SAP BusinessObjects

SAP BusinessObjects Explorer Administrator's Guide

- SAP BusinessObjects Enterprise XI 3.1

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Introduction

About this guide

This guide is for administrators who need to install SAP BusinessObjects Explorer XI 3.2.

For information on how to use SAP BusinessObjects Explorer to explore corporate business intelligence data, see the **Help**.

Information:
For an overview of the information resources dedicated to deployments of SAP BusinessObjects Explorer with SAP NetWeaver BW Accelerator, refer to the *Master Guide for SAP BusinessObjects Explorer, accelerated version* at: *https://service.sap.com/bosap-explorer*.

Important SAP Notes

It is recommended that IT and BI administrators managing an SAP BusinessObjects Explorer system read the following SAP notes:

SAP Note	Topic	Title
1388247	Monitoring SAP BusinesObjects Explorer within SAP Solution Manager	Note 1388247 - RCA: Managed System Setup for SAP Business Objects Explorer
1366180	Performance and reliability information	SAP BusinessObjects Explorer Performance & Reliability

Related guides

The following SAP documentation provides information for SAP BusinessObjects Explorer:

Information	Documentation	Location
Overview of the features, architecture and technical landscape as well as links to required documentation and SAP notes.	SAP BusinessObjects Explorer Master Guide	SAP Help Portal: *http://help.sap.com*
Information about the supported platforms and third party software.	Product Availablity Matrix • SAP BusinessObjects Explorer XI 3.2 for Windows Support Platforms • SAP BusinessObjects Explorer XI 3.2 for AIX Support Platforms • SAP BusinessObjects Explorer XI 3.2 for Linux SuSE Support Platforms	SAP Service Marketplace: *http://service.sap.com/pam* In the "Search" field, type: Explorer XI 3.2
Installation procedures for each supported operating system	SAP BusinessObjects Explorer Installation Guide	SAP Service Marketplace: *http://service.sap.com/bosap-instguides*
Explorer administration tasks, configuration, monitoring, troubleshooting. Network and communication security plus user management, authentication, SSO.	SAP BusinessObjects Explorer Administrator's Guide	SAP Help Portal: *http://help.sap.com*

Information	Documentation	Location
Complete information about the Business Intelligence platform administration to which SAP BusinessObjects Explorer is an add-in component	SAP BusinessObjects Enterprise Administrator's Guide	SAP Help Portal: *http://help.sap.com*
End-user information on creating, managing and exploring data using the Explorer application interface.	SAP BusinessObjects Explorer Online Help	Log into the application then click **Help**.
Quick overview of the Explorer end-user features and procedures to help new users get started.	SAP BusinessObjects Explorer at a Glance	SAP Help Portal: *http://help.sap.com*
List of the new features introduced with the latest release.	What's New in SAP BusinessObjects Explorer	SAP Help Portal: *http://help.sap.com*
List of known issues and workarounds.	SAP BusinessObjects Explorer Release Notes	*http://service.sap.com/releasenotes*
Error messages explained	SAP BusinessObjects Explorer Error Message Guide	SAP Help Portal: *http://help.sap.com*

Business Scenarios

End-user features

SAP BusinessObjects Explorer combines the simplicity and speed of search with the trust and analytical power of business intelligence (BI) to provide immediate answers to business questions. Users employ familiar keyword searches to find information and explore directly on data.

Features include:

- Search across all data sources – Users simply enter a few search keywords to find the most relevant information instantly from across all of their data sources; including operational applications, data warehouses, marts, RDBMS, OLAP servers, and unstructured sources recently processed through SAP BusinessObjects Text Analysis.
- Preindexed data sources and metadata – Preindexing enables results retrieval and exploration interactivity to occur at near instantaneous speeds. Pre-existing reports or metrics are not required.
- Contextual exploration – values are logically presented by category (or dimension). Selecting values to filter the available data according to end user's focus area is highly intuitive. No data model or data knowledge is required.
- Automated chart generation – SAP BusinessObjects Explorer presents the automatically generates the chart that best represents the information.
- Sharable via e-mail and URL – end users can send their filtered versions of data sets (or Information Spaces) as a URL-embedded e-mail or save them as a bookmark.
- Integration with SAP Business Objects Web Intelligence – data sets explored in SAP BusinessObjects Explorer can be exported to SAP BusinessObjects Web Intelligence to analyze, format, publish, and share with others.
- Use Excel spreadsheets as a data provider -- end users can create Information Spaces on top of Excel spreadsheets and so explore and visualize personal data files.

- Export data to CSV or Excel – export your filtered version of data to Excel or to any third-party application that supports data imports from CSV.

Administration features

SAP BusinessObjects Explorer leverages the BI platform's universe metadata, security, trust, and administration services.

Features include:

- Business intelligence (BI) platform security – BI platform security is applied across all SAP BusinessObjects Explorer searches and exploration, ensuring your users will have access to only the data they are permitted to see. In addition, Explorer power users and administrators can control the objects that end users are allowed to see according to their Explorer logon ID.
- Support for a broad range of data source types – Accessible data sources can include operational applications, data warehouses, RDBMS, OLAP, and even unstructured sources processed via SAP BusinessObjects Text Analysis.

Key terms

In order to understand how SAP BusinessObjects Explorer consumes your corporate data and system resources you will need to familiarize yourself with some key terms.

Information Spaces

An Information Space is a collection of objects mapped to data for a specific business operation or activity. SAP BusinessObjects Explorer users type in key words related to the business question they wish to analyze, in order to retrieve the Information Space(s) that contain the relevant data. Power users, with the Space Creator user profile, create the Information Spaces on top of corporate data providers.

Indexing

In order to prepare Information Spaces for consumption by the Explorer search and charting engines, Information Spaces need to be indexed when

they are created. Information Space indexes can be run manually or scheduled to run at a time of your choice to manage the load on your system with maximum efficiency. When the Indexing process is run, SAP BusinessObjects Explorer generates an index associated to the objects contained in the Information Space.

Note:
Indexing consumes relatively large resources. If your deployment requires indexes to be run frequently, SAP recommends you deploy multiple Explorer indexing servers on your SAP BusinessObjects Explorer cluster.

Facets

Facets organize the information available within an Information Space. A facet contains the list of values available for each of the objects included in the Information Space. For example, a facet called "Vehicle" could include values such as "Car", "Bicycle", "Motorbike", "Truck", and so on. Facets can be organized in groups at Information Space creation or configuration time. This makes it easier for end users to view related values together and perform drill type exploration from aggregated values to more detailed values in related dimensions.

Personalization

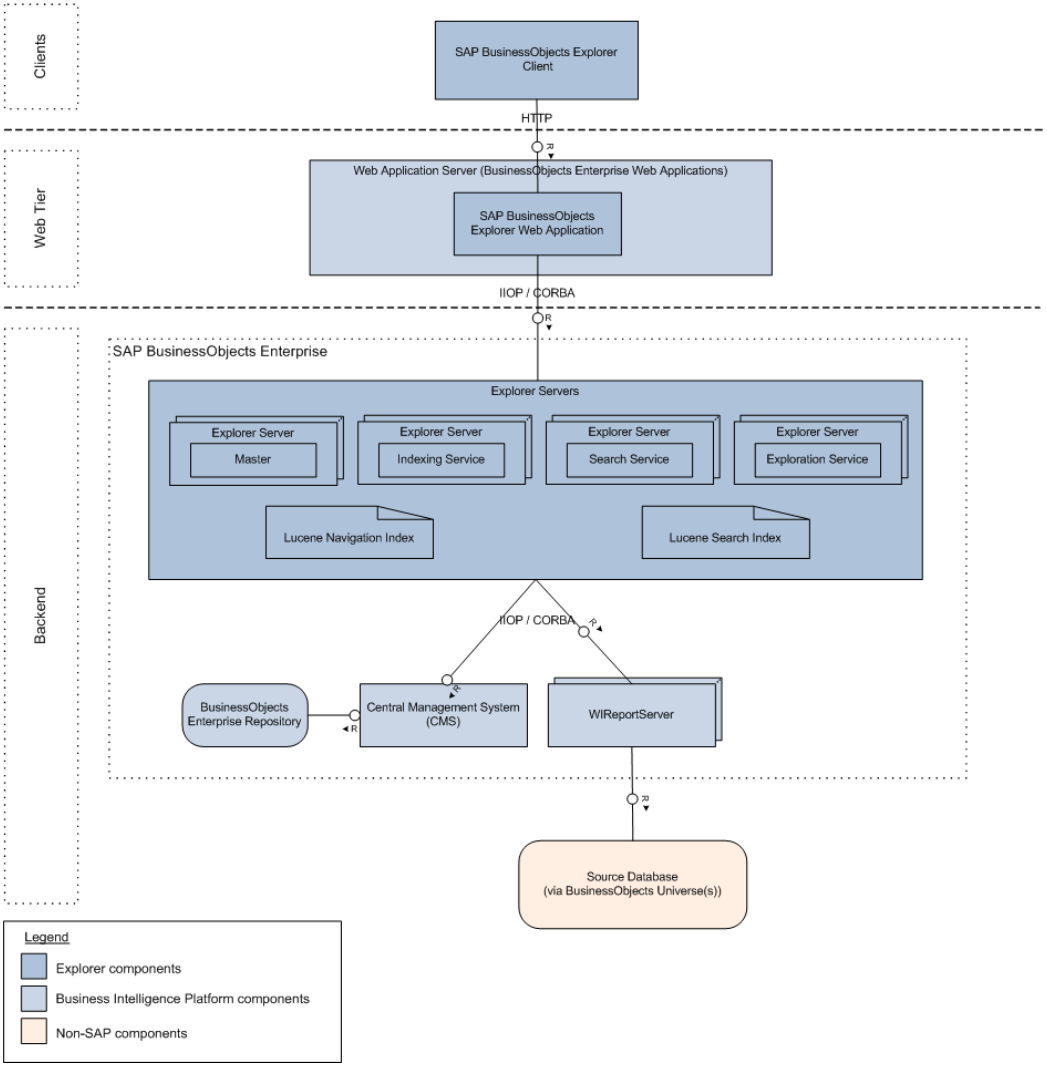
Personalization enables you to make a single Information Space available to all end users, but only make specific objects within that Information Space available to each user. For example, Managers only see the cost center objects for which they are responsible. To enable personalization, administrators need to create a Technical Information Space that contains the Explorer logins of each user mapped to the objects they are allowed to view. The Information Space that contains the data needs to be configured to map to the Technical Information Space.

Technical System Landscape

Architecture

The architecture of SAP BusinessObjects Explorer is structured into the following 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 Enterprise servers.



How SAP BusinessObjects Explorer works with SAP BusinessObjects Enterprise

SAP BusinessObjects Explorer is an add-on to SAP BusinessObjects Enterprise XI. The servers, Information Spaces, and users are managed by

the BusinessObjects Enterprise Central Management Server (CMS) and Central Management Console (CMC), with the exception of audit, which is not available for the Explorer servers.

To see how the Explorer components fit into the Business Intelligence platform, refer to the Architecture overview listed in Related Topics, below.

Related Topics

• *Architecture*

The Explorer servers

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

- Explorer Master Server

  Manages all of the Explorer servers (that is, the Explorer Indexing Server, Explorer Search Server and Explorer Exploration Server).

- Explorer Indexing Server

  Provides and manages the indexing of Information Space data and metadata.

- Explorer Search Server

  Processes search queries and returns search results.

- Explorer Exploration Server

  Provides and manages the Information Space exploration and analysis capabilities including search on data, filtering and aggregation.

Each Explorer server manages its own index.

Supported data providers

SAP BusinessObjects Explorer XI 3.2 can consume data from the following data providers:

- BusinessObjects universes
- Excel spreadsheets
- OLAP universes built on SAP NetWeaver Business Warehouse (BW) InfoCubes

Note:
If you purchase SAP BusinessObjects Explorer (blade) 2.0, the Explorer application can also leverage SAP NetWeaver BW Accelerator (BWA) indexes enabled for Explorer, based on SAP NetWeaver BW InfoCubles and non-SAP data sources. Non-SAP data sources are loaded into BWA using SAP BusinessObjects Data Services.

Distributed deployment scenarios

Implementing a distributed deployment scenario is recommended in the case of larger and critical production deployments.

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

Information:
For information about load balancing for SAP BusinessObjects Enterprise, refer to the SAP Product Availability Matrix (PAM) at: *http://service.sap.com/pam*. From the PAM home page, enter "Explorer XI 3.2" into the Search field on the PAM home page.

Related Topics

- *Network security*
- *Deploying Multiple Index Servers for Improved Indexing*
- *Deploying Multiple Search Servers for Improved Information Space Exploration*
- *Configuring the workload update setting for load balancing*

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*. From the PAM home page, enter "Explorer XI 3.2" into the Search field on the PAM home page.

Monitoring

Monitoring the Explorer servers

SAP BusinessObjects Explorer can be used with SAP Solution Manager 7.0 EhP1 to perform Root Cause Analysis with some limitations. The following steps need to be implemented to make this possible:

- Solution Manager 7.0 EhP1 is properly installed and configured
- Wily Enterprise Manager is propertly installed and configured

Note:
For full details, please see *SAP Note 1388247* - RCA: Managed System Setup for SAP BusinessObjects Explorer.

Tracing and logging the Explorer servers

You can trace the operations of the SAP BusinessObjects Explorer servers by using the SAP standard tracing protocol .trc. Tracing is appended to an ASCII file with the `.trc` extension. The file name is automatically generated at creation time. For example: *`InstallDir`*`\Logging\`*`Server Name`*`.polestarSearch=PolestarSearch_XXXXXXXX_XXXXXX.trc`
By default, `ERROR` tracing is activated.

Note:
The timestamp appears in an encoded format. The log files can be viewed in a decoded format using the SAP Log Viewer after connecting the Explorer Server host to the central Solution Manager system.

Related Topics
- *Configuring the Explorer server trace files*
- *Web application logging*

Configuring the Explorer server trace files

By default, server logging within SAP BusinessObjects Explorer is activated and is configured to only log errors. To activate other trace levels for server logging:

1. Open the BusinessObjects Enterprise CMC, navigate to the "Servers List" and locate the server you want to apply logging to.

   Ensure that the server has been stopped.
2. Right-click the server and click **Properties**.

   The **Properties** dialog appears.
3. Locate the **Command Line Parameters:** textbox.
4. Type the following if it does not already exist:
   - `-loggingPath "C:/Program Files/Business Objects/BusinessObjects Enterprise 12.0/Logging/" -trace true`

   Note:
   The `loggingPath` value is the location to place the output log file and the `trace` value activates logging. By default, if the `trace` value is `false`, only errors are logged.
5. Click **Save** to save your changes.
6. Start the server.

Logs and traces are applied to a log file in the following directory:

- `C:\Program Files\Business Objects\BusinessObjects Enterprise 12.0\Logging\`

The name of the file is generated on creation and is based on the name of the server and when the server was started. For example:

`Server_XXXXXXXX_XXXXXX.trc`

Overriding Explorer server logging methods

To override the existing logging method:

1. Create a file called `polestar.log4j.properties` and store it under the following directory:

   `C:\Program Files\Business Objects\Polestar12.0\`

2. Enter your desired Log4j logging content to the file. For example:

```
log4j.debug=true
log4j.rootLogger=WARN, A1

log4j.appender.A1=org.apache.log4j.ConsoleAppender
log4j.appender.A1.layout=org.apache.log4j.PatternLayout
log4j.appender.A1.layout.ConversionPattern=%-4r [%t]
%-5p %c %x - %m%n

log4j.appender.A2=org.apache.log4j.net.SocketAppender
log4j.appender.A2.remoteHost=localhost
log4j.appender.A2.port=4567
log4j.appender.A2.locationInfo=false
log4j.appender.A2.reconnectionDelay=10000
```

   To filter, enter the following line, and edit it appropriately:

```
log4j.logger.package/class=level
```

   You can log packages and classes using the following levels: `INFO, WARN, ERROR, FATAL`

   For further information on Log4j logging, refer to: `http://logging.apache.org/log4j/`.

3. Restart the servers.

Customized logging for the servers is applied.

Monitoring web parts

Availability monitoring of Web Parts is possible using Wily Introscope.

Note:
For details on how to set this up, see *SAP Note 1388247* - RCA: Managed System Setup for SAP BusinessObjects Explorer.

Tracing and logging web parts

To configure the web parts tracing and logging, you need to edit the `saplog.properties` file which can be found within the `WEB-INF/classes` directory in the web application. By default, it will log all errors to the console of the server.

The `saplog.properties` file includes an example for how to enable logging to a file.

Note:

- Details on the format for `saplog.properties` are provided in the SAP NetWeaver CE 7.1 section of the SAP Library at: *http://help.sap.com/saphelp_nwce10/helpdata/en/63/f79f3f12e1eb0ce10000000a114084/content.htm*
- The timestamp appears in an encoded format. The log files can be viewed in a decoded format using the SAP Log Viewer after connecting the Explorer web parts host to the central Solution Manager system.

Web application logging

Note:
This example is for Apache Tomcat under Windows. For specific logging information for other web application servers, refer to the web application server documentation.

To activate and amend the log4j logging:

1. Open the `log4j.properties` file, located at:

   `C:\Program Files\Business Objects\Tomcat55\webapps\polestar\WEB-INF\classes\`
2. Edit the logging levels you want use (such as `ERROR`) for SAP BusinessObjects Explorer within the file by following the guidelines located at:

   `http://logging.apache.org/log4j/`
3. Save your changes and close the file.

Logs and traces are applied to the following log file:

```
C:\Program Files\Business
Objects\Tomcat55\logs\stdout.log
```

Using JMX monitoring capability

You can leverage JMX to view monitoring information about your Explorer system in a Java console, such as the console deliverd with JDK. To display the monitoring information in a console you need to set some parameters on each of the Explorer servers. You do this by editing the `.ini` file for each server, as follows:

1. Open the ini files located in the following directory:

   <installdir>`\Polestar12.0\`

2. Add the following parameters and values to each `.ini` file:

   ```
   -Dcom.sun.management.jmxremote.port=10000
   -Dcom.sun.management.jmxremote.authenticate=false
   -Dcom.sun.management.jmxremote.ssl=false
   ```

   Note:
   If you have more than one Explorer server installed on the same host machine, the port number for each of these servers must be different.

3. Restart the Explorer servers and then launch the Java console and connect to the Explorer host machine.

System Management

Starting and stopping Explorer

The Explorer servers (Explorer Master server, Explorer Exploration server, Explorer Indexing server, and Explorer Search server) can be started, stopped, or restarted within the BusinessObjects Enterprise CMC.

Information:
Refer to the *BusinessObjects Enterprise Administrator's Guide* XI 3.1 available at: *http://help.sap.com*.

To start SAP BusinessObjects Explorer:

1. Start your Web Application server.
2. Start your CMS database.
3. Start your SAP BusinessObjects Enterprise 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 Enterprise 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 (the servers are named "polestar").

Software Configuration

Web Application settings

Note:
In previous releases, SAP BusinessObjects Explorer was called SAP BusinessObjects Polestar. The previous name, polestar, is used in the Web Application settings properties file.

You can modify application settings via a single properties file:

`default.settings.properties`

The file is stored under the web application server directory, for example:

- `C:\Program Files\Business Objects\Tomcat55\webapps\polestar\WEB-INF\classes\`

Table 5-1: Explorer Web Application settings

Setting	Description	Example	Default Values
`product.name`	For internal use only.		
`default.locale`	The default locale to use. For example, English.	`en`	
`default.cms.name`	The name and port number of your CMS.	`myserver:6400`	
`show.cms.name`	Determines if the value stored in `default.cms.name` is displayed in the **CMS Name** field of the Log On page.		`true` `false`
`disable.cms.name`	Disables the CMS name textbox within the Log On page. You cannot change the textbox value.		`true` `false`
`default.authentication.method`	The default log on authentication to use. The value is displayed in the **Authentication** list of the Log On page.	`secEnterprise`	

Setting	Description	Example	Default Values
authentications	The values that populate the **Authentication** list.	sec Enterprise, secWindowsNT, secLDAP	
hide.authentication.method	Determines if the **Authentication** list is displayed in the Log On page.		true false
disable.authentication.method	Disables the **Authentication** list within the Log On page. You cannot change the value.		true false
use.effects	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.		true false
request.timeout	The period of time in seconds before Explorer times out after an operation, such as logging into the system.	30 100	
help.url	The root location for the Explorer documentation.		/polestar_help_
tutorial.url	The root location for the Explorer tutorial.		/polestar_tutorial

Setting	Description	Example	Default Values
`disable.password.encryption`	Determines if password encryption is to be used.		`true` `false`
`opendoc.url`	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 via OpenDocument. If you do not set the value, the query is not launched.	`http://server:port/OpenDocument/opendoc/openDocument.jsp`	

Note:
There are also several settings used for SAP authentication.

Related Topics
• *Configuring SAP BusinessObjects Explorer for SAP authentication*

Explorer server settings

You can configure the following settings:

- The number of Corba threads to improve server communication.
- 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 in order that the load is balanced.

You can also configure the indexing path (in order of priority) via:

- a properties file (for all servers on a single node)
- the BusinessObjects Enterprise 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 via 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 via a properties file on a node, the CCM settings are ignored for that node.

Information Space indexes path

You can specify where you want the indexes to be stored. You can either set the indexing path via the BusinessObjects Enterprise CMC or create a properties file and specify the index path there.

Related Topics

- *Configuring the index path using the CMC*
- *Configuring the index path using a properties file*

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%/Polestar/index`

1. Logon to the CMC.
2. Navigate to the Explorer Indexing server you want to configure via **Servers**.
3. Right-click the server and click **Properties**.
4. Within **Index Files Directory:**, enter your preferred 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.

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 `polestar.service.properties` located under:
   - `C:\Program Files\Business Objects\Polestar12.0\`

   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.

Session timeout period

The Explorer Master Server ensures that useless 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 either:

- Change a setting for a single node. Create or edit a properties file named `polestar.service.properties` located under:
  - `C:\Program Files\Business Objects\Polestar12.0\`

  Add this entry: `watchdog.timeout=30`, amend the value accordingly and restart the servers.
- Add the following to the command line to configure a single server:

  ```
  -watchdog.timeout 30
  ```

  For example:

  ```
  -loggingPath "C:/Program Files/Business Objects/Busi
  nessObjects Enterprise 12.0/Logging/" -serverkind
  polestarMaster -trace true -watchdog.timeout 30
  ```

Note:
The default value of `watchdog.timeout` is 300 000 milliseconds (5 minutes). Altering the setting (especially if the specified value is too low) can have an impact on stability and even delete a valid session. This value must be smaller than the value of `workload.update.delay`.

Request timeout limit

Timeouts may occur while using large datasets.

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

```
C:\Program Files\Business Objects\Tomcat55\we
bapps\polestar\WEB-INF\classes\default.settings.proper
ties
```

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.

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 Topics

• *Configuring the bookmark validity period via the CMC*

Configuring the bookmark validity period via the CMC

To change the bookmark validation period via the BusinessObjects Enterprise CMC, amend the value within the CMC administration page. In this case, the value is taken into account by all slave nodes.

1. Logon to the BusinessObjects Enterprise CMC.
2. Navigate to **Manage** > **Applications**.
3. Right-click **Polestar** and click **Properties**.
4. Change the **Bookmark validity:** values and click **Save**.

Configuring the bookmark validity period via the server command line within the CMC

To change the Explorer validity period for a single server, edit the server properties within the BusinessObjects Enterprise CMC.

1. Logon to the BusinessObjects Enterprise 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/Business Objects/BusinessObjects Enterprise 12.0/Logging/" -serverkind polestarIndexing -trace true -bookmark.validity.time 365 -bookmark.validity.unit DAYS
   ```

5. Click **Save**.

Configuring the bookmark validity period via 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 `polestar.service.properties` located under:
   - `C:\Program Files\Business Objects\Polestar12.0\`
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.

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.

On 32 bit machines, JVMs cannot address more than 2GB, globally. Because there are multiple memory pools with different sizes, the practical limit for the heap size is approximately 1.5GB.

Note:
The memory is configured via an INI configuration file. Do not use the server command line to configure the memory.

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.

Note:
Do not use the server command line to configure the memory. Only use the INI configuration file.

To modify the JVM heap size value:

1. Stop the Explorer server on which you want to modify the JVM heap size value.
2. Navigate to:

   `C:/Program Files/Business Objects/Polestar12.0/`
3. Edit the INI configuration file corresponding to the server you want to configure.

   For example, if you want to increase the memory for the Explorer Exploration Server, edit the `poleExpl.ini` file.
4. Find the Xmx entry, type your desired memory size:

   -Xmx1g

   The value of the heap size can be changed according to your requirements. For example, change the value from `1`GB to `1600`MB.

5. Save the file.
6. Re-start the server.

The server you have configured uses a maximum JVM memory heap size according to the value within the command line.

Example:

You want to change the Explorer Master Server heap size to `1628`MB:

1. Navigate to: `C:/Program Files/Business Objects/Polestar12.0/`.
2. Edit the `poleMast.ini` configuration file.
3. Find the Xmx entry and edit the entry as follows:

   -Xmx1628m

4. Save the file.

Configuring the number of Corba threads

This parameter defines the maximum number of requests that can be handled simultaneously by a given server. Most web application servers have similar settings where you can configure the number of corba threads you want to make available. For example:

- on Apache Tomcat you specify a value for the maxThreads parameter
- on IBM WebSphere you specifiy a value for the thread-maximum-size setting in the `server.xml` file.

By default, the number of Corba threads is set to 100 on each of the Explorer servers (Master Server, Navigation Server, Indexing Server, Search Server). This is suitable for a simple deployment scenario, where Apache Tomcat is your Web Application Server and you only have one Master Server, one Navigation Server, one Indexing Server and one Search Server deployed at the backend. Setting 1000 threads for the Explorer backend servers when Apache Tomcat only has 100 is of no use and could even be harmful because it would cause many context switches and thus impact performance.

In the case of a complex deployment scenario, however, it may be necessary to either increase this value or add more backend nodes. For example, if your deployment includes multiple WebSphere instances behind a load

balancer, with the thread-maximum-size parameter set to its maximum value of 1000, it would not make sense to keep the default 100 thread pool size for the Explorer servers, because this would merely push the bottleneck to the backend.

The absolute value depends on the expected number of concurrent sessions. It is necessary to adjust the concurrency level consistently throughout the entire stack in order to maximize throughput on all nodes.

Configuring the number of Corba threads using a command line in the CMC

To change the number of Corba threads for a single server, edit the server properties within the BusinessObjects Enterprise 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:

   ```
   -nb_threads 150
   ```

   For example:

   ```
   -loggingPath "C:/Program Files/Business Objects/Busi
   nessObjects Enterprise 12.0/Logging/" -serverkind
   polestarIndexing -trace true -nb_threads 150
   ```

5. Click **Save**.

Configuring the number of Corba threads via a properties file

You can change the number of Corba servers for all servers on a single node, by creating or editing a properties files.

1. Create or edit a properties file named `polestar.service.properties` located under:
   - `C:\Program Files\Business Objects\Polestar12.0\`
2. Add this entry: `nb_threads=150`.
3. Amend the value accordingly and save the file.
4. Restart the servers.

Configuring the number of Corba threads via the CMC

To change the number of Corba threads via the CMC, amend the value within the CMC administration page. In this case, the value is taken into account by all slave nodes.

1. Logon to the CMC.
2. Navigate to **Manage** > **Applications**.
3. Right-click **Explorer** and click **Properties**.
4. Change the **Number of threads:** value and click **Save**.

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.

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 SAP BusinessObjects Enterprise CMC.
2. Navigate to: **ApplicationsExplorerPropertiesAdvanced 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.

Standardizing font usage across your deployment

In previous releases, SAP BusinessObjects Explorer was called SAP BusinessObjects Polestar. The directories on the Explorer servers use the previous name: `polestar`.

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.

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_Polestar_InstallDir>**/Polestar12.0/jre/lib/fonts

Installing custom fonts

On some language versions fonts may appear too large, resulting in chart areas being hidden by axis labels or facet values being truncated, and some language-specific special characters may be missing. These types of font inconsistencies are more common on UNIX platforms than Windows. To solve these issues, you can install fonts of their choice on the servers and/or clients. Once the fonts are installed, you need to modify two files so that these fonts are used in both the charts and the rest of the application GUI.

1. Stop the Exploration servers.
2. Install and distribute the font of your choice to the Exploration servers and clients.

   The location on the server is: **<BusinessObjects_Polestar_InstallDir>**/Polestar12.0/jre/lib/fonts.

Configuring custom fonts in charts

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

1. Open the **<BusinessObjects_Polestar_InstallDir>**/polestar12.0/chart-template.sample file for edit.
2. Search for the following string: [Arial Unicode J, Arial Unicode MS, Arial]
3. Replace the three font names with the names of your installed fonts, as follows:

   [FontFaceName 1;FontFaceName 2;Font FaceName 3]

   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.

4. Optional: to specify the font size, search for the following string: [10.0];
5. Replace the "10.0" font size with the size of your choice, for example you would specify a choice of two size 14 Japanese fonts as follows:

```
<GlobalValue>
   <DefaultValues>
      <DefaultValue type="4" value="[jiskan24.pcf.z
;k14.pcf.Z];
[14.0];[0];[0;0;0;0];[]" />
   </DefaultValues>
</GlobalValue>
```

Note:
If a different font size is specified for a particular chart zone, such as the legend, then the global font size is overridden in that particular chart zone.

6. Rename the file `chart-template.xml` and save it to **<BusinessObjects_Polestar_InstallDir>**`/Polestar12.0/`.

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\polestar\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\polestar\schema\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\polestar\schema\global\`**<language_code>**`\`**<language>**`.css\`

     For example, for Chinese, you would save the file as follows: **<install_dir>**`\webapps\polestar\schema\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.

Administration Tools

BI platform administrative tools

SAP BusinessObjects Enterprise includes two key administrative tools that allow you to access a variety of server settings:

- **Central Management Console (CMC)**

  The CMC is the web-based administration tool that allows you to view and to modify server settings while BusinessObjects Enterprise is running. For instance, you use the CMC to change the status of a server, change server settings, access server metrics, or create server groups. Because

the CMC is a web-based interface, you can configure your BusinessObjects Enterprise servers remotely over the Internet or through your corporate intranet.

- **Central Configuration Manager (CCM)**

  The CCM is a troubleshooting tool that allows you to configure and manage the Server Intelligence Agent. The Server Intelligence Agent is the component that allows you to manage all servers through the CMC. You can also use the CCM to create and manage nodes in your deployment. Note that most server management tasks are now handled through the CMC, not in the CCM. (The CCM was the primary tool for server management in previous versions.) After you configure and enable nodes in the CCM, you can perform other server management tasks in the CMC.

  The CCM is now used primarily for node configuration, and for troubleshooting when you cannot access the CMC. For example, if you need to reconfigure the CMS and do not have access to the CMC, you can click Manage Servers in the CCM to log in and view all servers in your deployment.

  When managing servers through the Central Configuration Manager (CCM) in a side-by-side deployment, where two BusinessObjects Enterprise systems work alongside one another, you must ensure that you connect to the correct deployment so that you don't accidentally edit, disable, or delete the servers connected to another system. It is recommended that you follow these best practices:

  - Specify the port number when connecting to the deployments.

    For example, mymachine:6400 or mymachine:6403.

  - Administer the BusinessObjects Enterprise deployment from the local machine, and administer the previous version's deployment remotely, from a different machine.
  - Use different passwords for the administrator accounts for the two deployments.

Related Topics

• *Managing servers in the CMC*

Managing servers in the CMC

The Servers management area of the CMC is your primary tool for server management tasks. It provides a list of all of the servers in your BusinessObjects Enterprise. For most management and configuration tasks, you need to select a server in the list and choose a command from the Manage or Action menu.

About the navigation tree

The navigation tree on the left side of the Servers management area provides a number of ways to view the Servers list. Select items in the navigation tree to change the information displayed in the Details pane.

Navigation tree option	Description
Servers List	Displays a complete list of all servers in the deployment.
Server Groups List	Displays a flat list of all available server groups in the Details pane. Select this option if you want to configure a server group's settings or security.
Server Groups	Lists the server groups and the servers within each server group. When you select a server group, its servers and server groups are displayed in the Details pane in a hierarchical view.
Nodes	Displays a list of the nodes in your deployment. Nodes are configured in the CCM.

Navigation tree option	Description
Service Categories	Provides a list of the types of services that may be in your deployment. Service categories are divided into core BusinessObjects Enterprise services and services associated with specific Business Objects components. Service categories include: • **Core Services** • **Crystal Reports** • **Desktop Intelligence** • **Explorer** • **Performance Management** • **Voyager** • **Web Intelligence** Select a service category in the navigation list to view the servers in the category.

Navigation tree option	Description
Server Status	Displays the servers according to their current status. This is a valuable tool for checking to see which of your servers are running or stopped. If you are experiencing slow performance on the system, for example, you can use the Server Status list to quickly determine if any of your servers are in an abnormal state. Possible server states include the following: • Stopped • **Starting** • **Initializing** • Running • **Stopping** • Started with Errors • Failed • **Waiting for resources**

About the Details pane

Depending on which options you have selected in the navigation tree, the Details pane on the right side of the Servers management area shows a list of servers, server groups, states, categories, or nodes. The following table describes the information listed for servers in the Details pane.

Note:
For nodes, server groups, categories, and states, the Details pane usually shows names and descriptions.

Details pane column	Description
Server Name or **Name**	Displays the name of the server.
State	Displays the current status of the server. You can sort by server state using the Server Status list in the navigation tree. Possible server states include the following: • Stopped • **Starting** • **Initializing** • Running • **Stopping** • Started with Errors • Failed • **Waiting for resources**
Enabled	Displays whether the server is enabled or disabled.
Stale	If the server is marked as Stale, then it requires a restart. For example, if you change certain server settings in the server's Properties dialog box, you may need to restart the server before the changes will take effect.
Kind	Displays the type of server.

Details pane column	Description
Host Name	Displays the Host Name for the server.
PID	Displays the unique Process ID number for the server.
Description	Displays a description of the server. You can change this description in the server's Properties page.
Date Modified	Displays the date that the server was last modified, or when the server's state was changed. This column is very useful if you want to check the status of recently changed servers.

Backup and Restore

Backing up your Explorer System

You can use the SAP BusinessObjects Enterprise Client Tools component the Import Wizard to backup Explorer objects (Information Spaces and user profiles), and then migrate those Information Spaces to a new BusinessObjects Enterprise CMS. You need to follow these steps:

- Use the SAP BusinessObjects Enterprise Import Wizard to create a Business Intelligence Archive file (BIAR) that contains the Explorer objects on the CMS.

Note:
These objects include the user profiles and Information Spaces.

- Import the BIAR file to the new CMS.

For full details on how to use the Import Wizard, see: *SAP BusinessObjects Enterprise XI 3.1 Import Wizard Guide* available at: *http://help.sap.com/businessobject/product_guides/boexir31/en/xi3-1_bip_importwiz_en.pdf*.

Load Balancing

Loadbalancing

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 Enterprise, refer to the SAP Product Availability Matrix (PAM) at: *http://service.sap.com/pam*. From the PAM home page, enter "Explorer XI 3.2" into the Search field on the PAM home page.

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 `polestar.service.properties` located under:
  - `C:\Program Files\Business Objects\Polestar12.0\`

  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
  ```

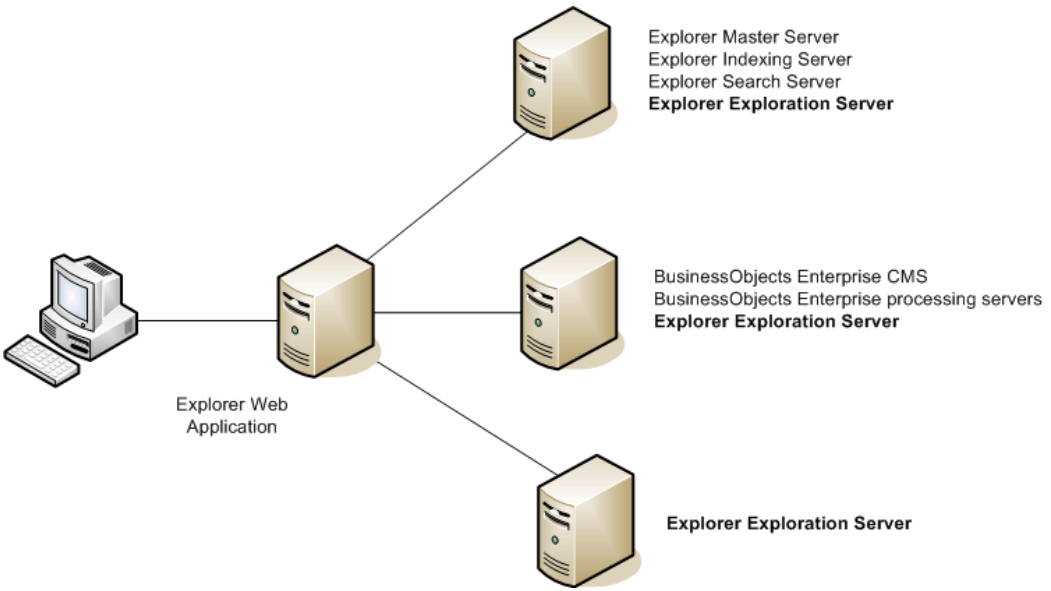
  For example:

  ```
  -loggingPath "C:/Program Files/Business Objects/Busi
  nessObjects Enterprise 12.0/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`.

Deploying Multiple Search 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 Topics

• *Explorer User Profiles*

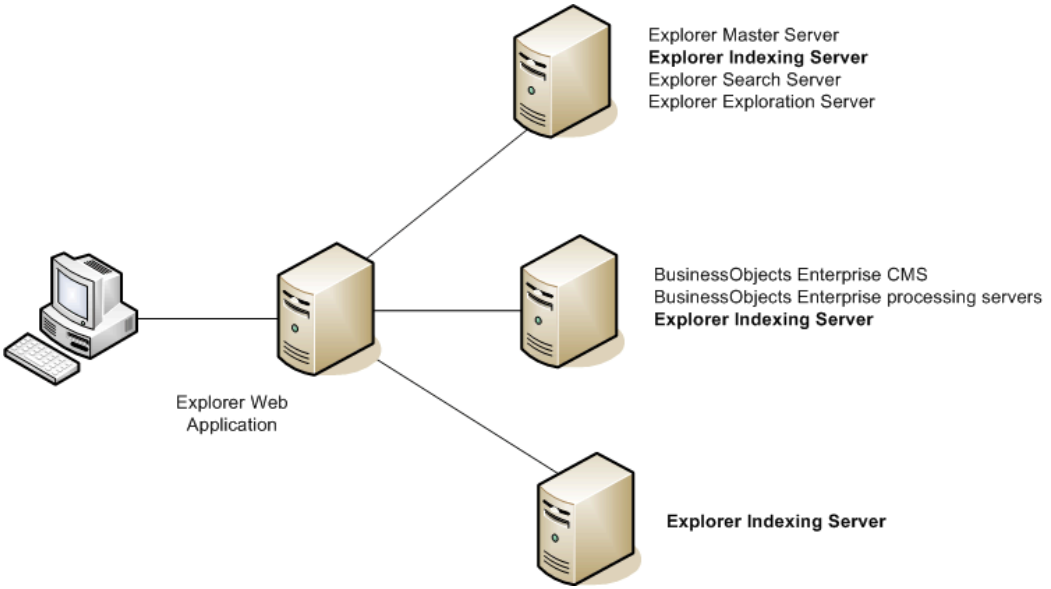
Deploying Multiple Index Servers for Improved Indexing

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 Enterprise is installed, and additional Explorer Indexing Servers on separate machines,

ensuring they are directed to the SAP BusinessObjects Enterprise 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.

Note:
It is good practice to install a Explorer Search Server and a Explorer Exploration Server on the additional machines. This allows those machines to share the load of searching and exploration when there is no indexing in progress.

Related Topics

- *Indexing best practices*

Periodic Tasks

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.

User Administration and Authentication

User Management

Managing users and groups

User profiles are managed and stored in the SAP BusinessObjects Enterprise Central Managment Server. The administration consol 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 *Setting Rights* and the *Managing Users and Groups* chapters in the *SAP BusinessObjects Enterprise XI 3.1 Administrator's Guide* available on the SAP Help portal at *http://help.sap.com*.

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.

More Information:
For full information on user management, access levels and authorization, refer to the *SAP BusinessObjects Explorer (blade) 2.0 Security Guide* on the **SAP BusinessObjects** > **BI Solutions** section of the SAP Help portal at: *http://help.sap.com*.

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 BusinessObjects Enterprise 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 BusinessObjects Enterprise CMS

Note:
If objects have object-level security applied to them (for example universe objects within SAP BusinessObjects Designer), SAP BusinessObjects Explorer supports this security.

Information:
For detailed information on user rights and setting those rights, refer to the *SAP BusinessObjects Enterprise Administrator's Guide* for XI 3.1 available at: *http://help.sap.com*.

Related Topics

- *Authorization required for Information Spaces*
- *Explorer User Profiles*

Explorer user rights per user profile

Note:
In previous releases, SAP BusinessObjects Explorer was called SAP BusinessObjects Polestar. The previous name appears in the SAP BusinessObjects Enterprise CMC.

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

Table 5-4: 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

User Profile	Permissions
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 Polestar and view this object in the CMC

User Profile	Permissions
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
	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 Polestar 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

Table 5-5: 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.

Table 5-6: 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.

User Profile	BusinessObjects Enterprise Access Level(s)	
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 *SAP BusinessObjects Enterprise Administrator's Guide* for XI 3.1 available at: *http://help.sap.com*.

Related Topics

• *Explorer User Profiles*

Authentication methods

SAP BusinessObjects Explorer supports the authentication methods supported by SAP BusinessObjects Enterprise:

- 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.

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, verify that SAP authentication is already configured for the BusinessObjects Enterprise CMS. For information on how to do this, refer to the *SAP BusinessObjects Explorer (blade) 2.0 Installation Guide* available on the "SAP BusinessObjects" tab at. *http://service.sap.com*.

The SAP authentication settings are stored within the Explorer settings properties file (`default.settings.properties`) in: `<INSTALLDIR>/bobje/enterprise120/java/applications`.

Table 5-7: SAP authentication web application settings

Setting	Description	Example Configuration (without SAP Authentication)	Example Configuration (for SAP Authentication)
`default.sapsystem.name`	The name of the SAP system.		`SAP_ID`
`show.sapsystem.name`	Determines if the SAP system name is shown within the Log On page.	`false`	`true`

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

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
```

Single Sign On

Note:
In previous releases, SAP BusinessObjects Explorer was called SAP BusinessObjects Polestar. The directories on the Explorer servers use the previous name: `polestar`.

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

- Enterprise
- Windows AD
- LDAP

The following files are used to configure SSO:

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

Related Topics

• *Activating Single Sign On*
• *SSO for WinAD authentication using Vintela*
• *SSO for LDAP authentication using SiteMinder*

• *Enabling Trusted Authentication*

Activating Single Sign On

SSO must already be configured on BusinessObjects Enterprise before you configure SSO on SAP BusinessObjects Explorer.

Information:
See the *SAP BusinessObjects Enterprise Administrator's Guide* for XI 3.1 at: *http://help.sap.com*.

To activate SSO:

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

Setting	Values
sso.global.enabled	true
sso.global.providers	**<provider_name>**

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
sso.global.cms	Controls the CMS used during the authentication. If no value is specified, the `default.cms.name` value set in the `default.settings.properties` is used.	true
sso.global.authentication	Controls the authentication method used.	Possible values are: • `secEnterprise` • `secLDAP` • `secWinAD`
sso.global.errorOnFailure	Controls how the SSO system behaves if no credential has been found.	Two possible values: • `false` - the logon workflow continues normally as it would if SSO was not enabled • `true` - the logon dialog is not displayed

Example:

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

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 overriden and is implicitely 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 `$<PolestarWebappRoot>/WEB-INF/web.xml`.

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

You also need to set the following parameters:

Setting	Description	Values
class-Name		com.businessob-jects.datadiscov-ery.sso.vintela.VintelaS-SOProvider
cms	controls the CMS used for authentica-tion. It can be used to override the de-fault CMS.	**<cms_name>**

Example:

```
#
# Vintela parameters (sso.vintela provider)
#
sso.vintela.className=com.businessobjects.datadiscov
ery.sso.vintela.VintelaSSOProvider
sso.vintela.cms=
```

SSO for WinAD using Kerberos

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

Information:
See the *SAP BusinessObjects Enterprise Administrator's Guide* for XI 3.1 at: *http://help.sap.com*.

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
className		com.businessobjects.datadiscovery.sso.generic.GenericSSOProvider
cms	controls the CMS used for authentication. It can be used to override the default CMS	**<cms_name>**
authentication		By default, this is set to: secLDAP. It can be changed to secWinAD
user.retrieval	the method to be used to retrieve the user name	The value is set to COOKIE by default. **Note:** The default value should not be changed.
user.param	specifies the parameter used by the user.retrieval method to retrieve the user name	The value is set to SMSESSION by default. **Note:** The default value should not be changed.

Example:

```
#
# SiteMinder parameters (sso.siteminder)
#
```

```
sso.siteminder.className=com.businessobjects.datadiscov
ery.sso.generic.GenericSSOProvider
sso.siteminder.cms=
sso.siteminder.authentication=secLDAP
sso.siteminder.user.retrieval=COOKIE
sso.siteminder.user.param=SMSESSION
```

Enabling Trusted Authentication

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

Information:
See the *SAP BusinessObjects Enterprise Administrator's Guide* for XI 3.1 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:
   `$<PolestarWebappRoot>/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. **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	RE-MOTE_US-ER
Retrieve the user name from the contents of a specified parameter in the request URL. **Note:** You define the query string parameter in the trust-ed.auth.user.param parameter in the `web.xml` file for SAP BusinessObjects InfoView.	HTTP_HEAD-ER
Retrieve the user name from the contents of a specified cookie. **Note:** You define the cookie in the trusted.auth.user.param parameter in the `web.xml` file for SAP BusinessObjects InfoView.	COOKIE
	WEB_SES-SION

User Retrieval Method	Value
Retrieve the user name from the contents of a specified session variable. **Note:** You define the web session variable in the trusted.auth.user.param parameter in the `web.xml` file for SAP BusinessObjects InfoView.	
Retrieve the user name from a call to getUserPrincipal ( ) .getName ( ) on the HttpServletRequest object for the current request in a servlet or JSP.	USER_PRINCIPAL

For more information about the possible parameter values, see the *SAP BusinessObjects Enterprise Administrator's Guide* for XI 3.1 at: *http://help.sap.com*.

6. 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 `$<PolestarWebappRoot>/WEB-INF/classes/sso.properties` file on SAP BusinessObjects Explorer.

7. Set the following parameter value in the `$<PolestarWebappRoot>/WEB-INF/classes/sso.properties` file:

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

8. Save and close the file.

Re-start the Explorer Web Application Server.

Managing Information Spaces

Authorization required for Information Spaces

The supported data providers for SAP BusinessObjects Explorer XI 3.2 are:

- BusinessObjects universes (.unv files) created using the SAP BusinessObjects universe designer tool. The universes can be based on RDBMS or OLAP data sources.
- 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 your in the SAP BusinessObjects Enterprse CMC:

- access rights to the universe
- access rights to the folder in which the universe is stored on the CMS
- the ability to create and edit Web Intelligence queries

  This is necessary because Explorer uses the SAP BusinessObjects Web Intelligence query engine behind the scenes to retrieve the data to the Information Space.

- rights to refresh Web Intelligence queries

  This is necessary so that the Information Space values can be refreshed by the latest values on the underlying data source whenever the Information Space is scheduled.

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 Topics

• *Configuring the number of possible concurrent Excel uploads*

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 SAP BusinessObjects Enterprise CMC. Security rights can prevent any unauthorized personnel accessing, viewing, or performing operations on the Information Space.

Alternatively, move the Information Space to a secure folder.

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.

Note:
If BWA indexes consumed by Explorer are re-indexed using the BWA Index Maintenance Wizard for SAP BusinessObjects Explorer, then it is necessary to re-index the Information Spaces built on those indexes, using Explorer.

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 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.

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 informaton 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.

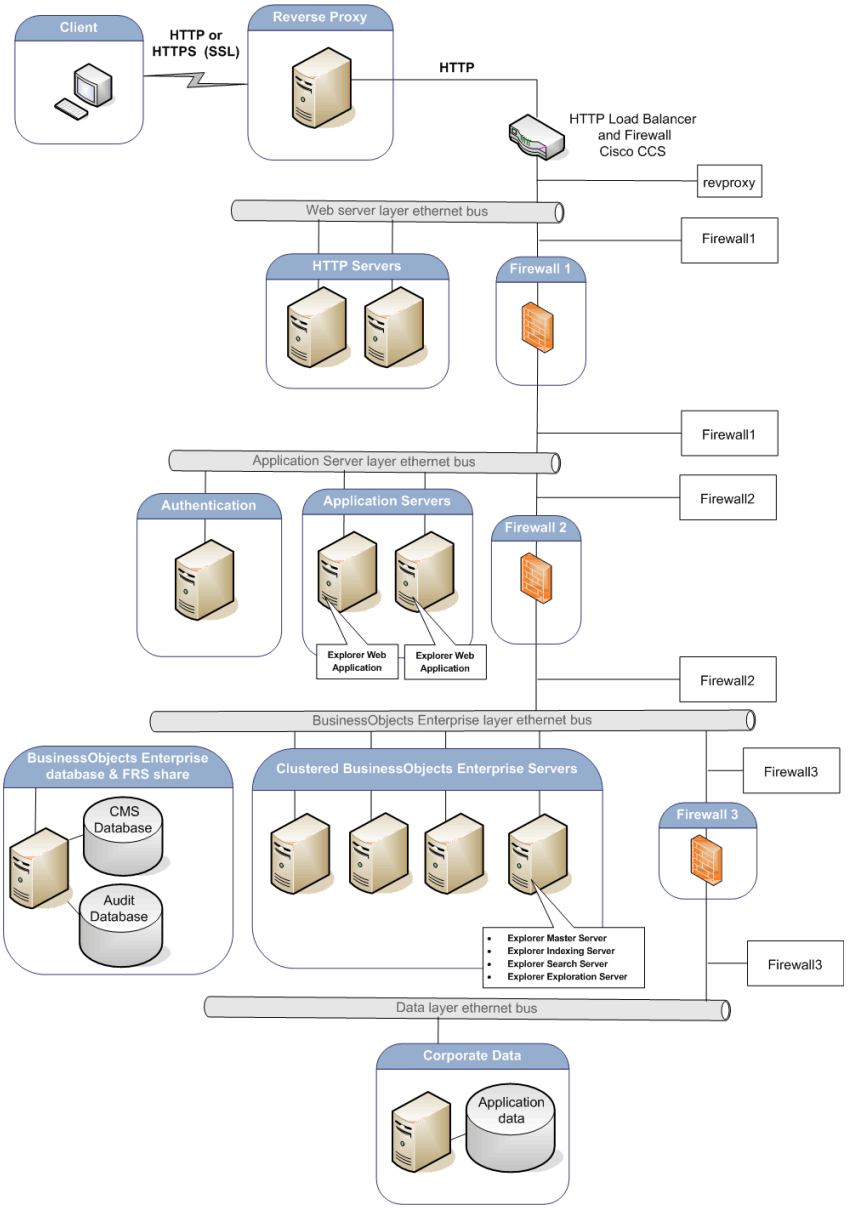
- Is the definition you want valid?

  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.

Network and Communication Security

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.



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

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 *BusinessObjects Enterprise Administrator's Guide* XI 3.1 available on the "SAP BusinessObjects" tab at: *http://help.sap.com*.

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.

To set up SSL for all server communication you need to perform the following steps:

- Deploy BusinessObjects Enterprise with SSL enabled.
- Create key and certificate files for each machine in your deployment.

- Configure the location of these files in the Central Configuration Manager (CCM) and your web application server.

Note:
If you are using thick clients, such as Crystal Reports or Designer you will also need to configure these for SSL if you will be connecting to the CMS from these thick client. Otherwise, you will get errors when you attempt to connect to a CMS that has been configured for SSL from a thick client that has not been configured the same way.

Creating key and certificate files

To set up SSL protocol for your server communication, use the SSLC command line tool to create a key file and a certificate file for each machine in your deployment.

Note:

- You need to create certificates and keys for all machines in the deployment, including machines running thick client components such as Crystal Reports. For these client machines, use the `sslconfig` command line tool to do the configuration.
- For maximum security, all private keys should be protected and should not be transferred through unsecured communication channels.

To create key and certificate files for a machine

1. Run the `SSLC.exe` command line tool.

   The SSLC tool is installed with your BusinessObjects Enterprise software. (On Windows, for example, it is installed by default in C:\Program Files\Business Objects\BusinessObjects Enterprise 12.0\win32_x86.)

2. Type the following command:

   sslc req -config sslc.cnf -new -out cacert.req

   This command creates two files, a Certificate Authority (CA) certificate request (cacert.req) and a private key (privkey.pem).

3. To decrypt the private key, type the following command:

sslc rsa -in privkey.pem -out cakey.pem

This command creates the decrypted key, cakey.pem.

4. To sign the CA certificate, type the following command:

   sslc x509 -in cacert.req -out cacert.pem -req -signkey cakey.pem -days 365

   This command creates a self-signed certificate, cacert.pem, that expires after 365 days. Choose the number of days that suits your security needs.

5. Using a text editor, open the `sslc.cnf` file, which is stored in the same folder as the SSLC command line tool.

   Note:
   Using a text editor is highly recommended for Windows because Windows Explorer may not properly recognize and display files with the .cnf extension.

6. Perform the following steps based on settings in the `sslc.cnf` file.
   - Place the `cakey.pem` and `cacert.pem` files in the directories specified by `sslc.cnf` file's `certificate` and `private_key` options.

     By default, the settings in the sslc.cnf file are:

     certificate = $dir/cacert.pem

     private_key = $dir/private/cakey.pem
   - Create a file with the name specified by the `sslc.cnf` file's `database` setting.

     Note:
     By default, this file is $dir/index.txt. The file can be empty.
   - Create a file with the name specified by the `sslc.cnf` file's `serial` setting.

     Ensure that this file provides an octet-string serial number (in hexadecimal format).

Note:
To ensure that you can create and sign more certificates, choose a large hexadecimal number with an even number of digits, such as 11111111111111111111111111111111.)'

- Create the directory specified by the `sslc.cnf` file's `new_certs_dir` setting.

7. To create a certificate request and a private key, type the following command:

   sslc req -config sslc.cnf -new -out servercert.req

   The certificate and key files generated are placed under the current working folder.

8. Make a copy of the private key.

   copy privkey.pem server.key

9. To sign the certificate with the CA certificate, type the following command:

   sslc ca -config sslc.cnf -days 365 -out servercert.pem -in servercert.req

   This command creates the servercert.pem file, which contains the signed certificate.

10. Use the following commands to convert the certificates to DER encoded certificates:

    sslc x509 -in cacert.pem -out cacert.der -outform DER

    sslc x509 -in servercert.pem -out servercert.der -outform DER

    Note:
    The CA certificate (cacert.der) and its corresponding private key (cakey.pem) need to be generated only once per deployment. All machines in the same deployment must share the same CA certificates. All other certificates need to be signed by the private key of any of the CA certificates.

11. Create a text file for storing the plain text `passphrase` used for decrypting the generated private key.
12. Store the following key and certificate files in a secure location (under the same directory) that can be accessed by the machines in your BusinessObjects Enterprise deployment:

- the trusted certificate file (cacert.der)
- the generated server certificate file (servercert.der)
- the server key file (server.key)
- the passphrase file

This location will be used to configure SSL for the CCM and your web application server.

Configuring the SSL protocol

After you create keys and certificates for each machine in your deployment, and store them in a secure location, you need to provide the Central Configuration Manager (CCM) and your web application server with the secure location.

To configure the SSL protocol in the CCM

1. In the CCM, right-click the Server Intelligence Agent and choose **Properties**.
2. In the Properties dialog box, click the **Protocol** tab.
3. Make sure **Enable SSL** is selected, and provide the file path for the directory where you stored the key and certificate files.

   Note:
   Make sure you provide the directory for the machine that the server is running on.

To configure the SSL protocol for the web application server

1. If you have a J2EE web application server, run the Java SDK with the following system properties set. For example:

-Dbusinessobjects.orb.oci.protocol=ssl -DcertDir=d:\ssl
-DtrustedCert=cacert.der -DsslCert=clientcert.der -DsslKey=client.key
-Dpassphrase=passphrase.txt

The following table shows the descriptions that correspond to these examples:

Example	Description
DcertDir=d:\ssl	The directory to store all the certificates and keys.
DtrustedCert=cacert.der	Trusted certificate file. If specifying more than one, separate with semicolons.
DsslCert=clientcert.der	Certificate used by the SDK.
DsslKey=client.key	Private key of the SDK certificate.
Dpassphrase=passphrase.txt	The file that stores the passphrase for the private key.

2. If you have an IIS web application server, run the `sslconfig` tool from the command line and follow the configuration steps.

Data storage security

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 BusinessObjects Enterprise Central Management Server (CMS) file system.
- If the data provider is SAP NetWeaver BW Accelerator, providing data to Explorer either from SAP NetWeaver BW or from non-DAP data sources (via SAP BusinessObjects Data Services), the data is stored on the BW Accelerator.

Metadata is stored in the BusinessObjects Enterprise 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*\BusinessObjects Enterprise 12.0\Data\Polestar 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 SAP BusinessObjects Enterprise 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 Enterprise File Repository Service (FRS). This data is not human readable.

Data protection

SAP BusinessObjects Explorer relies on database, SAP BusinessObjects Enterprise platform and SAP NetWeaver BW and BW Accelerator 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. Nevertheless, 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. BW Accelerator indexes need to be secured using SAP NetWeaver BW security.

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.

High Availability

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 Enterprise 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 Topics

- *Configuring failover between CMS servers*
- *Configuring failover between Explorer Master servers*

Configuring failover between CMS servers

To run several SAP BusinessObjects Enterprise 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 Enterprise requests.

Note:
For full details on how to cluster a CMS with an existing CMS, refer to the *Clustering Central Management Servers* chapter in the *SAP BusinessObjects Enterprise XI 3.1 Administrator's Guide* available on the SAP Help portal at *http://help.sap.com*.

Configuring failover between Explorer Master servers

You need to have two Explorer Master servers, each deployed on a separate host.

To set up failover between two Explorer Master servers:

1. Log into the SAP BusinessObjects Enterprise Central Management Console (CMC).
2. Go to "Applications".
3. Click "Explorer", and add the following lines into the "Advanced configuration" field:

```
masters.multicast.group=230.0.0.1
masters.multicast.port=9876
```

Note:
Multicast needs to be activated on each blade that has an Explorer Master server.

Troubleshooting

Understanding error messages

Information about each error message generated by an Explorer service or component is provided in the *SAP BusinessObjects Explorer Error Message Guide* available at: *http://help.sap.com*.

More Information

Information Resource	Location
SAP BusinessObjects product information	*http://www.sap.com*
SAP Help Portal	Select *http://help.sap.com* > SAP BusinessObjects. You can access the most up-to-date documentation covering all SAP BusinessObjects products and their deployment at the SAP Help Portal. You can download PDF versions or installable HTML libraries. Certain guides are stored on the SAP Service Marketplace and are not available from the SAP Help Portal. These guides are listed on the Help Portal accompanied by a link to the SAP Service Marketplace. Customers with a maintenance agreement have an authorized user ID to access this site. To obtain an ID, contact your customer support representative.

Information Resource	Location
SAP Service Marketplace	*http://service.sap.com/bosap-support* > Documentation • Installation guides: *https://service.sap.com/bosap-instguides* • Release notes: *http://service.sap.com/releasenotes* The SAP Service Marketplace stores certain installation guides, upgrade and migration guides, deployment guides, release notes and Supported Platforms documents. Customers with a maintenance agreement have an authorized user ID to access this site. Contact your customer support representative to obtain an ID. If you are redirected to the SAP Service Marketplace from the SAP Help Portal, use the menu in the navigation pane on the left to locate the category containing the documentation you want to access.
Developer resources	*https://boc.sdn.sap.com/* *https://www.sdn.sap.com/irj/sdn/businessobjects-sdklibrary*
SAP BusinessObjects articles on the SAP Community Network	*https://www.sdn.sap.com/irj/boc/businessobjects-articles* These articles were formerly known as technical papers.
Notes	*https://service.sap.com/notes* These notes were formerly known as Knowledge Base articles.
Forums on the SAP Community Network	*https://www.sdn.sap.com/irj/scn/forums*

Information Resource	Location
Training	*http://www.sap.com/services/education* From traditional classroom learning to targeted e-learning seminars, we can offer a training package to suit your learning needs and preferred learning style.
Online customer support	*http://service.sap.com/bosap-support* The SAP Support Portal contains information about Customer Support programs and services. It also has links to a wide range of technical information and downloads. Customers with a maintenance agreement have an authorized user ID to access this site. To obtain an ID, contact your customer support representative.
Consulting	*http://www.sap.com/services/bysubject/businessobjectsconsulting* Consultants can accompany you from the initial analysis stage to the delivery of your deployment project. Expertise is available in topics such as relational and multidimensional databases, connectivity, database design tools, and customized embedding technology.

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