	Yes	Yes
Name Type	"OFFICIAL"	The type of the Name of the geographic location entry. (OFFICIAL -> Official name, ISO_3166_1_A3 - three-letter ISO code, ABBREVIATION - an abbreviation) String.	Yes . Must be OFFICIAL, ISO_3166_1_A3, or ABBREVIATION	Yes . Must be OFFICIAL, ISO_3166_1_A3, or ABBREVIATION
Latitude	latitude="49.996595"	The latitude coordinate of the new location.	N/A	Yes. Must be a valid coordinate.
Longitude	longitude="8.582726"	The longitude coordinate of the new location.	N/A	Yes. Must be a valid coordinate.

4.4 Load Balancing

SAP BusinessObjects Explorer supports the clustering of your web application server. Hardware or software load balancers can be used as the entry-point for the web application servers to ensure that the processing is evenly distributed among servers.

Information

For information about load balancing for SAP BusinessObjects Business Intelligence platform, refer to the SAP Product Availability Matrix (PAM) at: <http://service.sap.com/pam>.

Related Information

[Related documentation \[page 5\]](#)

4.4.1 Configuring the workload update setting for Load Balancing

The workload is balanced by ensuring that servers with the least load have a higher job priority. Slave servers (within a cluster) ensure that the Explorer Master Server is periodically updated with their workload costs.

The `workload.update.delay` parameter specifies the duration of time (in milliseconds) between updates to the Explorer Master Server.

To change the workload update delay period, an administrator can either:

- Change a setting for a single node. Create or edit a properties file named `explorer.service.properties` located under:
 - `<SAP BusinessObjects installdir>\Explorer14.0\`Add this entry: `workload.update.delay=30`, amend the value accordingly, and restart the servers.
- Add the following to the command line to configure a single server:
`-workload.update.delay 30`
For example:
`-loggingPath "C:/Program Files (x86)/SAP BusinessObjects/Explorer14.0/Logging/"`
`-serverkind polestarMaster -trace true -workload.update.delay 30`

Note

The default value of `workload.update.delay` is 15 000 milliseconds. Altering the setting (especially if the specified value is too low) can have an impact on network traffic and performance. The value must be significantly smaller than the value of `watchdog.timeout`.

4.4.2 Deploying Multiple Explorer Servers for Improved Information Space Exploration

If the main activity of your user population is exploration, then it is recommended you deploy SAP BusinessObjects Explorer in a cluster with additional Explorer servers to ensure maximum performance when users navigate Information Spaces.

Deploying a high-end machine to the cluster improves the performance and lowers any server constraints.

Related Information

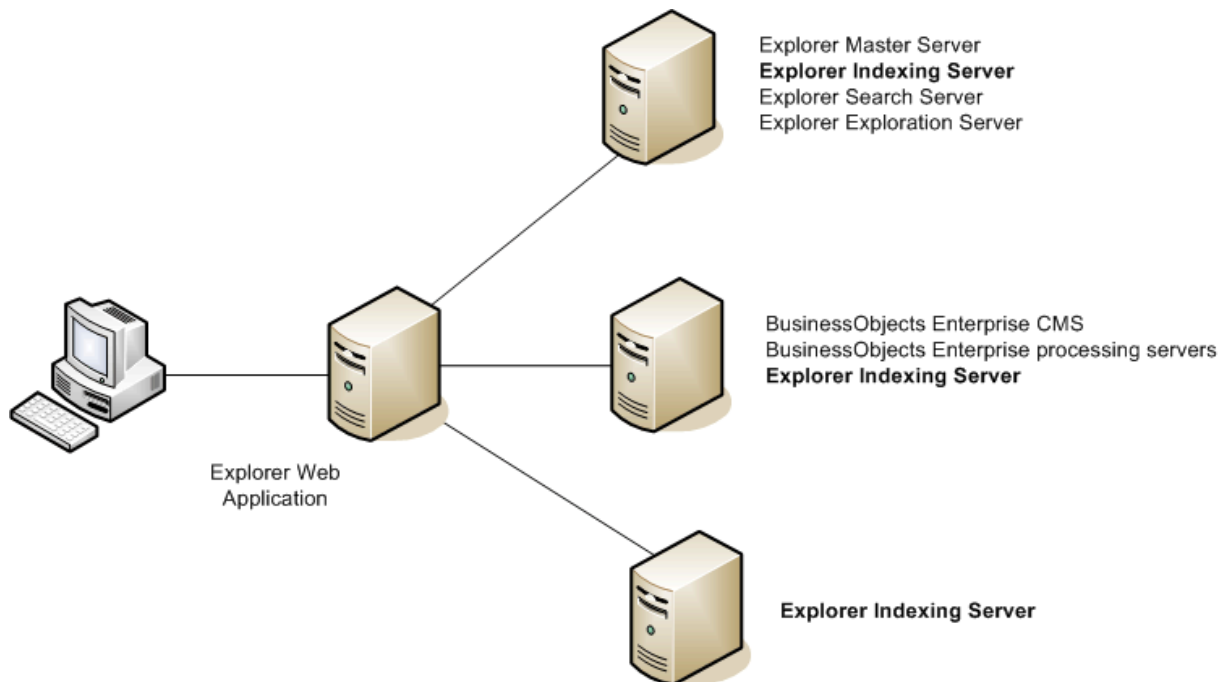
[Explorer User Profiles \[page 34\]](#)

4.4.3 Deploying Multiple Index Servers for Improved Indexing

The indexing of Information Spaces is dependent on the following:

- the number of Explorer servers deployed and how they are deployed
- the hardware (CPU, memory, hard disk) used for Explorer servers
- the Java Virtual Machine heap

If your aim is to improve indexing performance, it is recommended you put one installation of all four Explorer servers (Master, Indexing, Search, and Exploration) on the machine where SAP BusinessObjects Business Intelligence platform is installed, and additional Explorer Indexing Servers on separate machines, ensuring they are directed to the SAP BusinessObjects Business Intelligence platform installation. The indexing load is shared across all the indexing servers.



The number of servers required is dependent on the number of users expected to use SAP BusinessObjects Explorer. For example, if you expect a high number of users indexing the large Information Spaces at the same time (an extreme scenario), then an additional server is required. Indexing many Information Spaces has an impact on explorers while they are exploring. It is recommended you schedule Information Spaces for indexing when there is less activity, such as over night.

Related Information

[Indexing best practices \[page 53\]](#)

[Related documentation \[page 5\]](#)

4.5 Periodic Tasks

4.5.1 Verifying Information Space indexes

It is recommended that administrators verify that indexes are up to date at regular intervals. To do this:

1. Log into SAP BusinessObjects Explorer with a Space Creator or Administrator profile.
2. Select the *Manage Spaces* tab.
3. View the lists of Information Spaces and verify that the Index icon is green for all of the Information Spaces.
4. In the case of an *Index* icon being red, it is necessary to re-index the Information Space. You can either click *Index Now* or schedule indexing by selecting *Edit* next to the appropriate Information Spaces and then defining a schedule.

4.6 User Administration and Authentication

4.6.1 User Management

4.6.1.1 Managing users and groups

User profiles are managed and stored in the Central Management Server (CMS). The administration console you use to manage the user profiles is the Central Management Console (CMC).

For information on creating users and groups, and assigning rights see the *Business Intelligence Platform Administrator Guide* 4.1 available at: <http://help.sap.com>.

4.6.1.2 Explorer User Profiles

The SAP BusinessObjects Explorer users include the following profiles:

Space Explorers

Space Explorers make up the majority of the SAP BusinessObjects Explorer user population. They search for Information Spaces, navigate and analyze the data within those Information Spaces, and save Information Spaces to other file formats. These users sometimes export Information Spaces to other applications to analyze the data further.

Space Creators

Space Creators make up a small percentage of the total SAP BusinessObjects Explorer user population. They understand the underlying data structures in the data providers consumed by the application and understand the business concerns of their Space Explorer collaborators. With this knowledge, Space Creators can build Information Spaces that contain contextually related sets of data, and so provide Space Explorers with a complete picture for a given business query.

Your system requirements and sizing parameters will depend on the percentage of Space Explorers and Space Creators across your SAP BusinessObjects Explorer deployment.

Administrators

Administrators are responsible for the following:

- Scheduling Information Space indexing, so that the load on the system can be kept to a minimum during peak usage times.
- Managing SAP BusinessObjects Explorer user rights.
- Managing server settings.

4.6.1.3 Allocating rights to users and groups

📌 Note

It is important to ensure that end users have the appropriate rights to the specific universes, folders, and Web Intelligence functionality they require in order to be able to access the Information Spaces they want to explore. For more information, see the *How Information Spaces map to data providers* listed in Related Topics, below.

You configure SAP BusinessObjects Explorer user profiles within the CMC. You need to specify the following types of user authorization in the CMC:

- Define which Explorer features your users have access to, by granting or denying rights to the appropriate objects
- Grant users application rights for the other SAP BusinessObjects applications leveraged by SAP BusinessObjects Explorer
- Allocate the appropriate Access Level to users so they can perform Explorer scheduling and export tasks as appropriate
- Verify users with a Space Creator or Administrator profile have the appropriate access rights to any BusinessObjects universes on which they need to build Information Spaces
- Verify users have the necessary rights to folders where Information Spaces are stored on the CMS

Related Information

[Authorization required for Information Spaces \[page 49\]](#)

[Explorer User Profiles \[page 34\]](#)

4.6.1.3.1 Explorer user rights per user profile

Depending on the profiles you wish to allocate to your Explorer users, you need to grant specific permissions.

Feature usage permissions for Explorer users

User Profile	Permissions
Space Explorer	Explore Information Spaces
	Explore Information Spaces: Export to Bookmark/Email
	Explore Information Spaces: Export to CSV
	Explore Information Spaces: Export to Image
	Explore Information Spaces: Export to Web Intelligence
	Log onto Polestar and view this object in the CMC
Space Creator	Explore Information Spaces
	Explore Information Spaces: Export to Bookmark/Email
	Explore Information Spaces: Export to CSV
	Explore Information Spaces: Export to Image
	Explore Information Spaces: Export to Web Intelligence
	Manage Information Spaces
	Manage Information Spaces: Create a new Space
	Manage Information Spaces: Launch indexing
	Manage Information Spaces: Modify a space
	Manage Information Spaces: Schedule indexing
	Delete objects
	Edit this object
	Log onto Explorer and view this object in the CMC
Administrator	Explore Information Spaces
	Explore Information Spaces: Export to Bookmark/Email
	Explore Information Spaces: Export to CSV
	Explore Information Spaces: Export to Image
	Explore Information Spaces: Export to Web Intelligence
	Manage Information Spaces

User Profile	Permissions
	Manage Information Spaces: Create a new Space
	Manage Information Spaces: Launch indexing
	Manage Information Spaces: Modify a space
	Manage Information Spaces: Schedule indexing
	Delete objects
	Edit this object
	Log onto Explorer and view this object in the CMC
	Modify the rights users have to this object
	Securely modify rights users have to objects

Because SAP BusinessObjects Explorer is an add-on to SAP BusinessObjects Enterprise and leverages the SAP BusinessObjects Web Intelligence and SAP BusinessObjects InfoView applications, some additional Application Rights are also required for each Explorer user profile

Application Rights for Explorer users

User Profile	BusinessObjects Enterprise Application Rights
Space Explorer	Application Right - InfoView: Log on to InfoView and view this object in the CMC
Space Creator	Application Right - InfoView: Log on to InfoView and view this object in the CMC
	Application Right - CMC: Log on to the CMC and view this object in the CMC
	Application Right - Web Intelligence: Create document
Administrator	Application Right - InfoView: Log on to InfoView and view this object in the CMC
	Application Right - CMC: Log on to the CMC and view this object in the CMC
	Application Right - Web Intelligence: Create document

SAP BusinessObjects Enterprise comes with predefined Access Levels. You need to allocate the appropriate Access Levels to your Explorer users so they can perform the scheduling and export tasks that match the needs of their user profile.

Access Levels for Explorer users

User Profile	BusinessObjects Enterprise Access Level(s)	
Space Explorer	View On Demand	The user can explore Information Spaces and can export to Web Intelligence, CSV, or to an image.
Space Creator	Schedule	The user can manage Information Spaces and schedule.
	View On Demand	The user can explore Information Spaces and can export to Web Intelligence, CSV, or to an image.
Administrator	Full Control	The user has full access and control to SAP BusinessObjects Explorer.

Note

When configuring authorizations for Space Creators and Administrators, ensure that they have the correct access levels to Universes and Universe Connections. The access levels state the rights they have for Universes and Universe Connections. Having the right of [Data Access](#) for a Universe Connection allows the user to access the Universe for Information Space creation.

For full information on the user rights and security levels available at the SAP BusinessObjects Enterprise level, refer to the *BusinessObjects Enterprise Administrator's Guide* 4.0 available at: <http://help.sap.com>.

Related Information

[Explorer User Profiles \[page 34\]](#)

4.6.2 Authentication methods

SAP BusinessObjects Explorer supports the authentication methods supported by SAP BusinessObjects Business Intelligence platform:

- Enterprise
- Windows AD
- LDAP
- SAP R/3

To enable SAP R/3 authentication on your SAP BusinessObjects Explorer deployment, you need to perform some manual configuration procedures on the Explorer server.

4.6.2.1 Configuring SAP BusinessObjects Explorer for SAP authentication

This table provides the settings you need to configure in order to make SAP authentication available to SAP BusinessObjects Explorer users.

Note

Before configuring SAP BusinessObjects Explorer for SAP authentication, refer to the *Business Intelligence Platform Administrator Guide* 4.1 available at: <http://help.sap.com> for further information on SAP authentication.

The SAP authentication settings are stored within the Explorer settings properties file (default.settings.properties) in: `$<ExplorerWebappRoot>/WEB-INF/classes/default.settings.properties`.

SAP authentication web application settings

Setting	Description	Example Configuration (without SAP Authentica- tion)	Example Configuration (for SAP Authentica- tion)
<code>default.sapsystem.name</code>	The name of the SAP system.		<code>SAP_ID</code>
<code>show.sapsystem.name</code>	Determines if the SAP system name is shown within the Log On page.	<code>false</code>	<code>true</code>
<code>disable.sapsystem.name</code>	Disables the SAP system name text box within the Log On page. You cannot change the textbox value.	<code>true</code>	<code>false</code>
<code>default.sapclient.name</code>	The SAP client ID.		<code>100</code>
<code>show.sapclient.name</code>	Determines if the SAP client name is shown within the Log On page.	<code>false</code>	<code>true</code>
<code>disable.sapclient.name</code>	Disables the SAP client name textbox within the Log On page. You cannot change the textbox value.	<code>true</code>	<code>false</code>
<code>default.authentication.method</code>	The default log on authentication to use. The value is selected in the Authentication list of the Log On page.	<code>secEnterprise</code>	<code>secSAPR3</code>
<code>authentications</code>	The values that populate the Authentication list.	<code>secEnterprise,secWinAD,secLDAP</code>	<code>secEnterprise secWinAD, secLDAP,secSAPR3</code>

Example: Properties file configured for SAP authentication

```
default.sapsystem.name=SAP_ID
show.sapsystem.name=true
disable.sapsystem.name=false
default.sapclient.name=100
show.sapclient.name=true
disable.sapclient.name=false
default.authentication.method=secSAPR3
authentications=secEnterprise,secWinAD,secLDAP,secSAPR3
```

4.6.3 Single Sign On

You can configure SAP BusinessObjects Explorer for Single Sign On (SSO) for the following authentication methods:

- Enterprise

- Windows AD
- LDAP
- SAP R/3

The following files are used to configure SSO:

- `$<ExplorerWebappRoot>/WEB-INF/classes/sso.properties` contains all of the SSO options
- `$<ExplorerWebappRoot>/WEB-INF/web.xml` contains a servlet filter that needs to be activated for Vintela authentication (for Windows AD)
- `$<ExplorerWebappRoot>/WEB-INF/default.settings.properties` contains Explorer startup options that can be overridden by the SSO in the `sso.properties` file

Related Information

[Activating Single Sign On \[page 40\]](#)

[SSO for WinAD authentication using Vintela \[page 41\]](#)

[SSO for LDAP authentication using SiteMinder \[page 43\]](#)

[Enabling Trusted Authentication \[page 47\]](#)

4.6.3.1 Activating Single Sign On

SSO must already be configured on SAP BusinessObjects Business Intelligence platform before you configure SSO on SAP BusinessObjects Explorer.

Information

See the *Business Intelligence Platform Administrator Guide* at: <http://help.sap.com>.

To activate SSO:

1. Stop the Explorer Web Application Server.
2. Open the following file for edit:
`$<ExplorerWebappRoot>/WEB-INF/classes/sso.properties`
3. Set the following parameters to the values specified:

Setting	Values
<code>sso.global.enabled</code>	<code>true</code>
<code>sso.global.providers</code>	<code><provider_name></code>

Note

By default, the `sso.properties` file contains a set of ready-to-use values for the `sso.global.providers` file. The property must only be set once in the entire file. However, you can specify multiple providers using a comma-separated list of providers.

4. Optional: three additional parameters can be set:

Setting	Description	Values
<code>sso.global.cms</code>	Controls the CMS used during the authentication. If the line is commented with a <code>#</code> at its start, or does not exist, then the <code>default.cms.name</code> value set in the <code>default.settings.properties</code> is used.	<code><cms_name></code>
<code>sso.global.authentication</code>	Controls the authentication method used.	Possible values are: <code>secEnterprise</code> <code>secLDAP</code> <code>secWinAD</code> <code>secSAPR3</code>
<code>sso.global.errorOnFailure</code>	Controls how the SSO system behaves if no credential has been found.	Two possible values: <code>false</code> - the logon workflow continues normally as it would if SSO was not enabled <code>true</code> - the logon dialog is not displayed

Example

```
sso.global.enabled=true
sso.global.authentication=
sso.global.cms=hostname:port
sso.global.providers=sso.vintela
```

4.6.3.2 SSO for WinAD authentication using Vintela

The Vintela Authentication Services provider uses the credentials automatically passed from the browser to the web server to authenticate the user against an Active Directory server.

Note

the authentication cannot be overridden and is implicitly set to secWinAD.

It works as follows:

- Retrieves the Windows credential from the current execution context using Vintela
- Logs on to the server with authentication using these credentials

To enable Vintela Authentication Services for SSO on WinAD, you need to make two additional modifications to `<ExplorerWebappRoot>/WEB-INF/web.xml`.

- uncomment the definition of the `authFilter`
- uncomment the mapping of the `authFilter`

You also need to set the following parameter:

Setting	Values
<code>className</code>	<code>com.businessobjects.datadiscovery.sso.vintela.VintelaSSOProvider</code>

You can also set the following parameters:

Setting	Description	Values
<code>sso.vintela.cms</code>	Controls the CMS used for authentication. It can be used to override the default CMS	<code><cms_name></code>
<code>sso.vintela.locale.retrieval</code>	Method to be used to retrieve the locale of the current Explorer UI	<ul style="list-style-type: none">- HTTP_HEADER from HTTP header- QUERY_STRING from the URI query string- COOKIE from cookie- SESSION from web session attribute- REQUEST from request attribute- X509_SUBJECT from X509_SUBJECT certificate
<code>sso.vintela.locale.param</code>	specifies the parameter used by the <code>sso.vintela.locale.retrieve</code> method to retrieve the Explorer UI locale.	To be set by administrator, for example <code>pvl</code>

Example

```
#  
# Vintela parameters (sso.vintela provider)
```

```
#
sso.vintela.className=com.businessobjects.datadiscovery.sso.vintela.VintelaSSOProvider
sso.vintela.cms=
```

4.6.3.3 SSO for WinAD using Kerberos

SAP BusinessObjects Explorer supports WinAD using Kerberos. You need to set up WinAD authentication with Kerberos on your SAP BusinessObjects Business Intelligence platform system. No configuration is necessary on the Explorer servers.

Information

See the *Business Intelligence Platform Administrator Guide Administrator's Guide* at: <http://help.sap.com>.

4.6.3.4 SSO for LDAP authentication using SiteMinder

The SiteMinder provider uses a cookie SMSESSION containing a unique session ID to be used as a user name to perform an authentication using secLDAP or secWinAD.

Note

This provider is based on a generic provider with predefined values, as specified below.

It works as follows:

- Retrieves the SiteMinder session cookie from the current execution context
- Logs on to the server with authentication using this cookie value


You need to set the following parameters:

Setting	Description	Values
<code>sso.siteminder.className</code>		<code>com.businessobjects.datadiscovery.sso.generic.GenericSSOProvider</code>
<code>sso.siteminder.authentication</code>		By default, this is set to: <code>secLDAP</code> . It can be changed to <code>secWinAD</code>
<code>sso.siteminder.user.retrieveval</code>	Method to be used to retrieve the user name.	The value is set to <code>COOKIE</code> by default.

Note

The default value should not be changed.

Setting	Description	Values
<code>sso.siteminder.user.param</code>	Specifies the parameter used by the <code>user.retrieval</code> method to retrieve the user name.	The value is set to <code>SMSESSION</code> by default.

 **Note**
The default value should not be changed.

You can also set the following parameters:

Setting	Description	Values
<code>sso.siteminder.cms</code>	Controls the CMS used for authentication. It can be used to override the default CMS.	<code><cms_name></code>
<code>sso.siteminder.locale.retrieval</code>	Method to be used to retrieve the locale of the current Explorer UI.	<ul style="list-style-type: none"> - <code>HTTP_HEADER</code> from HTTP header - <code>QUERY_STRING</code> from the URI query string - <code>COOKIE</code> from cookie - <code>SESSION</code> from web session attribute - <code>REQUEST</code> from request attribute - <code>X509_SUBJECT</code> from <code>X509_SUBJECT</code> certificate
<code>sso.siteminder.locale.param</code>	Specifies the parameter used by the <code>sso.siteminder.locale.retrieval</code> method to retrieve the Explorer UI locale.	To be set by administrator, for example <code>pvl</code>

Example

```
#
# SiteMinder parameters (sso.siteminder)
#
sso.siteminder.className=com.businessobjects.datadiscovery.sso.generic.GenericSSO
Provider
sso.siteminder.cms=
sso.siteminder.authentication=secLDAP
sso.siteminder.user.retrieval=COOKIE
sso.siteminder.user.param=SMSESSION
```

4.6.3.5 SAP SSO

SAP BusinessObjects Explorer supports SAP SSO and this allows to use SAP BusinessObjects Explorer from the SAP NetWeaver portal without having to repeatedly enter user information for authentication.

Information

See the *Business Intelligence Platform Administrator Guide Administrator's Guide* at: <http://help.sap.com>.

You set the following parameters:

Setting	Description	Values
<code>sso.sap.className</code>	Mandatory	<code>com.businessobjects.datadiscovery.sso.generic.GenericSSOProvider</code>
<code>sso.sap.cms</code>	Controls the CMS used for authentication. It can be used to override the default CMS.	<code><cms_name></code>
<code>sso.sap.user.retrieval</code>	Method to be used to retrieve the user name.	The value is set to <code>COOKIE</code> by default. <div>Note The default value should not be changed.</div>
<code>sso.sap.user.param</code>	Specifies the parameter used by the <code>user.retrieval</code> method to retrieve the user name.	The value is set to <code>MYSAPSSO2</code> by default. <div>Note The default value should not be changed.</div>

You can also set the following parameters:

Setting	Description	Values
<code>sso.sap.sysid.retrieval</code>	Method to be used to retrieve the SAP system ID.	<ul style="list-style-type: none">- <code>HTTP_HEADER</code> from HTTP header- <code>QUERY_STRING</code> from the URI query string- <code>COOKIE</code> from cookie- <code>SESSION</code> from web session attribute- <code>REQUEST</code> from request attribute

Setting	Description	Values
		- X509_SUBJECT from X509_SUBJECT certificate
sso.sap.sysid.param	Specifies the parameter used by the sso.sap.sysid.retrieval method to retrieve the SAP system ID.	To be set by administrator, for example sap_sysid.
sso.sap.clientid.retrieval	Method to be used to retrieve the SAP client ID.	<ul style="list-style-type: none"> - HTTP_HEADER from HTTP header - QUERY_STRING from the URI query string - COOKIE from cookie - SESSION from web session attribute - REQUEST from request attribute - X509_SUBJECT from X509_SUBJECT certificate
sso.sap.clientid.param	Specifies the parameter used by the sso.sap.clientid.retrieval method to retrieve the SAP client ID.	To be set by administrator, for example sap_client.
sso.sap.locale.retrieval	Retrieves the locale of the current Explorer UI.	<ul style="list-style-type: none"> - HTTP_HEADER from HTTP header - QUERY_STRING from the URI query string - COOKIE from cookie - SESSION from web session attribute - REQUEST from request attribute - X509_SUBJECT from X509_SUBJECT certificate
sso.sap.locale.param	Specifies the parameter used by the sso.sap.locale.retrieval method to retrieve the Explorer UI locale.	To be set by administrator, for example pvl.

Example

```
# SAP parameters (sso.sap).
#
sso.sap.className=com.businessobjects.datadiscovery.sso.sap.SAPSSOProvider
sso.sap.cms=DEWDFTV00832Q:6400
sso.sap.locale.retrieval=QUERY_STRING
sso.sap.locale.param=pvl
sso.sap.user.retrieval=COOKIE
sso.sap.user.param=MYSAPSSO2
sso.sap.sysid.retrieval=QUERY_STRING
```

```
sso.sap.sysid.param=sap_sysid
sso.sap.clientid.retrieval=QUERY_STRING
sso.sap.clientid.param=sap_client
```

4.6.3.6 Enabling Trusted Authentication

You need to configure the CMC for trusted authentication before you can enable trusted authentication on SAP BusinessObjects Explorer.

Information

See the section on enabling trusted authentication in the *Business Intelligence Platform Administrator Guide* at: <http://help.sap.com>.

To enable trusted authentication on SAP BusinessObjects Explorer:

1. Stop the Explorer Web Application Server.
2. Open the following file for edit:
\$<ExplorerWebappRoot>/WEB-INF/classes/sso.properties
3. Set the following parameters:

Setting	Values
cms.default	Enter the CMS name and port number as follows: <servername.portnumber >
sso.enabled	true
siteminder.enabled	false

4. Find the following string:
trusted.auth.user.retrieval
5. Enter the parameter value that corresponds to the user retrieval method you want to implement:

User Retrieval Method	Value
Retrieve the user name from a call to getRemoteUser () on the HttpServletRequest object for the current request in a servlet or JSP.	REMOTE_USER

Note

For .NET the following properties need to be set on your InfoViewApp directory, using IIS Manager:

- disable *Anonymous access* checkbox
- enable the *Windows Integrated Authentication* checkbox

User Retrieval Method	Value
Retrieve the user name from the contents of a specified parameter in the request URL.	HTTP_HEADER
Note You define the query string parameter in the <code>trusted.auth.user.param</code> parameter in the <code>web.xml</code> file for BI launch pad .	
Retrieve the user name from the contents of a specified cookie.	COOKIE
Note You define the cookie in the <code>trusted.auth.user.param</code> parameter in the <code>web.xml</code> file for BI launch pad .	
Retrieve the user name from the contents of a specified session variable.	WEB_SESSION
Note You define the web session variable in the <code>trusted.auth.user.param</code> parameter in the <code>web.xml</code> file for BI launch pad .	
Retrieve the user name from a call to <code>getUserPrincipal () .getName ()</code> on the <code>HttpServletRequest</code> object for the current request in a servlet or JSP.	USER_PRINCIPAL

- Verify you have specified how to retrieve the shared secret for BusinessObjects Enterprise.
To retrieve the shared secret from a session variable, you need to configure the `$<ExplorerWebappRoot>/WEB-INF/classes/sso.properties` file on SAP BusinessObjects Explorer.
- Set the following parameter value in the `$<ExplorerWebappRoot>/WEB-INF/classes/sso.properties` file:

Parameter	Value
<code>trusted.auth.shared.secret</code>	Enter the session variable name from which to retrieve the shared secret.

- Save and close the file.

Re-start the Explorer Web Application Server.

4.6.3.7 Configuring Single Sign-On to allow manual login

When SSO is configured on an SAP BusinessObjects Business Intelligence platform deployment, users are automatically logged on when accessing the Explorer application and bookmark URLs.

In certain cases, an administrator needs to log into Explorer without being automatically identified as already logged in; for example, to log in as a different user when already logged in, or when a single platform is required to serve SSO users (internal users) and non SSO users (external users).

You can activate manual login in a SSO system as follows:

1. Stop the Web application servers.
2. Browse to the [SSO folder](#) in the SAP BusinessObjects install path.
3. Copy the `noSSO.jsp` file to the Web Application server [explorer](#) folder.
For example:

Copy `BO_ROOT\Tomcat6\webapps\explorer\sso\noSSO.jsp`

to the folder `BO_ROOT\Tomcat6\webapps\explorer\`

4. Restart the web application servers.
5. Test the manual login as follows:
 - Start Explorer.
 - Log in by replacing the part of the URL after `http://<server>:<port>/explorer/` with `noSSO.jsp`.

For example `http://<server>:<port>/explorer/noSSO.jsp`. The application starts without prompting for login information.

4.7 Managing Information Spaces

4.7.1 Authorization required for Information Spaces

The supported data providers for SAP BusinessObjects Explorer 4.1 are:

- BusinessObjects universes (.UNX and .UNV). The universes are based on RDBMS.
- Excel spreadsheets (.xls, .xlsx files) created using Microsoft Excel

Building on BusinessObjects universes

To create an Information Space on a universe you need to have the following rights enabled for you in the CMC:

- access rights to the universe
- access rights to the folder in which the universe is stored on the CMS.

4.7.1.1 Uploading Excel spreadsheets as data provider

The Excel files used by Explorer need to be flat files, that is simple data files with one record per row without structuring such as multiple tables, or crosstabs or charts.

1. How you select the Excel spreadsheet depends on where the file is stored:
 - If the file is stored on the CMS, click the [Manage Spaces](#) tab and then select the file from within the [Excel spreadsheets](#) folder.
 - If the file is on your local machine, navigate to the [Upload a spreadsheet to explore](#) section on the [Home](#) tab, click [Browse](#) and then select the file from your local directory.

2. Optional: If the file is on your local machine, you can opt to explore it immediately in Explorer.

If you want to specify how each type of data should be translated when viewed as objects within Explorer, then you need to configure the new Information Space before you explore it. For example, if the Excel file contains more than one sheet, you can specify which sheet you want Explorer to use. You can also specify for each column whether the values are labels (that is, non-numerical characters) or if the values are measures. In the case of values being measures, you can select whether the measure is a SUM, MIN or MAX value.

Note

By default, Explorer interprets all numerical values as SUM, except for dates.

3. How you specify properties for the Information Space depends on where the Excel file is stored:
 - click [Preview](#) and [Configure](#).
 - click [Configure](#).
4. If the file contains multiple sheets, select which sheet you want to make explorable and then click the drop-down box above each column to specify whether Explorer should interpret the column values as a measure or label.
5. To verify that the Information Space contains no errors, click [Validate](#).

If the Excel file is stored on the CMS, the Information Space remains available from within Explorer. If the Excel file is stored on your local machine, the Information Space is automatically deleted when you log out of Explorer. However, you can save the Information Space as a bookmark and so re-visit it.

Related Information

[Configuring the number of possible concurrent Excel uploads \[page 21\]](#)

4.7.2 Controlling access rights to the Information Space folders

After creating and testing an Information Space, set security rights to the folder where the Information Space is located within the CMC. Security rights can prevent any unauthorized personnel accessing, viewing, or performing operations on the Information Space.

Refer to the Business Intelligence Platform Administrator Guide for information on setting security options. Alternatively, move the Information Space to a secure folder.

4.7.3 Customizing Information Spaces with dynamic URL parameters

SAP BusinessObjects Crystal Reports and Interactive Analysis tools support the insertion of dynamic hyperlinks in a query that return an HTML page for a dimension. You can use this feature to insert a URL using an SAP BusinessObjects Explorer specific URL syntax specific to open and customize an Information Space that corresponds to a dimension in a Crystal Report or Interactive Analysis query.

Explorer may be referenced from any URL-supported location such as an email link, web page or address bar from a web browser. An example of such a link would included the CUID of an Explorer workspace such as "isid=ASFuWlg_wBpOg7MrYiTY_g" and preselected facets and facets values such as "fan=FacetNameA_: _FacetValueA1". Refer to the Crystal reports and Interactive Analysis user guides for information on how to implement the URL. The syntax for the URL is as follows:

Syntax	Description	Example	Values
url	Url for retrieving the parameters.	url=dummy.xml	Needs a valid url with a well formed xml
isid	Information Space ID (CUID). Restrictions: Parameter is mandatory.	isid=ASFuWlg_wBpOg7MrYiTY_g	A valid Information Space CUID
isna	Information Space Name		
fans	A sorted list of facets and facets values	fan= FacetNameA_: _FacetValueA1	A list of facets and facets values with separators: <ul style="list-style-type: none"> _: is the separator for facet and its values _] is the separator for facet values _: is the separator for facets
mens	A sorted list of measures	mens=Revenuemens=Revenue_: _Quantity	A list of measures: _: is the separator for measures
secr	A search criteria	secr=revenue	A search criteria (string)
cht	Chart type	cht=bvg	bhg horizontal bar bvg vertical bar mr multiradar r radar sf surface bvgd vertical bar dual axis

Syntax	Description	Example	Values
	Restrictions: <ul style="list-style-type: none"> Not provided or incorrect: Application default applies Provided: Display the chart with application default settings Not available: Fall back to its category default. 		tg tag cloud p pie bhs horizontal stacked bar bvs vertical stacked bar mp multipie tm treemap lxy XY chart s bubble lc line lcd line dual axis
chdi	Chart analysis dimension	chdi=Year	A valid dimension (facet)
chso	Chart ordered by	<ul style="list-style-type: none"> chso=Revenue chso=Revenue: _asc 	Specify the dimension or measure that determines the ordering. It accepts an optional parameter that gives the sort type (for example ascending.)
chts	Chart threshold Restrictions: When missing, application default = 12.	chts=12	Specify the chart threshold.
chot	Chart display "others" Restrictions: When missing, application default = YES	chot=false	When "false" is specified, it will hide "others"
cui	Control User Interface Restrictions: When missing, application default applies.	cui=htb;_hball	Specify the user interface "quick customization":

Example: Customizing Information Spaces with dynamic URLs

- Selecting 2 measures : store_cost and unit_sales and creating two filters on store_type and store_number:

`http://vs0112:50001/explorer/index.jsp?`

`isna=cube+7&mens=unit_sales;_store_cost&fans=store_type:_Supermarket_]_Small+Grocery;_store_number:_3_]_11_]_15`

- Set the chart to 'horizontal bar', select 2 measures, set the analysis dimension, display only 5 values and hide 'others' value:

`http://vs0112:50001/explorer/index.jsp?`

`isna=cube+7&mens=unit_sales;_store_cost&cht=bhg&chdi=store_city&chts=5&chot=false`

- An URL that specifies the user interface style :

`http://vs0112:50001/explorer/index.jsp?isna=cube+7&cui=htb`

4.7.4 Indexing best practices

Performance during indexing is dependent upon the hardware (hard drive, memory and JVM heap size) number of concurrent users, number of Information Spaces being indexed concurrently, and the size of those Information Spaces.

If users only access SAP BusinessObjects Explorer during working hours, schedule the indexing over night, users are not impacted by indexing. If you have medium sized Information Spaces and concurrent user access is not expected, then a single high-end machine is considered to be efficient.

However if you have many users indexing and exploring large Information Spaces constantly, ensure the following:

- SAP BusinessObjects Explorer is deployed in a cluster with additional machines each having extra servers. The number of machines deployed is dependent on the number of expected concurrent users and the size of the Information Spaces.
- fast hard disk drives are installed on each machine
- there is a large amount of memory on each machine (especially on the host machine with the Master Server)
- the JVM heap size for each server on each machine is configured correctly according to available memory

Scheduling Information Spaces for indexing does not impact performance if you have deployed, installed, and configured everything correctly.

4.7.5 Testing your Information Space

After indexing your Information Space, perform a test to ensure it has been indexed correctly and it is what you expect:

- Ensure that the Information Space appears within the [Home](#) tab.
- Click Refresh to update the list.
- Click the Information Space to launch it.
- Check the facets to see if they represent the objects you selected during creation.
- Navigate through the data to ensure that the Information Space matches the original business needs and user requirements.

4.7.6 Information Space design best practices

Before creating Information Spaces, gather the information requirements of your end users by asking the following questions:

- What exactly is the business need of the Information Space?
If you know what the Information Space is going to be used for, then you can simply identify the related data source objects. For example, the business need is for knowing the sales revenue last year for all of your European stores. You could select the Sales Revenue measure, the Country, City, and Store dimensions, and finally, the Last Year filter.

- How many users are expected to access and explore the Information Space?
If you know that the Information Space is for several users, select only necessary objects. If you select too many objects that can have little use for the user, exploration and indexing can be impacted. It can also cause confusion to users.
- What are the sizing limits?
Be aware of the sizing limits of your installation. Ask your administrator for further information.
- What are the security expectations?
Ensure that you select objects that are only meant to be in the Information Space.
- Is a single Information Space the best option?
Several small Information Spaces can often be better than a single Information Space.
- What is the best data provider to use?
Depending on the business need and user demand, choose a source data system and data provider that is the most efficient and most accurate.
- What is the context of the Information Space?
While choosing your data source objects, ensure that you know if any contexts are required. A context makes certain that the Information Space represents the desired perspective. For example: Sales or Reservations.
- If my Information Space is created on a BusinessObjects universe, what filters can be applied so that only data of interest is retrieved?
By using filters, only the data necessary for a specific information need is included into the Information Space. For example, by including a filter called "Last Year," only data from the previous year is retrieved into the Information Space when users explore it.

📘 Note

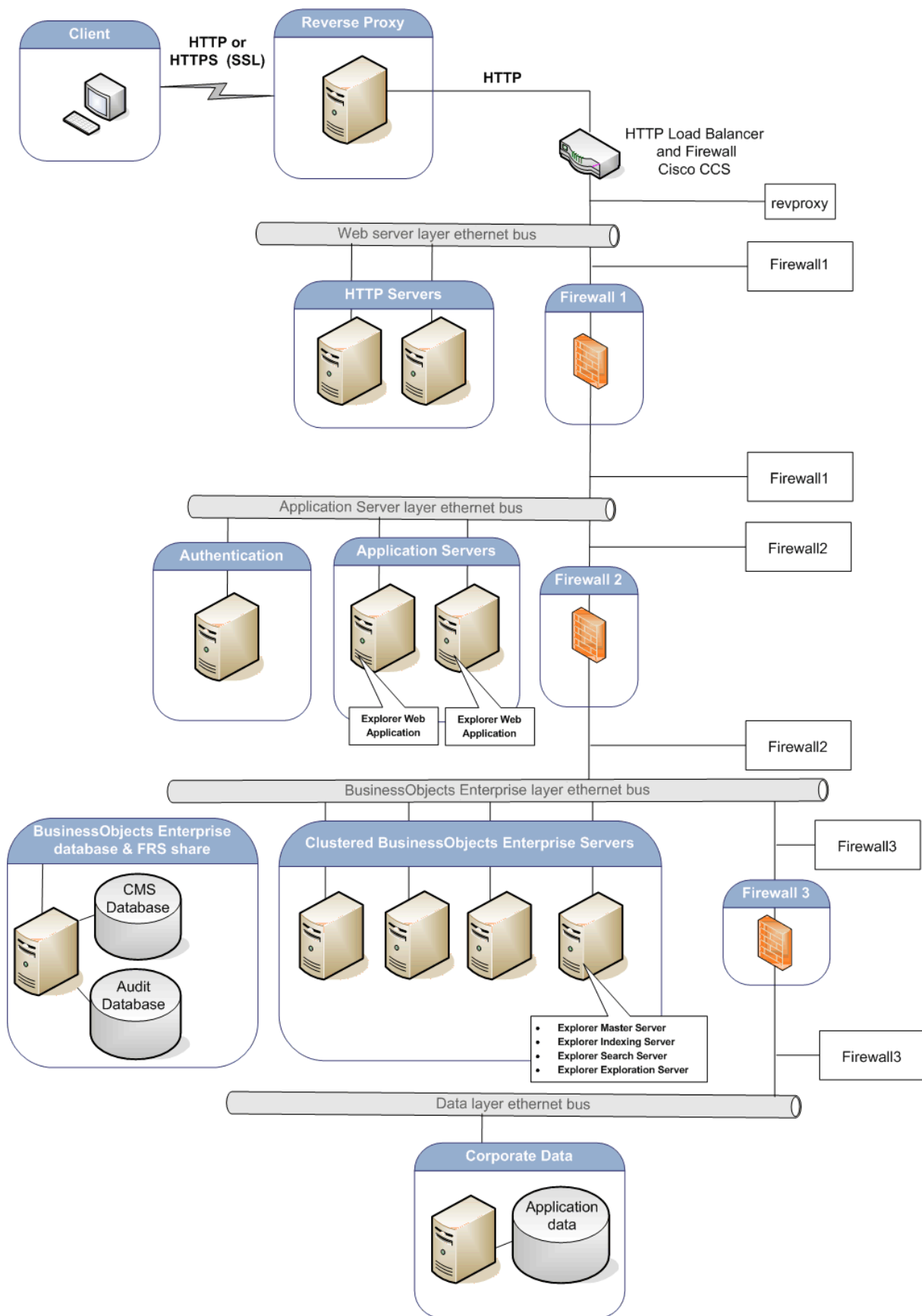
Filters are created at the data provider level when the BusinessObjects universe or BWA index is designed.

- Is the definition you want valid?
Validate the definition of your Information Space before indexing, by clicking the [Validate](#) button when you have selected the objects and filters you want to include.

5 Security

5.1 Network security

You can deploy SAP BusinessObjects Explorer in a distributed scenario over multiple nodes, using firewalls and reverse proxies for your security to set up a complex environment that ensures security and failover.



5.1.1 Firewall port usage for SAP BusinessObjects Explorer

When you deploy SAP BusinessObjects Explorer, you can protect your network with a firewall, however the firewall can block network communication between your deployment nodes. For example, if you have deployed the Explorer Web Application on one node, deployed the Explorer servers on another node and various BusinessObjects Enterprise servers are already deployed on a third node, you may have to open ports to allow the nodes to communicate.

Each server can be configured so that they use a specific port. The firewall can then be configured so that the specific ports are open.

It is necessary to choose a set of port numbers which do not interfere with other network services and it is necessary to ensure that the correct servers are configured. For example, the following servers are required to have their ports configured on a simple Explorer deployment:

- Central Management Server
- Explorer Master Server
- Explorer Indexing Server
- Explorer Search Server
- Explorer Exploration Server
- Web Intelligence Processing Server

Note

If you allow access to the CMS, other services can connect and exchange information.

Example: Port configuration

This example demonstrates how you could configure servers on a simple deployment:

Server	Port
Central Management Server	64002
Explorer Master Server	64023
Explorer Indexing Server	64022
Explorer Search Server	64024
Explorer Exploration Server	64021
Web Intelligence Processing Server	64032

5.1.2 Reverse proxies

SAP BusinessObjects Explorer supports the same reverse proxy configuration as SAP BusinessObjects Enterprise. No specific reverse proxy configuration for SAP BusinessObjects Explorer is required.

Information

For information about reverse proxy configuration for SAP BusinessObjects Enterprise, refer to the Business Intelligence Platform Administrator Guide 4.1 available on the *SAP BusinessObjects* tab at: <http://help.sap.com>.

5.1.3 Configuring servers for SSL

You can use the Secure Sockets Layer (SSL) protocol for all network communication between clients and servers in your BusinessObjects Enterprise deployment. the SSL recommendation.

Refer to the section on distributed deployment scenarios referenced in Related Topics for security recommendations using SSL, and also the specific recommendations for multiple master server deployments.

Information

For information about configuring SSL for SAP BusinessObjects Enterprise, refer to the Business Intelligence Platform Administrator Guide 4.1 available on the *SAP BusinessObjects* tab at: <http://help.sap.com>.

Related Information

[Distributed deployment scenarios \[page 7\]](#)

5.2 Data and metadata storage locations

Data is stored in binary format in indexes. Where the data is stored depends on the data provider. If the data provider is a BusinessObjects universe or an Excel spreadsheet, the data is stored on the SAP BusinessObjects Business Intelligence platform Central Management Server (CMS) file system.

Metadata is stored in the CMS. When indexing, multiple files called "indexes" are created. There are exploration indexes and global search indexes (leveraged by the Search on the Home tab of Explorer).

By default, indexes are located under `<InstallDir>\SAP BusinessObjects Enterprise XI 4.0\Data\Explorer\` on each node except the Explorer Master servers. As an administrator, you can change the storage location per server. You do this from within the CMC, for each of the servers.

Note

When users export their exploration views of Information Spaces to CSV or Excel files, temporary data is stored on the SAP BusinessObjects Business Intelligence platform File Repository Service (FRS). This data is not human readable.

5.3 Data protection and privacy

SAP BusinessObjects Explorer relies on database, and SAP BusinessObjects Business Intelligence platform security. Explorer itself does not store data except in the indexes leveraged by Explorer Information Spaces. These indexes are stored in a binary format that is not human readable. However, indexes may contain sensitive data. To ensure that the data is secured, the BusinessObjects Enterprise CMS file system folders, which host the indexes based on BusinessObjects universes and Excel spreadsheets, need to be set to restricted access.

For all information concerning data protection and privacy in the SAP BusinessObjects Business Intelligence suite, please consult this topic in the *Business Intelligence Platform Administrator Guide*: <https://help.sap.com/viewer/2e167338c1b24da9b2a94e68efd79c42/4.2.5/en-US/9da114546bb54d11b7ee34419825b5a3.html>

5.4 Cookies

The client-side cookies used by Explorer do not store business data; the only information maintained by the browser (using cookies) is the session token. Explorer cookies are not persistent. Users of shared computers simply need to make sure they close the browser before leaving the workstation.

6 System Availability

6.1 Ensuring system availability

If you have a large or mission-critical implementation of SAP BusinessObjects Explorer, you will want to ensure high availability for the following services:

- SAP BusinessObjects Enterprise CMS - deploy more than one BusinessObjects CMS to manage your BusinessObjects Enterprise services. The two CMS servers work together to maintain consistency of critical data.
- SAP BusinessObjects Explorer Master server - deploy more than one Explorer Master Server to manage the other Explorer servers. The Master Servers work together to maintain the consistency of critical data.

To do this, you need to install two SAP BusinessObjects Business Intelligence platform CMS servers and two SAP BusinessObjects Explorer Master servers, and cluster those servers so that the two CMS servers run together and the two Master servers run together. This "high availability" support helps to ensure that users can still access information when there is an equipment failure.

Related Information

[Configuring failover between CMS servers \[page 60\]](#)

6.2 Configuring failover between CMS servers

To run several SAP BusinessObjects Business Intelligence platform CMS machines together, you need to create a cluster. A cluster consists of two or more CMS servers working together against a common CMS system database. If a machine that is running one CMS fails, a machine with another CMS will continue to service SAP BusinessObjects Business Intelligence platform requests.

❗ Note

For full details on how to cluster a CMS with an existing CMS, refer to the section on clustering Central Management Servers in the *Business Intelligence Platform Administrator Guide* available on the SAP Help portal at <http://help.sap.com>.

7 Server Properties Appendix

7.1 About the Server Properties Appendix

This server properties appendix lists and describes properties that can be set for each SAP BusinessObjects Explorer server.

7.1.1 Request Port properties

The server properties described in this section apply to all SAP BusinessObjects Explorer servers.

Property	Description	Default value
<i>Server Name</i>	The name of the server.	The default value is the name of the node that the server is on plus the name of the server.
<i>ID, CUID</i>	The short ID and cluster unique ID of the server. ReadID, CUID only.	These values are auto-generated.
<i>Node</i>	The name of the node where the server is located.	These values are specified during installation.
<i>Command Line Parameters</i>	The command-line parameters for the server.	The default value depends on the type of server.
<i>Request Port</i>	Specifies the port from which the server receives requests. In an environment with firewalls, configure the server to only listen to requests on ports that are open on the firewall. If you are specifying a port for the server, ensure that the port is not already taken by another process. <div>Note If <i>Auto assign</i> is selected, the server binds to a dynamically allocated port. This means that a random port number is allocated to the server each time the server is restarted.</div>	By default <i>Auto assign</i> is set to TRUE, and the <i>Request Port</i> is empty.
<i>Auto assign</i>	Specifies whether the server binds to a dynamically allocated port whenever the server is restarted. To bind the server to a specific port, set <i>Auto Assign</i> to FALSE and specify a valid <i>Request Port</i> .	The default value is TRUE.

7.1.2 Auto-Start properties

The server properties described in this section apply to all SAP BusinessObjects Explorer servers.

Property	Description	Default value
Automatically start this server when the Server Intelligence Agent starts	Specifies whether the server is automatically started when the Server Intelligence Agent (SIA) starts or restarts. If this value is set to FALSE and the SIA starts or restarts, the server remains stopped.	The default value is TRUE.

7.1.3 Host Identifier properties

The server properties described in this section apply to all SAP BusinessObjects Explorer servers.

Property	Description	Default value
Auto assign	Specifies whether the server binds to a network interface that is automatically assigned. If set to FALSE, the server binds to a specific network interface. If set to TRUE, the server accepts requests on the first available IP Address. On multihomed machines, you can specify a particular network interface to bind to by setting this value to FALSE and providing a valid hostname or IP Address.	The default value is TRUE.
Hostname	The hostname of the network interface that the server binds to. If a host name is specified, the server accepts requests on all IP Addresses associated with the host name.	By default Auto assign is set to TRUE, and the Hostname is empty.
IP Address	The IP Address of the network interface that the server binds to. Both IPv4 and IPv6 protocols are supported. If an IP Address is specified, the server accepts requests on the IP Address only.	By default Auto assign is set to TRUE, and the IP Address is empty.

7.1.4 Configuration Template properties

The server properties described in this section apply to all SAP BusinessObjects Explorer servers.

Property	Description	Default value
Use Configuration Template	Specifies whether to use a configuration template.	The default value is FALSE.
Restore System Defaults	Specifies whether to restore the original default settings for this server.	The default value is FALSE.
Set Configuration Template	Specifies whether to use the current service's settings as a configuration template for all services of the same type. If set to TRUE, all services of the same type that you have specified to Use Configuration Template are immediately reconfigured to use the settings of the current service.	The default value is FALSE.

7.1.5 Single Sign-On Service properties

The server properties described in this section apply to all SAP BusinessObjects Explorer servers.

Property	Description	Default value
Single Sign-On Expiry (seconds)	Specifies the time, in seconds, that an SSO connection to a datasource is valid before expiring. This applies to Windows AD users running reports that are configured for Windows AD SSO to the datasource.	86400

7.1.6 TraceLog Service properties

The server properties described in this section apply to all SAP BusinessObjects Explorer servers.

Property	Description	Default value
Log level	<p>Specifies the minimum severity of messages that you want to be recorded, and determines how much information is recorded in the server log file.</p> <p>Possible log threshold levels are:</p> <ul style="list-style-type: none"> • Unspecified • None • Low • Medium • High 	The default value is unspecified.

7.1.7 Explorer Search, Indexing and Exploration Services properties

The server properties described in this section apply to all SAP BusinessObjects Explorer servers except for Explorer Master servers.

Property	Description	Default value
<i>Index Files Directory</i>	Specifies the directory where index files are stored.	%DefaultDataDir%
	<div><div>ⓘ Note</div><div>You may encounter performance issues if this directory does not have adequate disk space.</div></div>	

8 Server Metrics Appendix

8.1 About the Server Metrics Appendix

This server metrics appendix lists and describes metrics that can be monitored for each SAP BusinessObjects Explorer server.

Server metrics are not available for servers that are not running.

For more information about monitoring server metrics in the Central Management Console (CMC) and about additional server metrics for SAP BusinessObjects Explorer, refer to the *Business Intelligence Platform Administrator's Guide*.

In addition to the metrics described in this appendix, the Monitoring application can also monitor these server states:

Server State	Description
Health State	<p>The Health State indicates the general health of a server. here are the possible values:</p> <ul style="list-style-type: none">• 0 = Red (Danger)• 1 = Amber (Caution)• 2 = Green (Healthy)
Server Enabled State	<p>This state indicates whether a server is enabled or disabled. These are the possible values:</p> <ul style="list-style-type: none">• 0 = Disabled• 1 = Enabled
Server Running State	<p>This state indicates the running state of a server. These are the possible values:</p> <ul style="list-style-type: none">• 0 = STOPPED• 1 = STARTING• 2 = INITIALIZING• 3 = RUNNING• 4 = STOPPING• 5 = FAILED• 6 = RUNNING_WITH_ERRORS• 7 = RUNNING_WITH_WARNINGS

8.1.1 Explorer Master Server metrics

This table lists and describes the metrics you can monitor for SAP BusinessObjects Explorer Master Servers (ExplorerMasterServer).

Metric	Description
<i>Current number of indexation failures</i>	The number of indexing failures on the cluster.
<i>Number of indexation processes currently in progress</i>	The number of indexing processes currently in progress on the cluster. This number can range between 0 and the number of Explorer Indexing Servers on the cluster.
<i>Number of information spaces currently open</i>	The number of information spaces that are currently opened on the cluster.
<i>Number of replications currently in progress</i>	The number of exploration indexes that are currently being replicated from the server.
<i>Number of users logged into the system</i>	The number of users currently logged into the system on the cluster.

Related Information

[About the Server Metrics Appendix \[page 65\]](#)

8.1.2 Explorer Search Server metrics

This table lists and describes the metrics you can monitor for SAP BusinessObjects Explorer Search Servers (ExplorerSearchServer).

Metric	Description
<i>Current average number of keywords by search query</i>	The average number of keywords included in a search from the Home Page.
<i>Current average results returned by search query</i>	The average number of results returned by a search from the Home Page.
<i>Current average search time</i>	The average amount of time required for a search query to display results.
<i>Current maximum number of keywords by search query</i>	The maximum number of keywords included in a search from the Home Page.
<i>Current maximum results returned by search query</i>	The maximum number of results returned by a search from the Home Page.
<i>Current maximum search time</i>	The maximum amount of time required for a search query to display results.
<i>Current minimum number of keywords by search query</i>	The minimum number of keywords included in a search from the Home Page.
<i>Current minimum results returned by search query</i>	The minimum number of results returned by a search from the Home Page.

Metric	Description
<i>Current minimum search time</i>	The minimum amount of time required for a search query to display results.
<i>Current response time for the search operation</i>	Same as <i>Current average search time</i>

Related Information

[About the Server Metrics Appendix \[page 65\]](#)

8.1.3 Explorer Exploration Server metrics

This table lists and describes the metrics you can monitor for SAP BusinessObjects Explorer Exploration Servers (ExplorerExplorationServer).

Metric	Description
<i>Server response time to change facet data</i>	The average amount of time for the server to calculate the facet panel in an information space
<i>Server response time to change the chart during exploration</i>	The average amount of time for the server to generate a new chart in an information space.
<i>Server response time to open an information space</i>	<p>The average amount of time for the server to open an information space. An information space can be opened from:</p> <ul style="list-style-type: none"> • The Explorer Home Page • The Explorer Home Page search results • The upload of a Microsoft Excel spreadsheet • An URI (bookmark or REST API)

Related Information

[About the Server Metrics Appendix \[page 65\]](#)

9 Troubleshooting

9.1 Understanding error messages

Information about each error message generated by an Explorer service or component is provided in the *SAP BusinessObjects Error Messages Explained* guide available at the SAP Help Portal: <http://help.sap.com> .



This guide also contains the tracelog error messages for errors generated by Explorer servers.

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