Configuration Help
SAP BusinessObjects Strategy Management 7.5

Target Audience

- Technical Consultants
- System Administrators

PUBLIC

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Icons in Body Text

Icon	Meaning
	Caution
	Example
	Note
	Recommendation
	Syntax

Additional icons are used in SAP Library documentation to help you identify different types of information at a glance. For more information, see *Help on Help → General Information Classes and Information Classes for Business Information Warehouse* on the first page of any version of *SAP Library*.

Typographic Conventions

Type Style	Description
Example text	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options.
	Cross-references to other documentation.
`Example text`	Emphasized words or phrases in body text, graphic titles, and table titles.
EXAMPLE TEXT	Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.
`Example text`	Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
`Example text`	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
`<Example text>`	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
`EXAMPLE TEXT`	Keys on the keyboard, for example, `F2` or `ENTER`.

Table of Contents

SAP BusinessObjects Strategy Management Configuration

SAP BusinessObjects Strategy Management is a comprehensive performance management software framework and includes software components for strategy and planning; initiative management and prioritization; scorecards; dashboards; and reports and ad hoc analysis.

This guide contains steps to configure the strategy management application. System administrators and technical consultants can use this guide to configure the following components that make up the application:

- **Application Server** stores the quantitative data for the scorecard, dashboard, reports and ad hoc components within Application Server. Application Server is a highly scalable, time-intelligent multidimensional OLAP engine. Application Server typically operates in a multidimensional mode (MOLAP), but can also operate in a relational OLAP mode (ROLAP) or a hybrid OLAP mode (HOLAP) as needed to satisfy the data requirements of the system.

- **Interactive Publisher** is the middle-tier components including authorization, business logic, data access, email, data conversion, request workflow processing. The basic flow of the application is based on a model-view-controller architecture common to most standard Web applications.

- **Software Component Archive (SCA)** contains the database/dictionary for the SAP NetWeaver System database. The SCA is made up of SDAs, one of which contains all the middle tier logic that the applications require. Another SDA, `strategymanagementdic`, contains all the CPMS_ tables and table definitions. The tables have no data in them until you import `bootstrap.zip` or `import.zip`.

Integration

This configuration guide is related to the Installation Guide. Follow the procedures in this guide after you have installed the strategy management components.

For information about how other SAP systems are integrated with the strategy management application, see the *Master Guide for SAP BusinessObjects Strategy Management* located on SAP Service Marketplace.

Constraints

This guide does not explain how to install or deploy the software. For information about installation, see the *Server Installation Guide for SAP BusinessObjects Strategy Management*.

This guide does not explain how to install and configure the integrated components including SAP NetWeaver CE, SAP Enterprise Portal, SAP NetWeaver BI, or SAP Scheduler. For information about these SAP installations, see the appropriate installation guides on SAP Service Marketplace.

If your site will be using SAP BusinessObjects Enterprise as part of the system landscape, this guide does not explain how to install and configure SAP BusinessObjects XI or the SAP BusinessObjects User Management System. For information about these installations and deployments, see the *SAP BusinessObjects Enterprise Installation and Deployment Guide* and the *SAP BusinessObjects Enterprise Administrator's Guide* located on the *Business Objects* section of the SAP Library.

This guide does not explain how to configure the client machines of end-users who use the Administrator and strategy management applications. For information about configuring client

machines to run the Administrator and the strategy management application, see *Startup Requirements* in the SAP BusinessObjects Strategy Management section of the SAP Library.

This guide does not explain how to install or configure Excel Add-In or Diagram Manager. For information about these installations and configurations, see the *Client Installation Guide for SAP BusinessObjects Strategy Management Excel Add-In* and the *Client Installation Guide for SAP BusinessObjects Strategy Management Diagram Manager*, respectively.

This guide does not explain how to download or configure the External Data Loader or Cube Builder. For information, see the *SAP BusinessObjects Strategy Management External Data Loader User's Guide* and the *SAP BusinessObjects Strategy Management Cube Builder User's Guide*.

The strategy management guides are located on SAP Service Marketplace at http://service.sap.com/instguidescpm-stm →*SAP BusinessObjects Strategy Management*.

1 Planning

Use this process to configure your strategy management servers.

Process

1. Certain implementations must set up client access to the SAP NetWeaver CE System database.

   Who should read: Required steps for sites using Entry and Approval and/or Cube Builder. These steps are also required if you want to look at the strategy management tables in the SAP NetWeaver System database. These steps are also required if you are integrating SAP BusinessObjects Risk Management data or SAP BusinessObjects Planning and Consolidation data into the strategy management application.

   For information, see Setting Up Client Access to the SAP NetWeaver CE System Database [Page 11].

2. Configure Application Server.

   Who should read: Required steps for all sites.

   For information, see Application Server Configuration [Page 13].

3. Configure the strategy management application and Interactive Publisher.

   Who should read: Required steps for all sites.

   For information, see Application and Interactive Publisher Configuration [Page 28].

4. (Optional) Customize your Interactive Publisher and Application Server configurations as needed.

   For information, see Custom Configurations [Page 44].

5. (Optional) Set up the SAP BI Connector if you intend to use it.

   For information, see Setting Up the SAP NetWeaver BI Connector [Page 54].

6. (Optional) Set up connections to other systems if you intend to use them.

   For information, see Integration with Other Systems [Page 94].

7. Troubleshoot any startup issues.

   For information, see Application Server Configuration Files [Page 138].

8. Begin your strategy management implementation.

   For information, see Implementing Your Strategy Management System [Page 76].

2 Setting Up Client Access to the SAP NetWeaver CE System Database

If you want to look at the strategy management tables in the system database, you need a tool for client access to the database server. For example, to look at the tables in a MaxDB database, you need MaxDB Database Studio installed on your client with access to the SAP NetWeaver CE server.

If you are using Entry and Approval, Cube Builder, or integrating SAP BusinessObjects Risk Management data or SAP BusinessObjects Planning and Consolidation data into the strategy management application, one of the following is required:

- If using IBM DB2 as the system database to store strategy management application data, the 32-bit client software for DB2 is installed on the Windows server where Application Server is installed. The software must be configured to access the DB2 installation on the SAP NetWeaver CE system. You must copy the files that reside in the following directory and paste them up one level into the `\procs` directory, replacing the MaxDB version of the same files:

  <*install-dir*>`\SAP BusinessObjects\Strategy Management\InternetPub\procs\db2_procs`

- If using MaxDB as the system database, the 32–bit ODBC drivers for MaxDB are installed on the Windows server where Application Server is installed.

  If using MaxDB on a 64–bit system, then you must install the MaxDB Application Runtime Package to obtain the required 32–bit ODBC drivers. The 32-bit ODBC drivers are not included in version 7.7 and higher of the 64-bit MaxDB installs. To obtain the required 32-bit ODBC drivers, download and install the MAXDB Application Runtime Package following the instructions in SAP Note 1575053.

  Note: If you are running MaxDB on a 64–bit system, you might get an error message when you run the 32-bit ODBC Administrator to configure the ODBC connection. You can ignore the message because the ODBC DSN is created correctly anyway. The error is likely caused by a missing CTRL3D32.DLL file that is not installed by default on the system. Not all 64–bit systems have this error because there are a lot of software packages that install that file.

- If using SQL Server as the system database, the 32–bit ODBC drivers for SQL Server are installed on the Windows server where Application server is installed. You must copy the files that reside in the following directory and paste them up one level into the `\procs` directory, replacing the MaxDB version of the same files:

  <*install-dir*>`\SAP BusinessObjects\Strategy Management\InternetPub\procs\sqlsrvr_procs`

- If using an Oracle system database, the 32–bit client software for Oracle is installed on the Windows server where Application server is installed. A Local Net Service is defined for the server on which the Oracle SAP NetWeaver CE System database is installed. You must copy the files that reside in the following directory and paste them up one level into the \procs directory, replacing the MaxDB version of the same files:

  <*install-dir*>`\SAP BusinessObjects\Strategy Management\InternetPub\procs\oracle_procs`

For information about configuring and using Cube Builder, see the *Cube Builder User's Guide* on SAP Service Marketplace at http://service.sap.com/instguidescpm-stm →*SAP BusinessObjects Strategy Management* ↵. For information about configuring to use Entry and Approval, see Setting Up Entry and Approval [Page 38].

For information about configuring the system to integrate SAP BusinessObjects Planning and Consolidation data into strategy management, see Configuring the Application to Access Planning and Consolidation Data [Page 100].

For information about configuring the system to integrate SAP BusinessObjects Risk Management data into the strategy management application, see Configuring the Application to Access SAP BusinessObjects Risk Management Data [Page 95].

3 Application Server Configuration

This section details how to configure your Application Server.

Prerequisites

If you have a Linux/UNIX server configuration, you have already installed Application Server on a Windows client.

If you have a Windows server configuration, you may have installed Application Server on a Windows client. However, this is not necessary.

3.1 Link ID Creation

If you intend to do any of the following, you need to create a Link ID to define a connection between Application Server and a database system:

- Reading data from an RDBMS into an Application Server dimensional model. If you intend to read data into Application Server from text files, you can skip this section.
- Using Entry and Approval, Cube Builder, and/or the GRC Interface. For information about creating a Link ID to use for these systems, see Creating a Link ID for Certain Implementations [Page 21].
- Using SAP NetWeaver BI Connector. For information about creating a Link ID to use for SAP NetWeaver BI Connector, see Creating a Link ID for SAP NetWeaver BI Connector [Page 55].

Link IDs provide access to databases in a Microsoft Windows environment through Open Database Connectivity (ODBC). ODBC drivers are available from Microsoft and various third-party vendors. Consult these vendors for purchase, system requirements, installation, and configuration information.

Prerequisites

To use ODBC drivers with the Link Configurator tool, install your ODBC drivers before defining Link IDs. For Microsoft Windows, using the ODBC Administrator or tools provided by your ODBC driver vendor, configure data sources for any ODBC drivers you installed.

You create Link IDs in the Application Server Administrator program, which runs on Microsoft Windows. If Application Server is installed and running on a Microsoft Windows server, create a Link ID by following the steps in the procedure *Creating a Link ID when Application Server is installed on a Microsoft Windows server*. If Application Server is installed and running on a Linux/UNIX server, create a Link ID by following the steps in the procedure *Creating a Link ID when Application Server is installed on a Linux/UNIX server*.

If you have an Application Server implementation on Linux/UNIX, you must install an additional copy of Application Server on a Microsoft Windows machine to create the link ID.

3.1.1 Creating a Link ID when Application Server is Installed on a Windows Server

Procedure

The information in this section is intended for an initial setup. To learn more fully about system administration, see the *Administrator's Guide for SAP BusinessObjects Strategy Management Application Server*.

1. Start the Application Server program on the Microsoft Windows server.
2. Choose *File* →*New* →*Link ID* to display the *Create Link ID* dialog box.
3. Select the appropriate database type and click *OK*.
4. Type a name for the link ID and click *Test*. If you are prompted for more information, specify the necessary information.

Click *OK* when you are finished. If the client software needed to connect to your database is installed on your Microsoft Windows system, you should see the message `Connection successful`. If the client connectivity software for the database is not installed, you can create and save the Link ID without testing it.

3.1.2 Starting Application Server on a Microsoft Windows Client

Prerequisites

Application Server is installed on a Linux/UNIX server or Microsoft Windows server, and on a Microsoft Windows client machine.

You have completed all the tasks to configure Application Server on the server system.

Procedure

1. Open the `Lsserver.ini` file in a text editor. It is located in the Microsoft Windows directory.
2. Change the `[<localhost>]` to the name or the IP of the system you are connecting to.
3. For the `username=` entry, type:

   ```
   admin
   ```

4. Leave the `EncryptedPassword=` entry empty or type a question mark (?). You will be prompted for the password when you try to connect. The contents of the file should look as follows:

   ```
   [<localhost>]

   tcp_protocol=winsock

   username=admin

   EncryptedPassword=?

   PROTOCOL=TCP
   ```

```
SERVICE=PILOT

CURSOR=LSSCMPTR
```

5. Verify that the Application Server Administrator software has been correctly installed on the Microsoft Windows client machine. .On your Microsoft Windows Desktop, choose *Start* →*Program* →*SAP BusinessObjects* →*Strategy Management* →*Application Server Administrator*. A *Login* dialog box appears.

6. In the User name text box, type `admin`, which is created at installation.

7. Do not enter any values in the *Password* box.

8. The *Server* box should be filled in with the name you specified for `[<localhost>]`. Click *OK*.

   Later, you can create a remote server connection that stores your password in encrypted format in `lsserver.ini` rather than be prompted to type your password every time. To learn about this, see the online Help in the Application Server Administrator program.

3.1.3 Creating a Link ID for Linux/UNIX

Because there is no facility for creating link IDs on Linux/UNIX, you must use Application Server on the Microsoft Windows client machine to create the required entries in `lsdal.ini` and move that file to Linux/UNIX.

Prerequisites

You have installed Application Server on a Microsoft Windows client machine.

You have already set environment variables for Oracle or DB2.

For information, see the *Server Installation Guide for SAP BusinessObjects Strategy Management* on SAP Service Marketplace at http://service.sap.com/instguidescpm-stm →*SAP BusinessObjects Strategy Management*.

Procedure

1. On the Microsoft Windows client machine where you installed Application Server, start the Application Server program.

   For information, see Starting Application Server on a Microsoft Windows Client [Page 14].

2. Choose *File* →*New* →*Link ID*. The *Create New Link ID* dialog box appears.

3. Select the appropriate database type and click *OK*.

4. Type a name for the Link ID and click *Test*. If you are prompted for more information, specify the necessary information.

5. Click *OK* when you are finished. If the client software necessary to connect to your database is installed on your Microsoft Windows system, you should see the message `Connection successful`. If the client connectivity software for the database is not installed, you can create and save the Link ID without testing it.

6. Transfer the `lsdal.ini` file from the Microsoft Windows client directory to the UNIX server directory where you installed Application Server. Ensure the file name `lsdal.ini` is in lower case on the Linux/UNIX system.

   If you are creating an Oracle link ID and the Oracle database resides on the same Linux/UNIX system as Application Server, you can leave the `Server` parameter blank. You only need to supply a `Server` parameter if Oracle does not reside on the same system as Application Server. The `Library:` parameter is not used for Linux/UNIX. You do not need to change this value. See the online Help for additional information.

3.1.4 Setting Environment Variables

This section explains how to set environment variables in various environments.

You set environment variables in the following Application Server shell scripts:

- `lsstcp.sh` — the SAP SM Listener Daemon (lsstld) runs `lsstcp.sh` to launch Application Server on Linux/UNIX in a client/server configuration.
- One of the following:
  - `runlss.ksh` — The administrator of Application Server runs this script to launch Application Server on Linux/UNIX natively and issue Application Server commands from a telnet window.

    You maintain this script if running in a korn shell. It is good practice to maintain this script exactly the way you maintain `lsstcp.sh`.
  - `runlss.csh` — The administrator of Application Server runs this script to launch Application Server on Linux/UNIX natively and issue Application Server commands from a telnet window.

    You maintain this script if running in a C shell. It is good practice to maintain this script exactly the way you maintain `lsstcp.sh`.

3.1.4.1 Adding Environment Variables to Application Server Scripts-DB2

Follow the instructions below to set up the DB2 environment in the `lsstcp.sh` Application Server script and either `runlss.csh` or `runlss.ksh`.

Procedure

1. Open the `lsstcp.sh` script.
2. Find the lines:

   ```
   LSLINKINI=$LSSHOME/

   export LSLINKINI
   ```

3. After the line above, add the following line, where `INSTHOME` is the home directory of the DB2 instance:

   ```
   . INSTHOME/sqllib/db2profile
   ```

4. Do one of the following depending on whether you are running Application Server natively in a korn shell or C shell:

   - If you are maintaining `runlss.ksh` to run Application Server natively in a korn shell, open the `runlss.ksh` script.

     Find the lines:

     ```
     LSLINKINI=$LSSHOME/
     ```

     ```
     export LSLINKINI
     ```

     After the line above, add the following line, where `INSTHOME` is the home directory of the DB2 instance:

     ```
     . INSTHOME/sqllib/db2profile
     ```

   - If you are maintaining `runlss.csh` to run Application Server natively in a C shell, open the `runlss.csh` script.

     Find the line:

     ```
     setenv LSLINKINI $LSSHOME/
     ```

     After the line above, add the following line, where `INSTHOME` is the home directory of the DB2 instance:

     ```
     source INSTHOME/sqllib/db2cshrc
     ```

3.1.4.2 Adding Environment Variables to Application Server Scripts-Oracle

Application Server identifies all Oracle libraries installed on the machine without any source code incompatibilities. If Application Server is on a machine with Oracle 10g, (and the required environment variables are set correctly), Application Server uses the right Oracle library.

Complete the following steps to include the `ORACLE_HOME` and `ORACLE_SID` variables in the Application Server scripts `runlss.csh` or `runlss.ksh`, and `lsstcp.sh`. You must do this before you use Link to create Link IDs. These environment variables are required by Oracle.

The environment variable `ORACLE_SID` is required only if you are connecting locally, without the Server parameter specified.

Procedure

1. Open the `lsstcp.sh` script.

2. Find the lines:

   ```
   LSLINKINI=$LSSHOME/
   ```

   ```
   export LSLINKINI
   ```

3. After the line above, add the following lines, where `/usr/oracle` is the location of your `ORACLE_HOME` and `ORCL` is your `ORACLE_SID`:

   ```
   ORACLE_HOME=/usr/oracle

   ORACLE_SID=ORCL

   export ORACLE_HOME ORACLE_SID
   ```

4. In addition, you must include the path to the Oracle shared libraries. See the next few sections to carry out the steps related to your platform and Oracle version.

5. If you are running in a Linux/UNIX Korn shell environment, make the appropriate changes to the `runlss.ksh` script. If you are running in a Linux/UNIX C shell environment, make the appropriate changes to `runlss.csh` script.

3.1.4.3 Environment Variables for Oracle Shared Libraries

Application Server dynamically links to the Oracle client shared libraries installed on your system. To do this, the shared library path environment variable must include the Oracle lib directory. If it is not already part of the path, then the Application Server startup scripts need to add it.

On 64-bit machines Oracle supplies two different lib directories:

- `$ORACLE_HOME/lib`, which is 64-bit
- `$ORACLE_HOME/lib32`, which is 32-bit

The strategy management application requires the library files in the 32-bit directory $ORACLE_HOME/lib32 on Linux.

The strategy management application requires the library files in the 64-bit directory `$ORACLE_HOME/lib` on AIX, Solaris and HPUX.

If you are running Application Server on a Linux/UNIX server, the Application Server user must have appropriate access to the `$ORACLE_HOME` directories. It is highly recommended to grant read and execute access to the directory structure under `$ORACLE_HOME` to ensure that there are no problems with Application Server connections to Oracle. You can run the `$ORACLE_HOME/install/changePerm.sh` script to ensure that the account used for client/server connections has the appropriate access privileges to the Oracle client software. This script establishes Read access to most of the directories in `$ORACLE_HOME`.

Verifying that the Oracle Shared Library was Created During the Oracle Installation

If running AIX, Solaris, or HPUX, the required 64–bit Oracle shared library is found in `$ORACLE_HOME/lib`. If running Linux, the required 32–bit Oracle shared library is found in `$ORACLE_HOME/lib32`.

The Oracle shared library is created at Oracle install time. In some cases, the shared library may not have been installed.

Procedure

1. Check to see if `$ORACLE_HOME/lib` or `$ORACLE_HOME/lib32` (depending on whether you are running AIX/Solaris/HPUX or Linux respectively) contains `libclntsh.`*<ext>*, where *<ext>* is one of the following:
   - `.so` (on Linux)
   - `.so` (on Solaris)
   - `.sl` (on HP_UX)
   - `.a` (on AIX)
2. If it does not contain one of the above, then run the `$ORACLE_HOME/genclntsh` shell script first to create the `libclntsh.ext` library. Also, Oracle recommends running `genclntsh` after operating system upgrades.

Setting the Environment Variables for Oracle Shared Libraries

Instructions for setting the environment variables on the various Linux/UNIX platforms are as follows.

Prerequisites

`$ORACLE_HOME` is already set up.

Procedure

Procedure

Setting environment variables for Linux

1. Add the following information to the `lsstcp.sh` and `runlss.ksh` script.

   ```
   LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$ORACLE_HOME/lib32
   ```

   ```
   export LD_LIBRARY_PATH
   ```

2. If running a C-shell environment, add the following information to the `runlss.csh` script.

   ```
   setenv LD_LIBRARY_PATH $LD_LIBRARY_PATH:$ORACLE_HOME/lib32
   ```

Setting environment variables for Solaris

1. Add the following information to the `lsstcp.sh` and `runlss.ksh` script.

   ```
   LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$ORACLE_HOME/lib
   ```

   ```
   export LD_LIBRARY_PATH
   ```

2. If running a C-shell environment, add the following information to the `runlss.csh` script.

   ```
   setenv LD_LIBRARY_PATH $LD_LIBRARY_PATH:$ORACLE_HOME/lib
   ```

Setting environment variables for HP-UX (PA RISC)

1. Add the following information to the `lsstcp.sh` and `runlss.ksh` script.

   ```
   SHLIB_PATH=$SHLIB_PATH:$ORACLE_HOME/lib
   ```

   ```
   export SHLIB_PATH
   ```

2. If running a C-shell environment, add the following information to the `runlss.csh` script.

   ```
   setenv SHLIB_PATH $SHLIB_PATH:$ORACLE_HOME/lib
   ```

Setting environment variables for HP-UX Iitanium)

1. Add the following information to the `lsstcp.sh` and `runlss.ksh` script.

   ```
   LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$ORACLE_HOME/lib
   ```

   ```
   export LD_LIBRARY_PATH
   ```

2. If running a C-shell environment, add the following information to the `runlss.csh` script.

   ```
   setenv LD_LIBRARY_PATH $LD_LIBRARY_PATH:$ORACLE_HOME/lib
   ```

Setting environment variables for AIX

1. Add the following information to the `lsstcp.sh` and `runlss.ksh` script.

   ```
   LIBPATH=$LIBPATH:$ORACLE_HOME/lib
   ```

   ```
   export LIBPATH
   ```

2. If running a C-shell environment, add the following information to the `runlss.csh` script.

   ```
   setenv LIBPATH $LIBPATH:$ORACLE_HOME/lib
   ```

   The Oracle client shared library is in the archive `libclntsh.a` file on AIX. The name of the shared object is not the same name across all Oracle versions. In order for Application Server to use a consistent name, you must extract the archive `libclntsh.a` in the `$ORACLE_HOME/lib` directory and rename it to `libclntsh.so`.

3. Change directories by using a `cd` to the `$ORACLE_HOME/lib` directory.

4. Determine the name of the object by issuing the command:

   ```
   ar -t libclntsh.a
   ```

5. Extract the archive with the command:

   ```
   ar -x libclntsh.a
   ```

6. Rename the object with the following command where <*objname*> is the file name returned in step 2.

   ```
   mv <objname> libclntsh.so
   ```

3.1.5 Creating a Link ID for Certain Implementations

In Application Server Administrator, you must create a special Link ID if you will be using Entry and Approval, Cube Builder, or you will be integration SAP BusinessObjects Risk Management data or SAP BusinessObjects Planning and Consolidation data in the application. You use the same Link ID for any of these connections.

Prerequisites

You have Application Server installed in one of these configurations:

- Application Server is installed on a Windows server
- Application Server is installed on a Linux/UNIX server with a client copy of Application Server installed on a Windows machine.

The software required for client access to the SAP NetWeaver CE System database is installed and configured on the server where Application Server is installed. For information, see Setting Up Client Access to the SAP NetWeaver System database [Page 11].

In the steps below, when the term **Microsoft Windows machine** is used, it means either Microsoft Windows server or Microsoft Windows client, depending on your implementation noted above.

Procedure

1. If your SAP NetWeaver CE System database is either MaxDB or SQL Server, you must create an ODBC System DSN to connect to be used in your Link ID.

   An ODBC connection is not required for Oracle or IBM DB2 because Application Server has internal connections to these databases through Oracle (OCI) and DB2 (CLI). If you are using Oracle or IBM DB2, you can skip this step.

   If Application Server is installed on a 64-bit Microsoft Windows server, you must create the System DSN with the 32-bit version of the ODBC Administrator located in the `\Windows\SysWoW64` folder. Details on this are available in the Microsoft Knowledge Base article 942976.

   1. On the Microsoft Windows machine where Application Server is installed, run the ODBC Administrator.
   2. Click the *System DSN* tab and click *Add* to create a connection to your MaxDB or SQL Server database.
      - For MaxDB, use the *MaxDB (Unicode)* driver. On some systems this may be listed as *SQLSTUDIOODBC*.

        - For SQL Server, the SQL Server authentication method must be specified in the DSN. Also, the specified user needs to match the schema/owner of the `CPMS_` tables you want to access in the SAP NetWeaver CE System database.

2. Start the Application Server Administrator program on the Microsoft Windows machine.

3. Choose *File* → *New* → *Link ID* to display the *Create Link ID* dialog box.

4. Do one of the following:

    - If you are using the ODBC drivers for MaxDB or SQL Server, select the ODBC System Data Source Name you created in step 1 as your database type and click *OK*.

    - If you are using the Oracle OCI connection, select *Oracle (OCI*) as the database type.

    - If you are connecting to DB2, use the *DB2 (CLI)* entry to create your Link ID.

5. In the *Link ID Properties* dialog box, type the name `ssm_cb_ea`.

    If you are using the Oracle (OCI) or DB2 (CLI) connections, specify the additional information needed to connect to the database server. The username and password must be the owner of the `CPMS_` tables.

6. Click *Test*.

    If you are using an ODBC connection you are prompted for more information. Specify the username and password for the owner of the `CPMS_` tables.

7. Click *OK* when you are finished.

    If the client software needed to connect to your database is installed properly on your Microsoft Windows system, you should see the message `Connection successful`.

    If the connection is unsuccessful, verify the values entered for the connection and define the Link ID again.

    If the client connectivity software for the database is not installed, you can create and save the Link ID without testing it.

8. If you intend to run Application Server on Linux/UNIX, transfer the *lsdal.ini* file from the Microsoft Windows client directory to the UNIX server directory where you installed Application Server. Ensure the file name *lsdal.ini* is in lower case on the Linux/UNIX system.

For information about creating a Link ID, see *Application Server Help* → *Application Server* → *Working with Link IDs* in the online Help in the Application Server Administrator.

3.2 Configuring the System for Other Languages

This section discusses issues regarding configuring Application Server for languages other than English.

3.2.1 Applying Regional Settings for the Thousands and Decimal Separators

When Application Server is installed on a Windows server, it detects the language setting on the Windows server and uses the Regional Settings from the Windows Control Panel on the server to define the language, character set, decimal separator, thousands separators, and number of decimal places.

When Application Server is installed on a UNIX/Linux server, it uses the system locale settings set with the `LANG` and/or `LC_` environment variables on the UNIX/Linux server to define the decimal separator, thousands separator, and number of decimal places. When you use the Application Server Administrator on a Windows client to connect client/server to PAS running on UNIX/Linux then it will pick up character sets from the Windows client environment.

This section describes how to ensure that Application Server is correctly configured for your region. When issuing commands, make sure you repeat these commands for every dimensional model.

Procedure

To configure all existing measures in the dimensional model to use the regional settings, issue the following commands:

```
USE <model name> EXCLUSIVE

SET VARIABLE * COMMA LOCALE

SET VARIABLE * POINT LOCALE

SET VARIABLE * DECIMALS LOCALE
```

The `COMMA LOCALE` keyword uses the thousand separator specified by the regional settings. The `POINT LOCALE` keyword uses the decimal point specified by the regional settings. The `DECIMALS LOCALE` keyword uses the number of decimal places specified by the regional settings.

To configure particular existing measures in the dimensional model to use the regional settings, issue the following commands:

```
SET VARIABLE <variable> COMMA LOCALE

SET VARIABLE <variable> POINT LOCALE

SET VARIABLE <variable> DECIMALS LOCALE
```

To specify that all new measures will be created using standard defaults, issue the following commands:

```
USE <model name> EXCLUSIVE
```

```
SET DEFAULT COMMA LOCALE

SET DEFAULT POINT LOCALE

SET DEFAULT DECIMALS LOCALE
```

The `SET DEFAULT` command does not affect any existing measures that have been changed by a `SET VARIABLE` command. This command does affect existing measures that were not previously included in a `SET VARIABLE` command.

To verify that your regional settings and character set are correct, issue the following command:

```
EXHIBIT CHARSET
```

For information about these commands, see the Application Server Help located on SAP Service Marketplace at http://service.sap.com/instguidescpm-stm →*SAP BusinessObjects Strategy Management*.

3.2.2 Setting the Date and Currency Formats

The Regional Settings in the Windows Control Panel have no effect on Application Server date formatting or currency formatting. You must use Application Server commands to set the appropriate formats for the region.

Prerequisites

You have not created the dimensional model yet.

Procedure

1. To set the format for dates in Application Server, issue the command, where <*format*> is a combination of the values `DMY` (day, month, year):

   `SET DATE` <*format*>

   The default format is `YMD`.

2. To set the currency symbol for all measures, issue the following command, where <*format*> is a string up to four characters:

   `SET DEFAULT CURRENCY '`<*format*>`'`

   To set the currency symbol for a specific measure, issue the command, where <*variable*> is the name of the variable:

   `SET VARIABLE` <*variable*> `CURRENCY '`<*format*>`'`

For information, see the Application Server Help located on *SAP Service Marketplace* →*SAP BusinessObjects Strategy Management*.

3.2.3 Installing East Asian Fonts

If you are running the strategy management application in an East Asian language but not necessarily an East Asian operating system, make sure the Asian fonts are installed on all server machines running strategy management components and the client machine.

Procedure

To install East Asian fonts, go to *Control Panel* →*Regional and Language Options* →*Languages* . Click *Install files for East Asian languages*.

3.2.4 Setting Month Name Abbreviations to Non-English Text

If you are running the strategy management application in a non-English language, the application displays month name abbreviations in English when displaying charts, dashboard panels, and some report headings. The month name abbreviations are read from the Application Server message database.

You must follow the steps in this section to set the month name abbreviations to the appropriate language.

Procedure

1. Confirm that no one is connected to Application Server.
2. Do one of the following, depending on your platform:
   - On Microsoft Windows, stop the *SAP SM Extended Listener* and the *SAP SM Listener*. Display the *Task Manager* and make sure there are no `lsstcp.exe` processes.
   - On Unix/Linux, run the `tldstop` script to stop the listener daemon. Issue the following command and make sure there are no active connections:

     ```
     ps -eaf grep lsstcp
     ```
3. Start an Application Server session, and log on as admin or another user with supervisor privileges.
4. Run one of the procedures put down by the downloaded files. Enter the command:

   ```
   job 'setup_cal_<xx>.pro'
   ```

   <*xx*> is the 2-letter designation for the desired language. For example, enter `de` for German or `es` for Spanish.

   Case is significant on Unix/Linux so the procedure names must be entered in lower case.
5. Do one of the following, depending on your platform:
   - On Microsoft Windows, restart the *SAP SM Extended Listener* and the *SAP SM Listener*.
   - On Unix/Linux, run the `tldgo` script to restart the SAP SM Listener.

3.2.5 How to Support More than one Language

Procedure

1. Complete the steps in the section Setting Month Name Abbreviations to Non-English Text [Page 25]. For example, to set the month names to Spanish, issue the command:

   ```
   job 'setup_cal_es.pro'
   ```

2. Copy `TBDB.eng` to `TBDB.<xx>` for the language you want to use, where `<xx>` is the two-letter abbreviation for the language. `TBDB.eng` is located in the `<installation dir>\SAP BusinessObjects\Strategy Management\ApplicationServer\data` directory.

3. Make a copy of `lsserver.ini` for the additional language. For example, for the Spanish language copy `lsserver.ini` to `lsserver-es.ini`.

4. In the new .INI file, modify the `TBDB=` filename reference from `TBDB.eng` to the new version.

5. Repeat steps 1 through 4 for each language that you want to support in your environment.

6. When you have created one TBDB file for each language you wish to support, reset the month names in the English TBDB by issuing the command:

   ```
   job 'setup_cal_en.pro'
   ```

7. Create a unique Application Server user for each language that you want to support. For example, to create a user for the clients who need to display month names in Spanish, create the user GUESTES by issuing the command:

   ```
   supervisor create user guestes work wkguestes use juice usage read
   ```

8. Start the Administrator and click *Administration* → *Manage Models*.

9. Select a model connection and create an Application Server connection for each new language.

   - For the *PAS User* field, specify the name of the user created in step 7.
   - Change the *INI File* field for the Application Server connection to refer to the appropriate `lsserver-<xx>.ini` file created in step 3.
   - In the *Groups and users* section of the screen, select *Users*. Add the names of the users who need to connect to the system with that language.

   If you had an original Application Server Connection with a *Groups and users* setting of *Everyone* and the INI file setting of `lsserver.ini`, update this entry to *Users* and include the names of the users who need to view the dates in English.

10. Repeat step 9 for all model connections.

3.3 Ongoing Application Server Tasks for Strategy Management

The following topics need to be considered when periodically loading new data into your dimensional model or making dimension or measures changes in a model:

- Updating the latest date for which there is data in the dimensional model by updating the LASTDATE document.
- Maintaining correct user status after a dimensional model update or Security procedure update by clearing Work database files and the Internet Publisher cache.
- Effects of dimensional model changes on existing reports.

For information, refer to the *Administrator's Guide for SAP BusinessObjects Strategy Management Application Server* located in the Server Marketplace.

4 Application and Interactive Publisher Configuration

This section describes how to configure the application and Interactive Publisher.

Prerequisites

You have installed all strategy management components and performed the initial configuration steps outlined in the *Server Installation Guide for SAP BusinessObjects Strategy Management* located on SAP Service Marketplace at http://service.sap.com/instguidescpm-stm →*SAP BusinessObjects Strategy Management*.

The strategy management administrator is added as a user in either SAP NetWeaver UME or to the SAP BusinessObjects Enterprise, depending on which system you are using for user management.

You have configured Application Server. For information, see Application Server Configuration [Page 13].

Process

1. Set Java System Properties related to the strategy management application in SAP NetWeaver Administrator.

   Who should read: Required steps for all installations.

   For information, see Strategy Management Properties Configuration [Page 29].

2. Add strategy management users to either the SAP NetWeaver UME or to SAP BusinessObjects Enterprise.

   Who should read: Required steps for all installations.

   For information, see Adding Strategy Management Users [Page 33].

3. Start the Administrator.

   Who should read: Required steps for all installations.

   For information, see Starting the Administrator [Page 35].

4. Refresh the authorization cache in the Administrator.

   Who should read: Required steps for all installations.

   For information, see Refreshing the Authorization Cache [Page 35].

5. Set up a model connection in the Administrator.

   Who should read: Required steps for all installations.

   For information, see Setting Up a Model Connection [Page 35].

6. Set up a model connection for Entry and Approval.

   Who should read: Required steps for sites using Entry and Approval.

   For information, see Setting Up Entry and Approval [Page 38].

7. Set the thousands and decimal separator for Trend and Forecast.

   Who should read: Required steps for sites using Trend and Forecast in the Reports component in the strategy management application.

   For information, see Setting the Thousands and Decimal Separator for Trend and Forecast [Page 41].

8. Test your connection.

   Who should read: Required step for all installations.

   For information, see Testing Your Connections [Page 42].

4.1 Strategy Management Properties Configuration

You configure certain properties in SAP NetWeaver to specify how you want the strategy management application to run.

Prerequisites

You are the administrator of SAP NetWeaver.

Features

You must set the following Java System Properties in SAP NetWeaver:

Java System Property	Description	Value
`Graphic.Source`	Sets the charting package used for charting in the application.	The default is `CVOM` and charts are displayed using the CVOM system that is installed with the strategy management application. Optionally, you can set the value to `IGS` to use the charting package installed by SAP NetWeaver CE.
`Igs.port`	Sets the instance number of the SAP NetWeaver CE installation.	If using IGS graphics, set a value for the instance number. The default value is `40080`. The digits 00 represent the instance number of the SAP NetWeaver CE installation. If your instance number is not 00, click *Modify* and enter a value `4`<*nn*>`80` where <*nn*> is the instance number. If using CVOM graphics, this value is ignored.
`PWDatabase`	Strategy management application definitions are stored in tables in the SAP NetWeaver CE System Database. You must specify the name of the table in the SAP NetWeaver CE System Database where you want	It is recommended to specify the name `pw` to store your definitions. If you want to use the sample scorecard information, specify a value of `pwsample`

Java System Property	Description	Value
	to store the scorecard information for your implementation.	
`HomeTabExt FileTypes`	Specifies the file types the strategy management administrator can include as external content in the *Configure Home Page* section of the Administrator. If the strategy management administrator attempts to upload a file whose file type is not one of these values, an information message will appear.	By default, `HomeTabExtFileTypes` is set to include a list of file types that can always be displayed correctly in Internet Explorer. The default values are SWF, PNG, GIF, JPG, and PDF file types. You can remove any file type to make it unavailable for upload by the strategy management administrator. Adding other file types may produce unpredictable results. Internet Explorer handles the display of Microsoft Office DOC and XLS files based on each user's Windows settings. The only way to ensure proper behavior when a user attempts to display external content from a Microsoft Office file is for the user to edit that particular file type and specify that only the *Browse in the same window* option is selected for the *Open* action.
`AuditLogComment s`	Controls whether the strategy management administrator can enter a comment when adding, modifying, or renaming entries in these Administrator screens: • *Manage Application Groups* • *Manage Models* • *Set System Defaults* • *Set Application Defaults* • *Update User Responsibilities* • *Delete Obsolete Items* When running the Auditor at http://*<nwce_server>*:*<port>*	When set to *Yes*, this property prompts the strategy management administrator to enter a comment when adding, modifying, or renaming entries in the Administrator screens. If this property is set to *No*, the strategy management administrator is not prompted to add comments and no comments appear in the log. The default setting is *Yes*.

Java System Property	Description	Value
	/strategy/tools, comments appear next to the activity. For information about the *Auditor*, see the *Administrator's Guide for SAP BusinessObjects Strategy Management Interactive Publisher and Application Components* on SAP Service Marketplace at http://service.sap.com/instguidescpm-stm →*SAP BusinessObjects Strategy Management*.	
`ClearUMECacheOnSync`	When using SAP NetWeaver UME to manage strategy management users, `ClearUMECacheOnSync` determines whether or not the UME cache is cleared when the *Synchronize User Tables* link is selected in the *Set System Defaults* section of the Administrator or when the *Synchronize User Tables* task runs from the Scheduler. The UME Cache contains information about users and system groups. When using the SAP BusinessObjects Enterprise to manage strategy management users, this setting is ignored.	By default, `ClearUMECacheOnSync` is set to `NO` and the UME cache is cleared automatically every hour but is not cleared during *Synchronize User Tables* functions. To force a UME Cache refresh every time the *Synchronize User Tables* runs, then set the value of `ClearUMECacheOnSync` to `YES`. Depending on where users and system groups are stored, and how many are defined as strategy management users, a `YES` setting could take several minutes more to perform this task than a `NO` setting.
`EAValueAuditFlag`	Displays a *Details* button in the Approval Log to enable detailed logging in the Entry and Approval Log. When users click the *Details* button and display the Approval Log, they see the full audit trail of the selected metric set. The log captures detailed user interactions, including time stamps for approval, rejection and uploading of metrics. They see a detailed log	To enable detailed logging and display a *Details* button in the Approval Log, set this value to *YES*.

Java System Property	Description	Value
	about every data value entered in the Entry and Approval Data Entry screen or Excel spreadsheet for the current time period. For example, if a data value is rejected by the approver, the previous value is also captured.	
`Pip.Type`	Specifies whether you want to use the C++ (CPIP) version of Interactive Publisher or the Java (JPIP) version.	To use the Java version of Interactive Publisher, set this value to *JPIP*. To use the C++ version of Interactive Publisher, set this value to *CPIP*. The default value is *JPIP*.
`EnableLong Measures Selector`	Displays the *Dimensional Selector* dialog box in a horizontal format. The *Dimensional Selector* dialog box displays fields differently to enable better viewing of long measure names when the value is *YES*.	To display the *Dimensional Selector* dialog box in a horizontal format, set this value to *YES*. If you do not have long measure names, you can keep the default value of *NO*.
`Pd4ml.fontdir`	Specifies the path location of fonts to use when the application generates a PDF file. PDF file generation occurs when creating operational reviews, printing reports, and e-mailing reports.	By default, the value is *file:c:/Windows/Fonts*, which is the default location for fonts on a Microsoft Windows server. If you installed your fonts to a non-default location, or if you are running a different type of Windows server, you must change this value to the appropriate location of the fonts on that server.

`mail.smtp.host`	First of three parameters used to implement email alerts
	
	Email alerts are email messages that are sent to users at certain times to inform them about changes that have occurred in initiatives, milestones, submilestones, objectives, KPIs, and metric sets.
	
	Once you set up mail connectivity with `mail.smtp.host`, `mail.from`, and
		Specify a mail server that can relay mail internally. Use your company's name in place of <*mycompany*>. Here are some sample values, where <*mycompany*> is the name of your company:
		
		`smtp.`<*mycompany*>`.com`
		
		`internet.`<*mycompany*>`.com`
		
		`mail.`<*mycompany*>`.com`
		
		If you have problems with email alerts, make sure the mail server allows relaying. If you have

Java System Property	Description	Value
	`mail.domain`, end users can control whether they want to receive email alerts in the *Subscribe* dialog box of the *My Alerts* section in the Home component.	blocked mail relaying for security reasons, you must allow it at least on the SAP NetWeaver CE server where strategy management application components are deployed.
`mail.from`	Second of three parameters used to implement email alerts	Specify an email alias. For example, `sm@<`*mycompany*`>.com`. If you did not set up an `sm@<`*mycompany*`>.com` email alias, then modify the property to specify the email address of the user who will be sending notifications. (Optional) Work with your IT department to set up an email alias for the strategy management application called `sm@<`*mycompany*`>.com`, or whatever name is appropriate.
`mail.domain`	Third of three parameters used to implement email alerts	Specify your company's name. Use the following format for the value: `<`*mycompany*`>.com`

Activities

1. Start the SAP NetWeaver Administrator.
2. Log on as administrator with the global password you provided when you installed NetWeaver CE.
3. Click *Configuration Management*.
4. Click the *Infrastructure* tab.
5. Select *Java System Properties*.
6. In the *Templates* section, select the *CE_Java_EE_production_full* entry (or whatever your NetWeaver server template is called). Make sure you select the template and not the instance development or ID.
7. Click the *Applications* tab.
8. In the *Name* column, type strategy and press `Enter` to list the strategy applications.
9. Select the name *xapps~cpm~sm~strategymanagement*.
10. In the *Extended Details* section, click inside the *Name* text box and type the property you want to modify.

4.2 Adding Strategy Management Users

You must add the strategy management users to one of the following user management systems:

- UME in SAP NetWeaver Administrator
- SAP BusinessObjects Enterprise (either SAP BusinessObjects XI or SAP BusinessObjects User Management System)

Prerequisites

SAP BusinessObjects Enterprise is installed and configured if you will be adding standard users and system groups and LDAP users and LDAP system groups from that system.

SAP NetWeaver Administrator is installed and configured.

You are the administrator of SAP NetWeaver Administrator and SAP BusinessObjects Enterprise, if applicable.

You have configured certain Java System Properties such as `StrategyGroup`, `DirectoryServiceType`, `AuthType`, `CMSAuth`, `CMSSERVER`, `CMSTechnicalUser`, and `CMSTechnicalUserPW` to use either UME or SAP BusinessObjects Enterprise. For information, see the *Configuring the Application and Setting Up the User Management System* section in the *Server Installation Guide for SAP BusinessObjects Strategy Management* located on SAP Service Marketplace at http://service.sap.com/instguidescpm-stm →*SAP BusinessObjects Strategy Management* ↵.

You have set up a strategy group in the user management system if you want to add specific users and system groups to the strategy management application rather than add all users and system groups.

For information, see the *Creating a Strategy Group for Users and System Groups* section in the .*Server Installation Guide for SAP BusinessObjects Strategy Management*.

Features

You do the following to make users known to the strategy management application:

- Add all the standard users and system groups and LDAP users and LDAP system groups to either SAP NetWeaver UME or SAP BusinessObjects Enterprise.

  For information about adding users to the user management system, see the SAP NetWeaver Administrator documentation or the *SAP BusinessObjects Enterprise Administrator's Guide* on the SAP Library.

  When you add users to SAP BusinessObjects Enterprise, you must enter the user's full name as `lastname, firstname` or it will not display properly in application groups in the Administrator or in the strategy management application.

- If you set up a `strategy` group in the user management system, you must add all the users and system groups who will be accessing the strategy management application. Make sure the value of the `StrategyGroup` Java System Property for the strategy management application shows the correct name of the group.

If you do not have a `strategy` group in the user management system and the value of `StrategyGroup` is null, all users and system groups will be able to access the strategy management application.

4.3 Starting the Administrator

Prerequisites

You are the strategy management administrator.

Procedure

1. Open a browser window and type the following to start the Administrator:

   `http://<nwce_server>:<port>/strategy/administration`

2. Depending on the authentication set up at your site, you may be prompted to log on. If you are prompted, log on with your `pipadmin` administrator username and password.

3. If you are prompted for an authentication type, select whether your username is authenticated from SAP BusinessObjects Enterprise, from LDAP, or from Windows ActiveDirectory. If your username is authenticated from SAP NetWeaver UME, you will not be prompted for an authentication type.

4.4 Refreshing the Authorization Cache

To propagate strategy management users from SAP NetWeaver UME or the SAP BusinessObjects Enterprise in the strategy management application, you must refresh the authorization cache.

Prerequisites

You are running the Administrator as the strategy management administrator.

Strategy management users are added to SAP NetWeaver UME or to the SAP BusinessObjects Enterprise.

Procedure

1. In the Administrator, choose *Administration* → *Set System Defaults*.

2. Click *Synchronize User Tables*.

4.5 Setting Up a Model Connection

This section contains required steps for all installations. Follow the steps in this section to create your first model connection after you install Interactive Publisher. Model connections connect Web authentication users to Application Server users to a model and ultimately to a scorecard context.

For information about creating model connections, see the *Administration* section in the *SAP BusinessObjects Strategy Management* section of the SAP Library.

To create many model connections, you can use the Table Editor program. See the *Administrator's Guide for SAP BusinessObjects Strategy Management Interactive Publisher and Application Components* on SAP Service Marketplace. The Table Editor is available only when running the C++ (CPIP) version of Interactive Publisher. If you are running the Java (JPIP) version, this feature is not supported.

For information about running Interactive Publisher with the CPIP interface or JPIP interface, see JPIP and CPIP Version of Interactive Publisher [External].

Prerequisites

The Application Server dimensional model is created. For information, see the *User's Guide for SAP BusinessObjects Strategy Management Application Server* on SAP Service Marketplace

The machine where the Administrator is installed has access rights to the port where Application Server is installed. If you can telnet `<hostname> 8325` from a DOS window, then you have the appropriate access rights.

Procedure

1. Start the Administrator. Depending on the authentication set up at your site, you may be prompted to log on. If you are prompted, log on as the strategy management administrator.
2. Choose *Administration* →*Manage Models*.
3. Select *New* in the *Model Connections* list. The *Model Connection* text box appears in the *Connection Settings* section.
4. In the *Model Connection* text box, type a model connection name. Specify only alphanumeric characters (a-z, 0-9) up to a maximum size of 64 characters. You must not use special characters in the name. Then click *OK*.
5. In the *Web Server Name* text box, type the name of the server where Application Server is located. If Interactive Publisher is installed on a different server than SAP NetWeaver CE, then enter the IP address for Application Server.
6. In the *Web Server User* text box, type the authentication name of a user on the Application Server system. On Windows, this user must be a member of the administrators group. On Linux/UNIX, this user must have permission to run the scripts and programs in the Application Server installation directory.
7. In the *Password* text box, type the password for the Web authentication user.

8. In the *PAS Model* text box, type the name of the Application Server dimensional model to use for this model connection.

   You cannot use an Application Server dimensional model in the strategy management application that contains text variables.

   You must already have an Application Server model created, as described in the prerequisites. If you do not have a model created, you can use the sample model provided with the Application Server installation.

   For information about configuring your system to use the sample model and model connection, see all the topics in the section Setting Up the Demonstration Implementation [Page 76].

9. In the *PAS User* text box, type the Application Server user who has access to the Application Server model who you want to add to this model connection.

   Make sure the Application Server user is a user of the dimensional model you will be adding to the model connection definition.

   If you are running Application Server on a Linux/UNIX server, the UNIX or Linux user specified in the *PAS User* text box must have appropriate access to the `$ORACLE_HOME` directories, particularly `$ORACLE_HOME/lib32`. It is highly recommended to grant read and execute access to the directory structure under `$ORACLE_HOME` to ensure that there are no problems with Application Server connections to Oracle. You can run the `$ORACLE_HOME/install/changePerm.sh` script to ensure that the account used for client/server connections has the appropriate access privileges to the Oracle client software. This script establishes Read access to most of the directories in `$ORACLE_HOME`.

10. In the *Password* text box, type the password for the Application Server user. If the user is Guest, you do not need to specify a password.

11. In the *Port* text box, type the communications port for the UNIX or Windows server machine running Application Server. The default is `8325`.

12. In the *INI file* text box, type the name of the Application Server initialization file to use. The default filename created at installation is `lsserver.ini`.

13. In the *Service* text box, type the service parameter specified in the `lsserver.ini` file. The default service name is `PILOT`.

14. In the *Min Instances* text box, type the number of copies of Application Server to start up with this model connection. The default setting is `0`, which means that no copies will start until the first URL query is submitted.

15. In the *Max Instances* text box, type the maximum number of copies of Application Server to allow for this model connection. The default setting is `5`. You can set up to 255 instances.

    You must specify a number of Application Server instances that is equal to or lower than the number defined for the Application Server user. For example, if the Application Server user is allowed 5 instances, enter a number up to 5.

    To find out the maximum number of instances available to an Application Server user, issue the `SUPERVISOR SHOW USERS` command in Application Server. To change the number of instances available to an Application Server user, issue the `SUPERVISOR CHANGE USER` command with the `MAXLOGIN` keyword. See the *SAP BusinessObjects Strategy Management Application Server Help Guide* on SAP Service Marketplace.

16. Click *Test Connection*. You see messages that the Application Server connection is made, you are logged in, and the `USE` database is found. Click *OK* to close the message box.

17. Click *Save*.

18. At the confirmation message, click *OK*.

19. By default, *Everyone* is selected in the *Groups and Users* section. This means that all users are added to the model connection by default. Because you haven't populated the user lists yet, only the user designated as the strategy management administrator will be added as a user at this time.

Troubleshooting

You may encounter a problem when you create a model connection and save it, but it does not appear as a model connection in the Administrator.

The problem occurs if the `msxml4.dll` exists on the Windows server where Interactive Publisher is installed, and `msxml4.dll` is unregistered.

To rectify this problem, open a Command window on the Windows server and type the following:

```
regsvr32 msxml4.dll
```

You must be an administrator on the Windows server to do this.

4.6 Setting Up Entry and Approval

To use Entry and Approval, follow the steps in these sections to configure your system.

Prerequisites

If running Application Server on IBM AIX and using DB2 as the System database, you have modified `runlss.ksh` and `lsstpc.sh` to include the line `. INSTHOME/sqllib/db2profile`. For more information, see the *Installation Guide for SAP BusinessObjects Strategy Management* on SAP Service Marketplace at http://service.sap.com/instguidesEPM-STM. Then choose *Adding Environment Variables to Application Server Scripts-DB2*.

Process

1. Set up client access to the SAP NetWeaver System Database if you have not already done so. For information, see Setting Up Client Access to the SAP NetWeaver System Database [Page 11].

2. Create the special *ssm_cb_ea* Link ID for Entry and Approval. For information, see Creating a Link ID for Certain Implementations [Page 21].

3. In the Administrator, create a model connection for every model you want to use in Entry and Approval. For information, see Setting Up a Model Connection for Entry and Approval Installations [Page 39].

4.6.1 Setting Up a Model Connection for Entry and Approval

You must create a special model connection for every model that you want to use in Entry and Approval.

Entry and Approval requires a model connection to Application Server that can read dimension member and measure names without restrictions. This step ensures that the Entry and Approval connection has access to all the information that is required. Users are connected to the model with the correct privileges and receive the full set of meta data. The model connection associated with the *MMADMIN* user has limited access to Interactive Publisher functions and features, which ensures a secure environment.

Prerequisites

The Application Server dimensional model is created. For information, see the *User's Guide for SAP BusinessObjects Strategy Management Application Server* on SAP Service Marketplace.

The machine where the Administrator is installed has access rights to the port where Application Server is installed. If you can telnet <*hostname*> 8325 from a DOS window, then you have the appropriate access rights.

You are the administrator of strategy management.

You have set up client access to the SAP NetWeaver CE System database and created the *ssm_cb_ea* link ID in Application Server. For information, see Setting Up Client Access to the SAP NetWeaver System Database [Page 11] and Creating a Link ID for Certain Implementations [Page 21].

Procedure

1. Start the Administrator. Depending on the authentication set up at your site, you may be prompted to log on. If you are prompted, log on as the strategy management administrator.

2. Choose *Administration* →*Manage Models*.

3. Select *New* in the *Model Connections* list. The *Model Connection* text box appears in the *Connection Settings* section.

4. In the *Model Connection* text box, type a model connection name. You can specify any name for the model connection name. It does not need to match the dimensional model name. Specify only alphanumeric characters (a-z, 0-9) up to a maximum size of 64 characters. You must not use special characters in the name. Then click *OK*.

5. In the *Web Server Name* text box, type the name of the server where Application Server is located. If Interactive Publisher is installed on a different server than SAP NetWeaver CE, then enter the IP address for Application Server.

6. In the *Web Server User* text box, type the authentication name of a user on the Application Server system. On Windows, this user must be a member of the administrators group. On Linux/UNIX, this user must have permission to run the scripts and programs in the Application Server installation directory.

7. In the *Password* text box, type the password for the Web authentication user.

8. In the *PAS Model* text box, type the name of the Application Server dimensional model to use for Entry and Approval.

   You cannot use an Application Server dimensional model in the strategy management application that contains text variables.

   The measures in the model must have either monthly, quarterly, or yearly data. Entry and Approval does not support measures with any other periodicity.

9. In the *PAS User* text box, type `MMADMIN`. `MMADMIN` is a user that exists by default in `MASTERDB`. This user has special privileges to authorize dimensional models to be used for Entry and Approval.

   This model connection must have only one client/server connection.

10. In the *Password* text box, do not type any password.

11. In the *Port* text box, type the communications port for the UNIX or Windows server machine running Application Server. The default is `8325`.

12. In the *INI file* text box, type the name of the Application Server initialization file to use. The default filename created at installation is `lsserver.ini`.

13. In the *Service* text box, type the service parameter specified in the `lsserver.ini` file. The default service name is `PILOT`.

14. In the *Min Instances* text box, type the number of copies of Application Server to start up with this model connection. The default setting is `0`, which means that no copies start until the first URL query is submitted.

15. In the *Max Instances* text box, type the maximum number of copies of Application Server to allow for this model connection. The default setting is `5`. You can set up to 255 instances.

    You must specify a number of Application Server instances that is equal to or lower than the number defined for the Application Server user. For example, if the Application Server user is allowed 5 instances, enter a number up to 5. See the `SUPERVISOR SHOW USERS` command and `SUPERVISOR CHANGE USER MAXLOGIN` command for information about changing logins. For information, see the Application Server online Help in the Application Server Administrator program.

16. For *Groups and Users*, keep the default setting of allowing all users (*Everyone*) to use this model connection. Everyone who will be using Entry and Approval must have access to the model. This is a limited-access model connection that gives users the ability to read measures and dimensions in the dimensional model.

    Only one Application Server user can be assigned the *Everyone* setting for a model connection. If you try to create a second Application Server user with the *Everyone* setting, you receive a message telling you to pick specific users or groups.

17. Click *Test Connection*. You see messages that the Application Server connection is made, you are logged in, and the `USE` database is found. Click *OK* to close the message box.

18. Click *Save*.

19. At the confirmation message, click *OK*.

20. Repeat these steps for any other dimensional model you want to use in Entry and Approval. You must create separate model connections for scorecards and reports.

4.7 Setting the Thousands and Decimal Separator for Trend and Forecast

If you will be using Trend and Forecast in the Reports component of the application, follow the steps in this section.

Procedure

1. Open the file `FORANALYZE1` in a text editor. This file is located in `\Program Files (x86)\SAP BusinessObjects\Strategy Management\ApplicationServer\InternetPub\procs`.
2. Scroll to the bottom of the file and change the following code as appropriate:

   ```
   ... US – DEFAULT

   set def comma ,

   ... INTL

   ...set def comma .
   ```

3. Perform the same steps for the file `FORANALYZE2`.

4.8 Testing Your Connections

These steps are required for all installations.

Procedure

1. Start the *Tools* page by issuing this URL in the *Address* box of a web browser:

   `http://<nwce_server>:<port>/strategy/tools`

2. Click *PAS Query*.
3. From the *Context* drop-down list, select the model connection to work with.
4. The *Address* box shows `context=<name>&` based on your selection in the *Context* drop-down list. In the *Address* box, type the following parameter directly after `context=<name>&`:

   `result=version`

Result

Example output:

```
Interactive Publisher

Version x.x.x for Windows

Copyright (C) 2009 SAP AG

Reference xxxx on mm-dd-yyyy hh:mm:ss

Application Server

Version x.x.x for Windows
```

Reference xxxx on mm-dd-yyyy hh:mm:ss

You can test connectivity using *Manage Models* in the *Administration* section of the Administrator. For information about the Administrator, see the *Administrator* section of the *SAP BusinessObjects Strategy Management* section of the SAP Library.

5 Custom Configurations

This section describes custom configurations for Interactive Publisher, Application Server, and the strategy management application. Review all topics to decide which ones may apply to you.

5.1 Finding Version Information About the Installed Software

You may want to identify the version information about the software you have currently installed.

Procedure

1. Start the *Tools* page by issuing this URL in the *Address* box of a web browser:

   `http://<nwce_server>:<port>/strategy/tools`

2. Click *PAS Query*.

3. From the *Context* drop-down list, select the model connection to work with.

4. The *Address* box shows `context=<name>&` based on your selection in the *Context* drop-down list. In the *Address* box, type the following parameter directly after `context=<name>&`:

   `result=version`

Result

Example output:

```
Interactive Publisher

Version x.x.x for Windows

Copyright (C) 2009 SAP AG

Reference xxxx on mm-dd-yyyy hh:mm:ss

Application Server

Version x.x.x for Windows

Copyright (C) 2009 SAP AG

Reference xxxx on mm-dd-yyyy hh:mm:ss

This software program is licensed by SAP AG for use pursuant to the
terms and conditions of a license agreement.
```

5.2 Creating Public, Private, or Group User-Defined Hierarchies

If you are the strategy management administrator, you can create public, group, and private User-Defined Hierarchies in the Reports component of the application. For information about how to create a User-Defined Hierarchy, see the topics about working with User-Defined hierarchies in the online Help in the Reports component.

Features

Public User-Defined Hierarchies

Administrators can create public User-Defined Hierarchies that are available to all users. The administrator can include the public User-Defined Hierarchy in a public report.

Users can display the public report and view the public User-Defined Hierarchy.

Users with the appropriate save permissions set for their group can create a private or group report that includes the public User-Defined Hierarchy as a selection.

Users who also have the *Save Public* permission selected for their group can create a public report that includes a public User-Defined Hierarchy.

Group User-Defined Hierarchies

Administrators can create group User-Defined Hierarchies that are available to the users in a group.

Users with the ability to save reports can create private or group reports and use the group User-Defined Hierarchy in those reports.

Private User-Defined Hierarchies

Users with the appropriate save permissions can create private User-Defined Hierarchies that are available for use in their private reports. Private User-Defined Hierarchies are not supported as selections in the filters within the Scorecard component.

From a user perspective

Administrators can create, edit, rename, and delete public, group, and private User-Defined Hierarchies.

Users can select public User-Defined Hierarchies and include them in public, group, or private reports they create.

Users can select group User-Defined Hierarchies and include them in group or private reports they create.

Users can create, edit, rename, and delete private User-Defined Hierarchies and use them in their own private reports.

5.3 Formatting Calculated Columns in the Reports Component

If you want the calculated columns in the templates to appear with the same thousands separators and decimal points that are used in the data columns, then you must set the default format in the dimensional model.

Procedure

In Application Server, use the `SET DEFAULT COMMA` and `SET DEFAULT POINT` commands to set formats for all measures in the model. See the Application Server online Help for information about `SET DEFAULT`.

5.4 Setting Crossover-Year Column Headings in the Navigator Template

If you have measures that span between the end of one year and the beginning of the next year, for example, a yearly measure with the time period of February 2009 to January 2010 or a quarterly measure that has a time period of Nov 2009 to January 2010, you may want to change the default year that is displayed in the column heading in Navigator.

By default, if you display a yearly measure that spans from February 2009 to January 2010, the column heading appears as 2009. If you display a quarterly measure that spans from November 2009 to January 2010, the column heading appears as Nov-Jan 2009. You may prefer to display those headings as 2010 and Nov-Jan 2010 respectively.

Procedure

If you want to display the latest year when quarterly and yearly dates are displayed during cross-over-year periods, edit the `navtset.pro` file, which exists in the `/InternetPub/procs` directory on the server where Application Server exists. Change the lowercase y to uppercase Y as follows:

Current text:

```
set def qua '%3m% %3M %y'

set def qtd '%3m% %3M %y'

set def yea '%4y'

set def ytd '%4y YTD'
```

Change to:

```
set def qua '%3m% %3M %Y'

set def qtd '%3m% %3M %Y'

set def yea '%4Y'

set def ytd '%4Y YTD'
```

5.5 Application Limitations

This section details the maximum settings for modifying the application.

5.5.1 Administrator Maximums

Item	Maximum Number Allowed
# Contexts	500
# Application Groups	100
# Perspectives	Standard=20
# Objectives	Standard=100 Custom=100 more. Total of up to 200.
# Users per model connection	500
# Themes or Pathways	Up to 12 themes. Minimum of three pathways. Maximum of six pathways.
# Standard KPIs per context	Standard=100 Custom=100 more. Total of up to 200.
# Index KPIs per context	Unlimited
# Users in one application group	1,000
# Model connections	500
# Contexts	500
# Application Groups	100
# Perspectives per context	20
# Objectives per context	Standard=100 Custom=100 more. Total of up to 200.
# Users per model connection	500
# Themes or Pathways	Up to 12 themes. Minimum of three pathways. Maximum of six pathways.
# Total users	10,000
# Model connections	500

5.5.2 Strategy Management Application Maximums

Item	Maximum Number Allowed
# characters in an object's three associated links and titles	1,014
# Initiatives per context	1,000
# Comments per context	10,000
# Milestones per initiative	50
# Submilestones per milestone	50
# User-Defined Hierarchies per dimension	100
# Members in a User-Defined Hierarchy	The limit varies based on the length of the short names of the members selected. The limit of any one User-Defined Hierarchy may be between 40 and 150.
# Folders in which to save reports	100
# Public reports	1,000
# Group reports	1,000
# Private reports for one user	1,000
# Public dashboards	1,000
# Group dashboards	1,000
# Private dashboards for one user	1,000
# Characters in a row in a Navigator report	32,000
# Rows in a Navigator report	64,000
# Columns in a Navigator report	255
# Characters that can appear in the Report on drop-down list when adding a Rank Top 10 Dashboard panel	34-36

5.5.3 Dimensional Model Maximums

Database	Maximum
# Dimensions that measures are dimensioned by in a view	You cannot have more than 22 unique dimensions that the measures in the view are dimensioned by.
# Dimensions per model	32

Database	Maximum
# Dimension members per dimension	500,000
# Levels per dimension	256
# Hierarchies per dimension	256
# User-Defined Hierarchies per dimension	100
# Dimension members in a User-Defined Hierarchy	10,000
# Attributes/dimensions in dimensional model	50
# Attribute dimension members	100,000
# Bytes in a dimension member label	128
# Bytes in a measure label	128
# Cases in a security procedure	100
# Characters in a text variable cell	50 (Navigator) 20 (Excel Add-In)
# Measures in a dimensional model	10,000
# KPIs per dimensional model	400 standard and index KPIs combined
Report width	255 columns and up to 32,000 bytes per row
Report length	64,000 rows in conjunction with 100 columns
# dimensions per measure	12, plus Time

5.5.4 Modifying the Objective Limits

By default, the application allows you to create up to 100 objectives. You can increase the number of objectives to up to 200 for a context.

Prerequisites

You are able to log on to SAP NetWeaver Administrator.

Procedure

1. Start the SAP NetWeaver Administrator and log on as administrator.
2. Click *Configuration Management*.
3. Click the *Infrastructure* tab.
4. Select *Java System Properties*.
5. In the *Templates* section, select the *CE_Java_EE_production_full* entry.

Make sure you select the template and not the instance development or the ID.

6. Click the *Applications* tab and filter on the application.

7. Find the `MaxKPIOBJ` property and change the default value of 100 to a new limitation.

5.5.5 Modifying the KPI Limits

By default, the application allows you to create up to 100 standard KPIs. You can increase the number of standard and index KPIs to up to 200 for a context.

If you have more than 100 standard and index KPIs and you do not change these numbers, trend and status indicators may not appear in the *Scorecard* views in the Scorecard component.

Prerequisites

You are the strategy management administrator.

Procedure

1. Modify the `MAXKPIOBJ` property in SAP NetWeaver Administrator for the strategy management application and increase the value to an appropriate new limitation.

   For information, see Modifying the Objective Limits [Page 49].

2. Open the file `scorecard.pro` in a text editor. The file resides in `\Program Files (x86)\SAP BusinessObjects\Strategy Management\InternetPub\procs`.

3. Scroll to the bottom of the file where you see this information:

   ```
   ... KPI99 Standard
   &$KPI99P0STD
   &$KPI99P1STD
   &$KPI99P2STD
   ```

4. Select those lines and copy and paste them to the end of the file.

5. In the copied set of lines, change the number 99 to 100 as follows:

   ```
   ... KPI100 Standard
   &$KPI100P0STD
   &$KPI100P1STD
   &$KPI100P2STD
   ```

6. Continue copying and pasting these lines and incrementing the numbers for as many new standard and index KPIs you want to add.

7. Copy all the lines added to the `scorecard.pro` file and paste them into the file `jscorecard.pro` which resides in the same directory.

8. In the `jscorecard.pro` file, change all instances of `P` to `PARAM`.

   For example, you would change these copied lines:

```
... KPI100 Standard
&$KPI100P0STD
&$KPI100P1STD
&$KPI100P2STD
```

to.

```
…KPI100 Standard
&$KPI100PARAM0STD
&$KPI100PARAM1STD
&$KPI100PARAM2STD
```

5.6 Customizing Application Strings

If your company requires you to use specific terminology that is different from the terminology used in the application, you can change the system text.

Prerequisites

You are a strategy management administrator.

Procedure

1. Start the *Tools* page by issuing this URL in the Address box of a Web browser:

   `http://<nwce_server>:<port>/strategy/tools`

2. Click *UI Strings Administrator*.
3. From the *Application Names* drop-down list, select the component whose strings you want to change.
4. From the *Language* drop-down list, select the language of your user interface.
5. In the *Search* box, type the string you want to change. All instances of that string appear in the *String* list.
6. Edit each instance of the string as appropriate.
7. Click *Save*.

5.7 Adding Another Scorecard

The application installation provides two scorecards for storing information. `Pwsample` within the SAP NetWeaver CE System database contains sample scorecard information that you use typically access after installation to explore a sample scorecard. `Pw` database is installed as an empty database that you use to start implementing your scorecards.

During installation, you were instructed to set the scorecard to either `pw` or `pwsample` to use in SAP NetWeaver.

If your site acts as an application service provider and you must support multiple customers with separate data, you need to add and maintain another scorecard.

Prerequisites

You are a strategy management administrator and SAP NetWeaver administrator.

Procedure

Creating another scorecard

1. Start the *Tools* page by issuing this URL in the *Address* box of a Web browser:

   `http://<nwce_server>:<port>/strategy/tools`

2. Click *Add New Database*.

3. In the *New DB Name* text box, type the name of the scorecard you want to add and click *Insert*.

   You also use the *Add a new database* Web page to rename or delete scorecards.

Using the scorecard you created

1. Start the SAP NetWeaver Administrator.

2. Log on as administrator with the global password you provided when you installed NetWeaver CE.

3. Click *Configuration Management*.

4. Click the *Infrastructure* tab.

5. Select *Java System Properties*.

6. In the *Templates* section, select the *CE_Java_EE_production_full* entry.

   Make sure you select the template and not the instance development or the ID.

7. Click the *Applications* tab.

8. Filter on the strategy management application.

9. Find the `PWDatabase` property and type the name of the scorecard you just created.

   You also use the *Add a new database* Web page to rename or delete scorecard databases.

5.8 Selecting a Different Set of Scorecard Status Indicators

You can change the status icons for perspectives, objectives, and KPIs that appear in the application.

The documentation describes the default set of icons in discussions about the status indicators.

Prerequisites

You are a strategy management administrator.

Procedure

1. Start the *Tools* page by issuing this URL in the *Address* box of a Web browser:

   `http://<nwce_server>:<port>/strategy/tools`

2. Click *Set Scorecard Status Icons*.

3. Depending on the authentication set up at your site, you may be prompted to log on. If you are prompted, log on with your `pipadmin` administrator username and password.

4. Click the *Set <num>* link next to the icons you want to use.

5. At the confirmation message, click *OK*.

6. Close the browser window.

   Changing the Scorecard status icons does not affect the Initiative Status and Budget icons.

6 Setting Up the SAP NetWeaver BI Connector

You can set up the application to use SAP NetWeaver BI data as a source for your scorecard and reporting implementation. Here are scenarios to implement NetWeaver BI Connector:

- The scorecard data remains in SAP NetWeaver BI and is read as and when required.
- All of the relevant data is brought from SAP NetWeaver BI into Application Server and cached. This scenario is important where a large volume of scorecard data must be integrated.

This section describes how to set up Application Server databases to use the SAP NetWeaver BI Connector to access BI cubes. There are cases when you must use BEx Query Cubes to work with Application Server. In other cases it is a matter of choice. You must use a Query Cube for the application if:

- You want to access Navigational Attributes in NetWeaver BI from Application Server. Raw InfoCubes in the $InfoCube catalog do not expose Navigational Attributes. If you want to use them in Application Server you must create a BEx Query cube.
- The underlying InfoCube has too many Characteristics.

This section explains how to retrieve and cache information into an Application Server database about InfoCubes.

SAP NetWeaver BI is case sensitive, while Application Server is not. In SAP NetWeaver BI, characteristics called Material and MATERIAL are different objects, while in Application Server they are not. The code that caches meta data from InfoCubes in Application Server must on occasion modify names for use in Application Server, though always using the NetWeaver BI name when querying SAP NetWeaver BI. If you execute your own MDX, you must make it case sensitive.

Prerequisites

You are running SAP NetWeaver BI 7.0 min SP15 (SAP_BASIS SP13) or SAP NetWeaver BI 3.5 min SP20. The NetWeaver BI backend is running on a platform supported by NetWeaver BI.

You have an understanding of Application Server and can log on to Application Server as the administrator.

Process

1. Create a Link ID in Application Server Administrator.
2. Use the Link ID in Application Server Administrator.
3. Do one of the following:
    - If the amount of data is small, you can create an Application Server database that contains SAP cube data at the input level. Then use the application with the Application Server database that contains the InfoCube data.
    - Map the InfoCube(s) to the Application Server database and cache the information about the InfoCube(s) in the Application Server database. Then use the application with the Application Server database that is connected with the InfoCube(s).

6.1 Creating a Link ID for SAP NetWeaver BI Connector

In the application, a component called *Link* acts like DB Connect in SAP NetWeaver BI. It provides a means to access external data sources like RDBMS (through ODBC or Oracle OCI or Db2 CLI) and BAPI in a seamless, consistent way.

A Link ID stores all the relevant logon and connection setting information to connect to an external data source. Once a Link ID is created then an Application Server application can access that external data source just using the Link ID name alone. Information required to connect to the external data source using that Link ID is stored in lsdal.ini (in the Microsoft Windows directory on Microsoft Windows or by default in your $HOME directory on UNIX).

Prerequisites

You have Application Server installed in one of these configurations:

- Application Server installed on a Microsoft Windows server
- Application Server installed on a Linux/UNIX server with a client copy of Application Server installed on a Microsoft Windows machine

In the steps below, when the term **Microsoft Windows machine** is used, it means either Microsoft Windows server or Microsoft Windows client, depending on your implementation noted above.

Procedure

1. Start Application Server Administrator on the Microsoft Windows machine. Go to *Start* → *Programs* → *Application Server Administrator*.
2. Choose *File* → *New* → *Link ID* to display the *Create Link ID* dialog box.
3. Select *SAP NW BI RFC* and click *OK*. RFC supports connections through load balancing or a specific server.
4. In the *Link ID Properties* dialog box, enter the values for RFC. This dialog box shows different fields depending on the type of RFC you selected.

   All the entries in the fields of the *Link ID* dialog box correspond exactly to those fields that you see in the *SAP Logon* pad in the *Connection* tab of the dialog. You must enter the same case sensitive values that you would enter in the SAP Logon pad *Connection* tab.

Fields for SAP System Using Load Balancing	Description
System	Name of SAP System of the BI back end server. This corresponds to the entry *System ID* on the *Connection* tab of the *SAP Logon* pad.
Message Server	Host name of message server.
Group	Optional. Group name of the application servers. Default setting is *PUBLIC*.

Fields for SAP System Using Load Balancing	Description
UserId	SAP BI user who has access to the data in the cube/query. This user can be a dialog user (someone who can run front-end SAP GUI applications) or a communication user (someone who can connect and access data) as long as the user can run any query and retrieve all the results for that query.
Password	Password of SAP BI user.
Language	Client language
Client	Client Number. This is back-end-specific, which your back-end administrator can provide.
Rfc Trace (0 or 1)	1 is on and 0 is off. The default is 0.
Fields for SAP System Using a Specific Server	**Description**
System	Name of SAP System of the BI back end server. This corresponds to the entry *System ID* on the *Connection* tab of the *SAP Logon* pad.
Application Server	Host name of a specific SAP application server.
UserId	SAP BI user who has access to the data in the cube/query. This user can be a dialog user (someone who can run front-end SAP GUI applications) or a communication user (someone who can connect and access data) as long as the user can run any query and retrieve all the results for that query.
Password	Password of SAP BI user.
Gateway Server	Optional. Default is the gateway on the application server.
Language	Client language.
Client	Client Number. This is back-end-specific, which your back-end administrator can provide.
Rfc Trace (0 or 1)	1 is on and 0 is off. The default is 0.

5. Click *OK*.
6. In Application Server Administrator, click on the *Link IDs* entry and then click on the *List* tab on the main window. The new Link ID is displayed.
7. (Additional step for Linux/UNIX server implementations running a client version of Microsoft Windows) Transfer the `lsdal.ini` file from the Microsoft Windows client directory to the UNIX server directory where you installed Application Server. Ensure the filename `lsdal.ini` is in lower case on the Linux/UNIX system. Make sure the environment variable `LSLINKINI` points to the directory containing the `lsdal.ini` file in order for Application Server to find it.

When the Link ID is saved, a copy of the connection information is placed in `\Microsoft Windows\lsdal.ini`. Passwords are encrypted in `lsdal.ini`.

6.2 Using a Link ID

Once you create a LinkId, you can use it in the `ACCESS LSLINK` or `SCHEMA` subsystems to access the SAP NetWeaver BI backend. `ACCESS LSLINK` allows you to enter manual MDX statements and see the results by issuing a `PEEK` statement.

The `SCHEMA` subsystem allows you to query BI meta data about cubes, characteristics, hierarchies, levels, members and properties through BAPI. Meta data is not provided through MDX (MDX is only for queries). BAPI returns meta data through Schema Rowsets, which are tabular data sets.

The easiest way to check that your LinkId is working correctly is to get a list of all the available InfoCubes and Query Cubes on the BI back end associated with the LinkId. In the *Command* window in Application Server Administrator, issue the following:

```
SCHEMA

System>schema

CONNECT <link-id>

VIEW cubes ROWSET

END
```

You see a two-column, tab-separated output with a list of the cubes available and their cube type. The cube type is either a raw infocube, which is type `CUBE`, or a `QUERY CUBE`, with the correct $ prefix for raw cubes and the correct *<parent info cube>*/*<technical query name>* for Query Cubes.

The `VIEW` *<rowset type>* `ROWSET` command is useful for examining BI meta data. All the output is in tab-separated form, which you can copy to Excel to take a look at it. Internally, whenever you issue any `IMPORT` commands against an InfoCube, the `IMPORT` command is using these rowsets to query BI meta data and cache it in an Application Server database in Application Server meta data.

6.2.1 Troubleshooting Problems with the Link ID

When creating a Link ID, if you encounter problems, there are some tests you can perform to troubleshoot the issue.

Procedure

- First, see if you can access the target system using the *SAP Logon* pad. If you cannot access it this way, then contact the system administrator to resolve this.
- If you can access the target system through the *SAP Logon* pad, then check that all the entries in the LinkId correspond exactly with the corresponding entries in the *SAP Logon* pad. Remember that these entries are case sensitive.

On UNIX, the shared libraries are found by the loader according to the shell variables `LD_LIBRARY_PATH` (Sun, HP64 bit, Linux) or `SHLIB_PATH` (HP 32 bit) or LIB_PATH (AIX). For information about shared libraries, see the *Server Installation Guide for SAP BusinessObjects Strategy Management* located on SAP Service Marketplace, which discusses the setting of these variables for the Unicode ICU libraries.

6.3 Accessing Data from an SAP NetWeaver BI

InfoCube

There are two ways to use SAP NetWeaver BI data in Application Server:

- If the amount of InfoCube data is small, you can create an Application Server database that contains the InfoCube data at the input level. In the application, you can select the Application Server database that contains the InfoCube data.
- Map the InfoCube(s) to the Application Server database and cache the information about the InfoCube(s) in the Application Server database. In the application, you can select the Application Server database that is connected with the InfoCube(s).

6.3.1 Application Server Database Creation

You can create an Application Server database from an SAP NetWeaver BI InfoCube. You import the InfoCube input data and then consolidate it in Application Server and use the Rollup editor features. Using this method, you never have to access the InfoCube at runtime.

`IMPORT DATA` is a Hybrid OLAP `SCHEMA` subsystem command that imports data defined in SAP NetWeaver BI into an existing Application Server database.

Internally, `IMPORT DATA` imports data for one variable at a time and generates an MDX statement for each one. `IMPORT DATA` only imports `INPUT` data (transaction data `IMPORT DATA` fetches up to 1 million cells in any one MDX query). If any single variable hits the 1 million limit barrier, the data for that variable is not imported. Importing InfoCube data directly into an Application Server database is best used on small cubes. It is recommended for quick display times.

If you want to display SAP NetWeaver BI data from larger InfoCubes, you must use the `IMPORT DIMENSION`, `IMPORT TIME`, `IMPORT VARIABLES`, and `IMPORT QUERY VARIABLES` commands to access the InfoCube data without actually importing it into Application Server. By accessing the data without importing it, you retrieve and cache information about the cubes in the Application Server database while the data remains in the InfoCube.

Example

```
SCHEMA

IMPORT SCHEMA

SELECT DIM2 INPUT

SELECT DIM3 INPUT

IMPORT DATA SELECTED

SET VARIABLE * NOFROM (sets a native measure in Application Server)

ROLLUP SALES

END

ADD EVERY

END

SET PERIOD DEFAULT

CONSOLIDATE SALES
```

```
CONSOLIDATE COSTS

CONSOLIDATE ....
```

6.3.2 Mapping an InfoCube to an Application Server Database and Caching the Information

You can map one or more InfoCubes into an Application Server database using Hybrid OLAP to cache BI meta data inside an Application Server database in Application Server meta data format.

When you map InfoCubes to an Application Server database, the **Key Figures**, **Characteristics**, and **Navigational Attributes** from the InfoCubes appear in the Application Server database as normal Application Server measures, dimensions and attributes. No data is actually copied into Application Server. At runtime, Hybrid OLAP generates the appropriate MDX statements to query the corresponding InfoCube(s). A view is produced that is the same as if the data was actually in Application Server. The Application Server database appears to any application just like any other Application Server database. The application does not know that the data for the view came from SAP NetWeaver BI, and so does not require any changes in the application.

The BI meta data is retrieved and cached in an Application Server database using Application Server `IMPORT` commands. The `IMPORT` commands are the same as in standard Hybrid OLAP except that there are none of the schema tables that we have in HOLAP against an RDBMS. All the schema information comes from the OLAP BAPI rowsets.

For information about the `IMPORT` commands, see the online Help in the Application Server Administrator program.

Prerequisites

You have created a functional Link ID.

Process

1. Create an Application Server database to act as the cache for the BI meta data. Then enter the `Schema` subsystem and connect to your target BI Link ID. Then specify the name of the InfoCube that contains the meta data to retrieve.

2. Do one of the following to map the BEx Query Cube into Application Server:

    - If you created a BEx Query Cube that maps neatly into Application Server, (meaning, one that has fewer than 12 Characteristics excluding Time and Navigational Attributes, and has only 1 Time Characteristic), issue an `IMPORT SCHEMA` command.

    - If the BEx Query Cube does not map neatly, issue `IMPORT DIMENSION`, then `IMPORT TIME`, then `IMPORT VARIABLES` commands.

6.3.2.1 Creating an Application Server Database and Specifying the BEx Query Cube Name in the Schema Subsystem

Procedure

1. Create an Application Server database to act as the cache for the BI meta data. Issue the command:

   `SUPER CREATE DATABASE <database> BLOCKS 10000 OBSERVATIONS 1000 USE <database>`

2. If the start month of your fiscal calendar is not January, you must issue the `SET FISCAL CALENDAR` command. Then you must create a document in Application Server that matches the first period in the BI query/Infocube to a fiscal period in Application Server.

   For information, see Setting the Fiscal Year [Page 61].

   If your query uses the `0FISCPER` time characteristic, the document must be created even for a January start month.

   For information, see Using the 0FISCPER Time Characteristic [Page 63].

3. Enter the `Schema` subsystem and connect to your target BI LinkId:

   `SCHEMA`

   `System>schema`

   `CONNECT <link-id>`

4. Specify the name of the Cube that contains the meta data to retrieve. For example, enter something like this depending on whether it is a BEx Query Cube or a raw InfoCube:

   `CUBE '0D_SD_C03/ZTEST_MAT_HIER_2'`

   or

   `CUBE ‘$0D_SD_C03’`

5. Use an `IMPORT` command to map the BEx Query Cube to the Application Server database.

More Information

Single-Step Scenario for Mapping Meta Data [Page 64]

Multi-Step Scenario for Mapping Meta Data [Page 66]

6.3.2.2 Setting the Fiscal Year

If the start month of your fiscal calendar is not January, you must issue the `SET FISCAL CALENDAR` command in Application Server to define the correct start month. This must be done prior to importing any variables into the model.

Application Server reads a subset of the time characteristics available in BI. Only one time characteristic per query/Infocube is read and additional time values are calculated on-the-fly by Application Server. For example, if the `0CALMONTH` time characteristic is imported, then quarterly and yearly values will be calculated.

When Application Server interprets the time values from BW, it does so based on the fiscal year setting in the model. For example, the value `200901` in a BW query with the `0CALMONTH` time characteristic will be associated with April 2009 if your fiscal year begins in April.

You can control the interpretation of the BW time values by creating document sets in the Application Server model. The name of the document set depends on the time characteristic of your BW query. If you import multiple queries with the same time characteristic, they will all be interpreted in the same way. If you import multiple queries with different time characteristics, you will need one document set for each time characteristic.

The table below explains the document sets required for the various BW time characteristics. Create the document set(s) in your Application Server model and enter one of the lines from the *Example Contents* column. Application Server uses the one line of information to determine how to interpret all time values read from BW. These examples use 2009 as the fiscal year but any year can be used.

BW Time Characteristic	Document Set Name	Example Contents	Explanation

`0CALYER`	`BWFISCYRINFO`	`2009 2009 FISCAL`
		
		`2009 2008 FISCAL`
			BW time values are defined based on the end month of the fiscal year. YYYY in BW is the year associated with the last month of the fiscal year.
			
			BW time values are defined based on the start month of the fiscal year. YYYY in BW is the year associated with the first month of the fiscal year.

`0CALQUARTER`	`BWFISCQTRINFO`	`20091 20091 FISCAL20091 20081 FISCAL20091 20091 CALENDAR`	BW time values are defined based on the start month of the fiscal year. YYYY1 is the first quarter of the year that starts in YYYY BW time values are defined based on the end month of the fiscal year. YYYY1 is the first quarter of the year that ends in YYYY BW time values are defined based on the calendar year. YYYY1 is always January -

BW Time Characteristic	Document Set Name	Example Contents	Explanation
			March.
0CALMONTH	BWFISCMONINFO	200901 200901 FISCAL200901 200901 CALENDAR	BW time values align with the fiscal year start month. YYYY01 is the first month of the fiscal year BW time values align with the calendar months. YYYY01 is always January.

If you use the SAP BI Connector Administrator (BICA) to create your Application Server models, you are prompted for the information required to create these document sets when the fiscal year start is not January. The only exception is for the 0CALMONTH time characteristic. BICA makes the assumption that the BW time values align with calendar months and always creates BWFISCMONINFO with 200901 200901 CALENDAR.

6.3.2.3 Using the 0FISCPER Time Characteristic

For most of the BI time characteristics, Application Server can map the time values to a calendar date in Application Server when the fiscal year start month is January. However, for the 0FISCPER time characteristic, the time information is available in the format YYYYPPP. PPP represents a period number and could be a day, month, or quarter. You must create a document set in Application Server to match the format with a calendar date regardless of the fiscal year start month.

The steps below assume that you are importing a BI query with a 0FISCPER time characteristic and that your fiscal year starts in October.

Procedure

1. Create a document set in Application Server called BWFISCPERINFO and add these two lines:

   <periodicity>

   <YYYYPPP><YYYYMM[DD]>

Variable	Value
<periodicity>	Application Server periodicity represented in the 0FISCPER time characteristic. For example, MONTHLY, QUARTERLY etc (min 3 characters).
<YYYYPPP>	BI representation of the first period of a fiscal year. YYYY is the fiscal year. PPP is the period of that fiscal year. For example, 2009001 represents the first period in fiscal year 2009.
<YYYYMM[DD]>	Calendar equivalent of YYYYPP.

The following two lines in the `BWFISCPERINFO` document indicate that the data is monthly and 2009001 in BI corresponds to the calendar date of October 2008 in Application Server. The 2009 fiscal year range is from October 2008 through September 2009.

```
MONTHLY

2009001 200810
```

2. Issue a `SET FISCAL CALENDAR` command in Application Server before importing a BI query. For example, if you are using the document set described above, the command would be `SET FISCAL CALENDAR OCTOBER`.

6.3.2.4 Single-Step Scenario for Mapping Meta Data

If you created a BEx Query Cube that maps equal items into Application Server, you can issue an `IMPORT SCHEMA` command to map all the meta data into Application Server in one simple step.

If the following two items are true, follow the steps in this section:

- The source InfoCube or Query Cube has at most 12 Characteristics (excluding Time and Navigational Attributes).
- There is only one Time Characteristic.

Only monthly, quarterly, and yearly periodicities are supported for loading data from SAP NetWeaver BI to Application Server.

Prerequisites

You have logged on to Application Server Administrator as the administrator, created a database for caching purposes, accessed the Schema subsystem, and specified the name of the BEx Query Cube or InfoCube.

Features

In the Schema subsystem of Application Server Administrator, issue the following command:

```
IMPORT SCHEMA [INCLUDING FISCAL][RANGE <date1>-<date2>][SPANS
{DERIVED|EXACT}][HIERARCHIES {ALL|DEFAULT}] [SYSVAR] [CHARACTERISTIC
{‘0CALMONTH’|‘0CALQUARTER’| ‘0CALYEAR’}][FORCE]
```

Activities

Internally, the `IMPORT SCHEMA` command does the equivalent of:

```
IMPORT FISCAL

IMPORT DIMENSION

IMPORT TIME

IMPORT VARIABLES

IMPORT QUERY VARIABLES (from BEx Query cubes)
```

See the *Hybrid OLAP Help →SCHEMA Subsystem Command Reference →IMPORT SCHEMA* (for SAP NetWeaver BI Connector) in the online Help in Application Server Administrator for details about this command.

Example

In this example, there is a Link ID called Bilinkid, which defines connectivity information about the BI backend Q52. The Query Cube is called '0D_SD_C03/ZTEST_MAT_HIER_2'. The Query Cube has at most 12 Characteristics, has only one Time Characteristic (OCALMONTH) and only sensible Time Characteristic Values. The Application Server database is called Mytestdb.

You would use the following commands to map that cube into an Application Server database:

```
USE juice EXCLUSIVE

SUPERVISOR CREATE DATABASE Mytestdb BLOCKS 10000

USE Mytestdb EXCLUSIVE

SCHEMA

SCHEMA>CONNECT Bilinkid

SCHEMA>CUBE '0D_SD_C03/ZTEST_MAT_HIER_2'

SCHEMA>IMPORT SCHEMA

All 9 Members of 0MATERIAL;MYTESTDB Selected

All 68 Members of GOODS_RECIPIENT;MYTESTDB Selected

All 19 Members of SALES_ORGANIZATION;MYTESTDB Selected

All 15 Members of SALES_GROUP;MYTESTDB Selected

All 112 Members of REGION;MYTESTDB Selected

8 Members Roll Into Multiple Outputs

All 22 Members of 0D_MATERIAL;MYTESTDB Selected

All 5 Members of DIVISION;MYTESTDB Selected

All 6 Members of DISTRIBUTION_CHANNEL;MYTESTDB Selected

All 2 Members of COUNTRY;MYTESTDB Selected

All 8 Members of COMPANY_CODE;MYTESTDB Selected

Creating Attribute COUNTRY

1 Variable Created

1 Variable Created

1 Variable Created

1 Variable Created

1 Variable Created

1 Variable Created
```

```
1 Variable Created

1 Variable Created

1 Variable Created

1 Variable Created

SCHEMA>End
```

In Application Server Administrator, you can refresh the *Dimensional Models* pane, and expand the `MyTESTDB` database to see all the Dimensions and Attributes in the database. You can click the *Measures* item and then click the *List* tab in the main window to see a list of the measures and all their properties.

6.3.2.5 Multi-Step Scenario for Mapping Meta Data

If you created a BEx Query Cube that does not map equally into Application Server, you must issue individual `IMPORT DIMENSION`, `IMPORT MEASURES`, and `IMPORT TIME` commands to map all the meta data into Application Server.

If one or both of these items are true, follow the steps in this section:

- The source InfoCube or Query Cube has more than 12 Characteristics (excluding Time and Navigational Attributes).
- There is more than one Time Characteristic.

  Only monthly, quarterly, and yearly periodicities are supported for loading data from SAP NetWeaver BI to Application Server.

IMPORT DIMENSION

The `IMPORT DIMENSION` command retrieves the meta data for BI characteristics from the target cube and create corresponding dimensions in Application Server.

You issue the commands to import just the dimensions you want to use for analysis from the cube. Since in OLAP BAPI the Navigational Attributes appear as Characteristics, you import Navigational Attributes into Application Server Attributes this way too.

Prerequisites

You have logged on to Application Server Administrator as the administrator, created a database for caching purposes, accessed the Schema subsystem, and specified the name of the BEx Query Cube or InfoCube.

To import dimensions that exist in several different BW queries, the dimensions must be identical; they must have the same filters, restrictions, members, query variables, default hierarchy, and so on.

Features

If the raw InfoCube or Query Cube has at most 12 characteristics, excluding Time and Navigational Attributes, you can issue the `IMPORT DIMENSION *` command to import all of them. If you use the `IMPORT DIMENSION *` command then the `IMPORT` automatically figures out what Navigational Attributes there are to import.

```
IMPORT DIMENSION *
```

If you have a raw InfoCube that has more than 12 Characteristics, you issue individual `IMPORT DIMENSION` commands to import just the dimensions you want to use for analysis from the cube (and `IMPORT` at most 12 of those). Since in OLAP BAPI the Navigational Attributes appear as Characteristics, you import Navigational Attributes into PAS Attributes this way too. If you `IMPORT` them one at a time, you should import the Characteristic first and the related Navigational Attributes afterwards.

```
IMPORT DIMENSION { * | { <dimension> [,<dimension>…] ) [INCLUDING
FISCAL] [RANGE <date1>-<date>>] [HIERARCHIES {ALL|DEFAULT}] [FORCE]
```

If the raw InfoCube or Query Cube has more than 12 characteristics, then issue individual `IMPORT DIMENSION` commands to import just the dimensions you want to use for analysis. Use the BI technical dimension name, with enclosing square brackets and the names are in single quotes. You can import up to 12 characteristics this way:

```
IMPORT DIMENSION '[<name>]'

IMPORT DIMENSION '[<name>]'

...
```

Activities

The Application Server dimension name is based on the BI Characteristic description. For example, if a BI Characteristic name is `0D_DIS_CHAN` and has the description “Distribution channel”, the Application Server dimension name is `DISTRIBUTION_CHANNEL`.

The dimension hierarchies correspond to equivalent BI hierarchies. The hierarchy names are based on the hierarchy captions in SAP NetWeaver BI.

Level names in SAP NetWeaver BI have no names. They are simply Level00, Level01, Level02, and so on. The dimension levels use the names Level00, Level01, and so on. The Total member of the dimension is at Level00, and its children are at Level01.

All the Characteristic Values from the BI Characteristic are imported as members in the Application Server dimension.

The member short name is based on the BI short name (`MEMBER_NAME`). The member long name is based on the BI long name (`MEMBER_CAPTION`).

See the *Hybrid OLAP Help →SCHEMA Subsystem Command Reference →IMPORT DIMENSION* (for SAP NetWeaver BI Connector) in the online Help in Application Server Administrator for details about this command.

IMPORT TIME

There are 13 Time Characteristics in SAP NetWeaver BI. The `IMPORT TIME` command identifies which Time Characteristic to use. Application Server only uses one characteristic and must be able to derive a date from it.

The `IMPORT TIME` command is a unique `IMPORT` command in the `Schema` subsystem used only for SAP NetWeaver BI Connections.

Use `IMPORT TIME` to import the BI Time dimension that contains Time Characteristics. This allows Application Server to determine a calendar date in the fact records on an external data source that we can use to map into an internal Julian date.

Prerequisites

You have issued the `IMPORT DIMENSION` command in the Schema subsystem.

You are in the `Schema` subsystem in Application Server Administrator.

Features

If you have created a Query Cube that has only one Time Characteristic, then you can issue this command:

```
IMPORT TIME
```

If the BI Time dimension has more than one Time characteristic, issue the following command with one of these Time characteristics. Do not use any other Time characteristics:

```
IMPORT TIME [INCLUDING FISCAL] [RANGE <date1>-<date2>] [SPANS
{DERIVED|EXACT}] [SYSVAR] [CHARACTERISTIC {'0CALMONTH'|
'0CALQUARTER'|'0CALYEAR'}] [FORCE]
```

Use `0CALMONTH` for monthly data, `0CALQUARTER` for quarterly data, and `0CALYEAR` for yearly data.

Activities

See the *Hybrid OLAP Help →SCHEMA Subsystem Command Reference →IMPORT TIME* (for SAP NetWeaver BI Connector) in the *SAP BusinessObjects Strategy Management Application Server Help* located on SAP Service Marketplace for details about this command.

IMPORT VARIABLES

Use the `IMPORT VARIABLE` command to import information about Key Figures from SAP NetWeaver BI into Application Server variables (measures). The information is derived from the OLAP BAPI Measures rowset. The `IMPORT VARIABLE` command determines the dimensionality and data type (INTEGRAL BYTES 1/2/4 or NUMERIC BYTES 4/8) and creates the variable with as much information as is available from the SAP NetWeaver BI.

Then use the `SET VARIABLE` command to set properties like `RATE`, `EXPENSE`, `UNITS`, `DECIMALS`, `WIDTH` and whether the variable is to be time converted with `SUM`, `FIRST`, `LAST`, and so on.

The `IMPORT VARIABLES` command creates variables dimensioned by all the nonattribute dimensions you have IMPORTED from the corresponding InfoCube. A measure is dimensioned by all the dimensions imported from the corresponding InfoCube. There is no mixed dimensionality within a single InfoCube.

If measures are dimensioned differently then they would have to be created in different InfoCubes and either linked as MULTICUBE, or handled as separate cubes. You can have an Application Server database into which you have IMPORTED dimensions and variables from more than one cube.

If you have two InfoCubes, CubeA and CubeB, then to map both into a single Application Server database you do the following:

```
CONNECT BiTest

CUBE CubeA
```

```
IMP SCHEMA

CUBE CubeB

IMP SCHEMA
```

Prerequisites

You have issued the `IMPORT TIME` command in the `Schema` subsystem.

You are currently in the `Schema` subsystem in Application Server Administrator.

Features

Issue the following command:

```
IMPORT VARIABLES { * | <variable> [,<variable>…]} [FORCE]
```

A BEx Query Cube may have Calculated Key Figures. These are derived measures that have no data stored permanently in the InfoCube, but are calculated at runtime. When you `IMPORT` Calculated Key Figures to Application Server, they are treated no differently than other BI Key Figures. At runtime they are imported together. There is no way for you to determine from within Application Server whether a measure is a loaded or calculated measure in SAP NetWeaver BI, or determine what the calculation formula is.

If you define virtual variables in Application Server they work as normal. The Virtual Variable only exists in Application Server. At runtime, the appropriate data is fetched from the InfoCube(s) for all base measures used in any Virtual Variables, and the Virtual Variable calculations are performed in Application Server at runtime in the same way that they are calculated in native Application Server. This means that you can create a Virtual Variable in Application Server that does a calculation based on Key Figures from different InfoCubes.

Activities

See the *Hybrid OLAP Help* →*SCHEMA Subsystem Command Reference* →*IMPORT VARIABLES* (for SAP NetWeaver BI Connector) in the online Help in Application Server Administrator for details about this command.

IMPORT QUERY VARIABLES

The `IMPORT QUERY VARIABLES` command imports any query variable information from the SAP `VARIABLES` rowset for a Query Cube and caches it in Application Server.

You can examine the cache using the `EXHIBIT QUERY VARIABLES` command and you can set values for a Query Variable using the `SET QUERY VARIABLE` command.

Query Variables are placeholders in the Query that values can be supplied at runtime, rather than hard coding selections or values in the Query itself.

Query Variables can be placeholders for member names in a dimension (a characteristic value in a characteristic) or a dimension hierarchy or for a numeric value that is used in a constraint or numeric value used in a formula in a calculated measure. Query Variables can be optional or mandatory and may or may not have a default value.

At runtime, SAP NetWeaver has implemented extensions to MDX so that an application can supply values for Query Variables to the back end. The BI Connector takes any values that you have set using the `SET QUERY VARIABLE` command and incorporates them into the generated MDX to pass them to the backend.

Prerequisites

You are currently in the `Schema` subsystem in Application Server Administrator.

Features

Issue the following command:

```
IMPORT QUERY VARIABLES [FORCE]
```

Activities

See the *Hybrid OLAP Help* →*SCHEMA Subsystem Command Reference* →*IMPORT QUERY VARIABLES* (for SAP NetWeaver BI Connector) in the online Help in Application Server Administrator for details about this command.

6.3.3 Testing

Once you have all the information cached in Application Server, you can quickly and easily try some quick ad hoc navigation and querying.

Procedure

1. Click the *Data View* tab in the Application Server window to view an ad hoc navigation grid.
2. Click inside the view to display the *Viewer* dialog box.
3. Drag and drop dimensions and attributes to the *Across* and *Down* and *Page* areas to specify what you want to view. You can double click on any dimension, attribute or measures or Time in the *Viewer* to display the *Dimensional Selector* dialog box.
4. Double-click to move members (characteristic values) into and out of the view.
5. When you do double-click *Time*, the *Calendar* dialog box is displayed. If there are multiple hierarchies, you can switch hierarchies with the *Hierarchy* drop-down and you can select members from multiple hierarchies if you want.
6. When you are done, Application Server fetches all the required data from SAP NetWeaver BI and displays it in the grid. Within the grid you can drill up and down on members by double clicking. This shows you that the InfoCube is being accessed correctly by Application Server.

6.3.4 Examining the generated MDX

You can examine the generated MDX used to access SAP NetWeaver BI. You do so by issuing commands in Application Server.

Prerequisites

You should be familiar with the `SELECT`, `SET PERIOD` and `LIST` commands in Application Server. These are all documented in the Application Server help.

Features

Use the `Schema` command `SPY {ON | OFF | external text file name}` to start echoing the generated MDX.

If you issue commands such as these:

```
SET Mon PERIOD 2003/1/1-2004/12/31

SELECT VARIABLES ‘COST STATS CURRENCY’

SELECT 0D_MATERIAL
L4_DAMENKLEIDUNG,'1004',CN0F21,CNSERVICE,HERRENKLEIDUNG

ACROSS TIME Down VARIABLES, 0D_MATERIAL

SELECT DIMENSION COMPANY_CODE ALL

SELECT DIMENSION COUNTRY ALL

SET LONG

LIST
```

You will see output like this:

```
System> list

SELECT {[Measures].[1HIXHAC44YID6QLF23WLYRQ01]} ON 0,

NON EMPTY {[0CALMONTH].[200301]:[0CALMONTH].[200412]} DIMENSION

PROPERTIES MEMBER_UNIQUE_NAME ON 1,

NON EMPTY {[0D_MATERIAL MATERIAL].[CN0F21],[0D_MATERIAL

MATERIAL].[CNSERVICE],[0D_MATERIAL MATERIAL].[1004

0D_MTLGROUP],[0D_MATERIAL MATERIAL].[HERRENKLEIDUNG

0HIER_NODE],[0D_MATERIAL MATERIAL].[DAMENKLEIDUNG

0HIER_NODE]} DIMENSION PROPERTIES MEMBER_UNIQUE_NAME ON 2

FROM [0D_SD_C03/ZTEST_MAT_HIER_2

WHERE

([0MATERIAL].[All],[0D_CO_CODE].[All],[0D_DIS_CHAN].[All],[0D_DIV].[A
ll],

[0D_SHIPTO].[All],[0D_REGION].[All],[0D_SALE_GRP].[All],[0D_SALE_ORG]
.[All])

Jan 03 Feb 03 Mar 03 Apr 03

Cost stats currency

CN0F21 33338.283K 16317.999K 34206.339K 28870.065K

Pulli 33338.283K 16317.999K 34206.339K 28870.065K

HERRENKLEIDUNG 230617.46K 136451.35K 182923.60K 115826.56K

DAMENKLEIDUNG 373771.70K 277218.67K 338042.79K 264889.01K
```

Then you can issue `LIST QUARTERLY`, `LIST YEARLY`, or `LIST WEEKLY` to see the time converted.

6.3.5 Caching in Application Server

Application Server caches information from SAP NetWeaver BI to improve performance. Some of the information is cached permanently within the Application Server database, some is cached at the start of a new session and some is cached temporarily.

The dimensions in Application Server are cached permanently. If the Characteristics or Navigational Attributes change in SAP NetWeaver BI, you should issue new `IMPORT` commands in Application Server to get up-to-date dimensions in Application Server.

The `TIME` characteristic information is cached by permanently by `IMPORT TIME`. After that, in any Application Server session, the Connector examines the timestamps in the `CUBES` rowset by default every 10 minutes to see if any new data has been loaded into the InfoCube. If it has, then the Time Cache is updated. If the `USE` database is open for writing the permanent cache is updated, but if the `USE` database is open only for reading then a new temporary cache for that session is created on the `Work` database. The Time Characteristic Values are queried and an internal lookup of Characteristic Values to internal Julian dates is created. This is used throughout the session to convert the Time Characteristic Values returned in MDX queries to internal Julian dates. If more data is added to an InfoCube (for example, for a new month), you do not have to do anything in Application Server. A new session picks up all the correct dates. If new data has been load and the permanent cache could not be updated because the `USE` database was only opened for reading, a new `IMPORT` should be done at the next convenient time to update the permanent cache.

Features

Use the `CACHE TIME <seconds>` command to control how often the Connector checks to see if new data has been loaded. The default is 600 seconds (10 minutes).

For Measures in Application Server, the Measure definition is cached permanently, but the time span for a Measure (what the date range of the data for a Measure is) is cached like the Time Characteristics are — attempts are made to update it regularly. Every Application Server session should have up to date information about Time.

SAP Query Variables information is cached permanently.

Views are cached temporarily as described above.

Activities

See the *Hybrid OLAP Help →SCHEMA Subsystem Command Reference →CACHE (for SAP NetWeaver BI Connector)* in the online Help in Application Server Administrator for details about this command.

6.3.6 Querying SAP NetWeaver BI Manually in ACCESS LSLINK

You can query BI directly in `ACCESS LSLINK` just like any other external source. You use MDX rather than SQL.

Prerequisites

You should be familiar with MDX.

Features

The query returns a multi dimensional cross tabulation containing the dimensions and members you have on your axes in your MDX query. `ACCESS LSLINK` can only handle two dimensional results sets. For example, you might have only two axes in your MDX query and only one dimension on each axis.

Application Server flattens the rowset for BI within `Access LSLink`. For example:

```
ACCESS LSLINK

CONNECT BITEST

SELECT {[Measures].[1HIXHAC44YID6QLF23WLYRQ01]} ON 0,

NON EMPTY {[0CALMONTH].[200301]} DIMENSION PROPERTIES
MEMBER_UNIQUE_NAME,MEMBER_CAPTION ON 1,

NON EMPTY {[0D_MATERIAL].[CN0F21],[0D_MATERIAL].[CNSERVICE]}
DIMENSION PROPERTIES MEMBER_UNIQUE_NAME,MEMBER_CAPTION ON 2

FROM [0D_SD_C03/ZTEST_MAT_HIER_2]

PEEK
```

Produces something like the following:

```
ACCESS PILOT LINK> PEEK TABS NONUM

[0D_MATERIAL].[LEVEL01].[MEMBER_UNIQUE_NAME]
[0D_MATERIAL].[LEVEL01].[MEMBER_CAPTION]

[0CALMONTH].[LEVEL01].[MEMBER_UNIQUE_NAME]
[0CALMONTH].[LEVEL01].[MEMBER_CAPTION]

[Measures].[1HIXHAC44YID6QLF23WLYRQ01]

[0D_MATERIAL].[CN0F21] CN0F21 [0CALMONTH].[200301] JAN 2003
33338283.00
```

6.3.7 Related Application Server Commands

The following commands are available for SAP NetWeaver BI Connector.

`VIEW SPANS TYPE`

`VIEW TIME RANGE`

`VIEW <rowset> ROWSET`

`EXHIBIT QUERY VARIABLES`

`EXHIBIT DIMENSION <dimension> MDXNAME`

`EXHIBIT MEASURE MDXNAME`

`EXHIBIT VARIABLE MDXNAME`

`SET QUERY VARIABLES`

Activities

See the *Hybrid OLAP Help* →*SCHEMA Subsystem Command Reference* in the online Help in Application Server Administrator for details about this command.

7 End-User Configurations

By now all application components have been installed and configured. Before anyone can work in the Administrator or the application, each end-user must perform some administrative tasks on their client machines.

Make sure end-users have read the *Required Software and Settings* located in the *Startup Requirements* of the *SAP BusinessObjects Strategy Management* section of the SAP Library.

8 Implementing Your Strategy Management System

You can get started working with the application in three different ways:

- If you want to view the definitions of a sample scorecard first before defining your own scorecard, and allow end-users to run the Scorecard component with sample scorecard information, see Setting Up the Demonstration Implementation [Page 76].
- If you want to skip setting up the sample database and dimensional model and get started quickly with developing initiatives, objectives, and goal diagrams, see Getting Started with Initiatives, Objectives, and a Strategy [Page 84].
- If you want to start working on a full scorecard implementation, see Getting Started with a Full Implementation [Page 86]. You should already have followed the steps in the section Getting Started with Initiatives, Objectives, and a Strategy [Page 84] before you continue with a full scorecard implementation.

Prerequisites

You are a strategy management administrator.

You have set up your browser according to the steps in the *Required Software and Settings* located in the *Startup Requirements* of the *SAP BusinessObjects Strategy Management* section of the SAP Library.

System users and groups are populated in the application.

There are different types of users for each topic: the strategy management administrator, the administrator of Application Server, and a user with administrative permissions in the Administrator.

Process

1. Set up and review the demonstration implementation.
2. Implement scorecard items not reliant on a database: initiatives, objectives, and goal diagrams.
3. Set up your database and begin a full scorecard.

8.1 Setting Up the Demonstration Implementation

You can view the definitions of a sample scorecard first before defining your own scorecard, and allow end-users to run the Scorecard component with sample scorecard information.

Process

1. In the global properties of SAP NetWeaver Administrator, specify `pwsample` for the `PWDatabase` property.

   For more information, see Configuration Properties for the Application [Page 29].
2. In Application Server, build the HFPBM model by running a procedure file.
3. Start the Administrator to carry out the rest of the implementation.
4. Create a model connection.

5. Assign users to an application group.
6. Assign the application group to the *Fashions Enterprise* context.
7. Assign the model connection to the *Fashions Enterprise* context.

8.1.1 Verifying the Sample Scorecard Database in Global Properties

The first step to using the sample files involves reviewing the global properties in SAP NetWeaver Administrator to verify that the sample Scorecard database is set as the default database for the application.

Procedure

1. Start the SAP NetWeaver Administrator.
2. Log on as administrator with the global password you provided when you installed NetWeaver CE.
3. Click *Configuration Management*.
4. Click the *Infrastructure* tab.
5. Select *Java System Properties*.
6. In the *Templates* section, select the *CE_Java_EE_production_full* entry.

   Make sure you select the template and not the instance development or the ID.

7. Click the *Applications* tab.
8. Filter on the application.
9. Find the `PWDatabase` property and specify a value of `pwsample` if it is not currently using that value.

8.1.2 Building the HFPBM Model

You build the HFPBM sample dimensional model so that you can make the database available to the application.

Prerequisites

You are the administrator of Application Server.

The `PWDatabase` global property in SAP NetWeaver Administrator has the value `pwsample`.

Procedure

If Application Server is installed on a Microsoft Windows server

1. Start Application Server on the Microsoft Windows server where it is installed.
2. Issue the command:

   ```
   JOB HFPBMMAK.PRO;ext
   ```

If Application Server is installed on a Microsoft Windows client and accessing Application Server on a Linux/UNIX server in a client/server configuration

1. Copy `HFPBM.DMP` and `HFPBMMAK.PRO` from the Microsoft Windows client to the `$DBHOME` directory on the UNIX/Linux server.

   Case is significant on Linux/UNIX. The dump file and procedure file must be capitalized.

2. Start Application Server on the Microsoft Windows client.
3. Issue the command:

   ```
   JOB HFPBMMAK.PRO;ext
   ```

8.1.3 Starting the Administrator for the Demonstration

After you add the sample dimensional model to Application Server's `MASTERDB`, you can get started working in the Administrator.

Prerequisites

You are the strategy management administrator.

The global properties in SAP NetWeaver Administrator are modified to use `pwsample` for the `PWDatabase` property.

The HFPBM model is added to Application Server's `MASTERDB`.

Procedure

1. Open a browser window and type the following to start the Administrator:

   `http://<nwce_server>:<port>/strategy/administration`

2. Depending on the authentication set up at your site, you may be prompted to log on. If you are prompted, log on with your `pipadmin` administrator username and password.
3. If you are prompted for an authentication type, select whether your username is authenticated from SAP BusinessObjects Enterprise, from LDAP, or from Windows ActiveDirectory. If your username is authenticated from SAP NetWeaver UME, you will not be prompted for an authentication type.

8.1.4 Creating a Model Connection

After you add the sample dimensional model to Application Server's `MASTERDB`, you can get started working in the Administrator to create a model connection.

You define the model connection that associates your users to an Application Server username and then to an Application Server dimensional model. This model connection is then later associated with the Fashions Enterprise context.

Prerequisites

The global properties in SAP NetWeaver Administrator are modified to use `pwsample` for the `PWDatabase` property.

The HFPBM model is added to Application Server's `MASTERDB`.

You are running the Administrator as the strategy management administrator.

Procedure

1. In the Administrator, click *Administration* → *Manage Models*.

   If this section of the left-hand panel in the Administrator is unavailable to you, it means you do not have the correct permissions.

2. Select the *New* link at the bottom of the *Model Connections* list. The *Model Connection* text box appears in the *Connection Settings* section.

3. In the *Model Connection* text box, type the following model connection name:

   `HFPBM`

4. In the *Web Server Name* text box, type the name of the server where Application Server is running. If Interactive Publisher is installed on a different server than SAP NetWeaver CE, then enter the IP address for Application Server.

5. In the *Web Server User* text box, type the authentication name of a user on the Application Server system. On Microsoft Windows, this user must be a member of the administrators group. On Linux/UNIX, this user must have permission to run the scripts and programs in the Application Server installation directory.

6. In the *Password* text box, type the password for the authentication user.

7. In the *PAS Model* text box, type the following:

   `HFPBM`

   The model connection must be named HFPBM, the same name as the dimensional model name, to view the scorecards in the demonstration model.

8. Use these default settings:

   PAS User – `GUEST`

   Password – leave an empty text box

Port – `8325`

INI file – `lsserver.ini`

Service – `PILOT`

Min Instances – `0`

Max Instances – 5

Make sure the Application Server user is a user of the database you will be adding to the model connection definition.

9. Click *Test connection*.

   A message displays, stating that the Application Server connection is made, you are logged in, and the Application Server USE database was found.

10. By default, the *Everyone* option is selected in the *Groups and Users* section and all users are added to the model connection when you create it. Do any of the following to add users to this model connection:

    - Keep the default setting of allowing all users (*Everyone*) to use this model connection. You can click *Save* and skip the rest of the steps in this topic. Only one Application Server user can be assigned the *Everyone* setting for a model connection. If you attempt to create a second Application Server user with the *Everyone* setting, you will receive a message telling you to pick specific users or groups.

    - In the *Groups and Users* section, choose specific system groups or users for this model connection.

      Click *System Groups* to assign system groups. If your site has populated users lists from an LDAP/ActiveDirectory server, then this list is populated with lists of system groups to select. Otherwise, this list is empty and this option is unavailable.

      Click *Users* to assign individual users.

      From the left-hand list, do any of the following to add users and system groups:

      - Select a user or system group and click *Add* to add it to the right-hand list.

      - Drag the cursor over several users and system groups, and click *Add* to add multiple members.

      - Press CTRL and then click the users to select them, and then click *Add* to add nonadjacent users.

11. Click *Save*.

8.1.5 Assigning Users to Application Groups

You add different users to different application groups as a way of defining different application permissions. A user can be a member of any number of application groups. The *Fashions Enterprise* context has several application groups already created with no users. The Executive group already has the strategy management administrator assigned to it.

Prerequisites

The global properties in SAP NetWeaver Administrator are modified to use `pwsample` for the `PWDatabase` property.

The HFPBM model is added to Application Server's `MASTERDB`.

You are running the Administrator as the strategy management administrator. If the *Administration* section of the Administrator is unavailable to you, it means you do not have the correct permissions.

You have created a model connection.

Procedure

1. In the Administrator, click *Manage Application Groups* in the *Administration* section.
2. In the *Application Groups* list, select *Executive*.

   You are setting up this group to use most aspects of the application.

   - In the *Groups and users* section, select *System Groups or Users*, then select the users who you want to access the Executive application group and click *Add*.

     Make sure you include the users who have access to the model connection. You would never create an application group that contains users assigned to a model connection as well as users who are not assigned to the model connection.

     Make sure you include the strategy management administrator. The strategy management administrator must be added to at least one application group. The administrator adopts all the assignments for the application group in terms of reporting permissions, administrative permissions, and access to tabs with several extra privileges. For more information, see *Administration →Managing Application Groups →Administrative role in an application group* in the Administrator.

   - The *Selected Tabs* section currently has all tabs selected for this application group. This setting works well for demonstration purposes. You can leave it as is.

   - Change the settings in the *Reporting Permissions* and *Administrative Permissions* sections as appropriate. For the purposes of this demonstration, make sure the *Executive* group is allowed to access all options in the *Administrative Permissions* section.

3. Click *Save*.

4. In the *Application Groups* list, select *Service*.

   You are setting up this group to review aspects of the application that are not dependent on a dimensional model. Do the following:

   - In the *Groups and users* section, select *System Groups or Users* and then select the users who you want to access this application group and click *Add*.
   - Because these users cannot access the model connection or the *HFPBM* dimensional model, in the *Tabs to Display* section, allow these users to see only the *Strategy* and *Initiatives* tabs. All other tabs require access to the model connection.
   - For *Reporting Permissions*, allow these users to create initiatives and comments but not anything else.
   - For *Administrative Permissions*, allow these users to create contexts, goal diagrams, and objectives, but not scorecards. These users have many permissions, but none are dependent on the model connection.

5. Click *Save*.

6. Continue selecting application groups and adding users and permissions, as needed.

8.1.6 Assigning Application Groups to the Context

Now you assign the application groups to the Fashions Enterprise context. This gives the application groups access to the context.

Prerequisites

The global properties in SAP NetWeaver Administrator are modified to use `pwsample` for the `PWDatabase` property.

The HFPBM model is added to Application Server's `MASTERDB`.

You are a user with the *Create Contexts* administrative permission.

The model connection is created.

Users are assigned to the *Executive* and *Services* application groups.

Procedure

1. In the Administrator, click *Contexts* →*Assign Application Groups*.

2. From the *Context* drop-down list, select *Fashions Enterprise*.

3. In the *Application Groups* list, select *Executive*, *Service*, and any other application group you defined.

4. Click *Save*.

8.1.7 Assign the HFPBM Model Connection to the Fashions Enterprise Context

Now you will associate the Fashions Enterprise context with the HFPBM model connection. This step connects the scorecard with the dimensional model. This is an important step because this connection allows you to view the sample scorecard definitions in the Administrator and also in the application.

Prerequisites

You are running the Administrator as an administrator.

The steps in this section can be carried out by an administrator and any user assigned to an application group with *Create/Edit Scorecards* permissions.

You have already added users and permission to the sample application groups.

Procedure

1. In the Administrator, click *Scorecards* →*Set Scorecard Defaults*.

   If this section of the left-hand panel in the Administrator is unavailable to you, it means you do not have the correct permissions.

2. From the *Context* drop-down list, select *Fashions Enterprise*.
3. From the *PAS Model Connection* drop-down list, select *HFPBM*.
4. Click *Save*.
5. Click through the *Set KPIs*, *Set Objectives*, and *Set Perspectives* sections of the *Scorecard* section to review the scorecard definitions for the Fashions Enterprise context.

8.1.8 Touring the Application with the Fashions Enterprise Context

End-user assigned to the *Executive* or *Service* application group can now start the application, select the Fashions Enterprise context and display the available tabs to become familiar with the application. End-users can also access the Administrator if they have been granted access.

Procedure

1. Open a browser window and type the following to start the application:

   `http://<nwce_server>:<port>/strategy/strategymanagement`

2. Depending on the authentication set up at your site, you may be prompted to log on. If you are prompted, log on with your Web authentication username and password.

   The first time the first end-user selects the *Home* tab, that user receives a message stating that the scorecard has been modified. The user is prompted to recalculate objective and KPI statuses. The user should click *Yes*.

8.2 Getting Started with Initiatives, Objectives, and a Strategy

To get started quickly on an initial implementation, you can get your strategic objectives in place first, and then figure out how to measure the objectives at a later time. Once you have defined your objectives, you can then set up your goal diagram. Users with the ability to create initiatives can also start creating initiatives in the application. The steps in this section do not require you to have a dimensional model built yet.

Follow the steps in this section if you do not want to review the sample Scorecard database, or if you have reviewed the sample and you are ready to get started working with objectives, initiatives, and a goal diagram.

Prerequisites

There are different types of administrative permissions for each topic. If various users will be carrying out the steps in these topics, they should have the exact permissions specified in the individual Prerequisites sections.

System users and groups are populated in the applicatio. For information, see Adding Strategy Management Users [Page 33].

Process

1. Specify a scorecard database in the global properties of SAP NetWeaver Administrator. The SAP NetWeaver administrator must do this.

   For information, see Setting Up a Scorecard Database [Page 85].

2. Start the Administrator to perform the rest of the work in that system.

3. Create application groups and assign permissions. The strategy management administrator must do this.

4. Create perspectives and objectives. Any user with permission to create and edit objectives can do this.
5. Create a context. Any user with permission to create and edit contexts can do this.
6. Assign objectives to the context. Any user with permission to create and edit contexts can do this.
7. Create goal diagrams. Any user with permission to create and edit goal diagrams who has installed Diagram Manager can do this.
8. Assign application groups to the context. Any user with permission to create and edit contexts can do this.
9. Access the application to review objectives and the strategy. Any user with access to the Scorecard component and Strategy component can do this.
10. In the application, create initiatives. Any user with permission to create and edit initiatives can do this.

8.2.1 Setting Up the Scorecard Storage

When the scorecard administrator defines scorecard components, such as objectives and perspectives, the tables in the Scorecard database file store that information. When the scorecard administrator updates scorecard information, the tables are updated.

Prerequisites

You are an administrator of SAP NetWeaver.

Procedure

1. Start the SAP NetWeaver Administrator.
2. Log on as administrator with the global password you provided when you installed NetWeaver CE.
3. Click *Configuration Management*.
4. Click the *Infrastructure* tab.
5. Select *Java System Properties*.
6. In the *Templates* section, select the *CE_Java_EE_production_full* entry.

   Make sure you select the template and not the instance development or the ID.

7. Click the *Applications* tab.
8. Filter on the application.
9. Find the `PWDatabase` property and specify the value you set up during configuration of Interactive Publisher.

8.3 Getting Started with a Full Implementation

Follow the steps in this section if you are ready to get started with a full Scorecard implementation. These steps show the general flow of implementing a scorecard beginning with the development of the Application Server dimensional model through rolling out the context to end-users in the application.

Prerequisites

You have already followed the steps in the previous section, Getting Started with Initiatives, Objectives, and a Strategy [Page 84].

This section assumes that you have already done the following:

- Assigned the scorecard database name in global properties of SAP NetWeaver Administrator.
- Populated users lists.
- Created application groups and assigned permissions.
- Created the perspectives and objectives.
- Created a context.
- Assigned application groups to the context.
- Assigned objectives to the context.
- Created initiatives in the application.
- Set up a strategy, which includes the goal diagram, themes or pathways, and causes and effects.

Process

You will be creating the following items, which are all dependent on an Application Server dimensional model.

1. Develop the Application Server dimensional model.
2. Determine the appropriate formulas to create the score, trend, and gap performance measures.
3. Understand how scores color a standard KPI's status indicator.
4. Understand the two methods of determining how scores relate to index values.
5. Create measures for the standard KPIs.

   The following steps are all described in the Administrator online Help.

6. Create a model connection.
7. Set scorecard defaults for KPIs and assign the model connection to the context.
8. Create standard KPIs from the measures in the dimensional model.
9. Associate KPIs with the objectives.
10. Set the display order for KPIs.

11. Specify whether the perspectives have status indicators.
12. Set up a scored context that is measured by the status of one KPI.
13. Access the application to review the Scorecard component.
14. Create reports and dashboards in the application.
15. Assign the reports and dashboards to the context.

8.3.1 Dimensional Model Development

As in all standard dimensional models, you need to identify the dimension structures and their hierarchies, the attributes and measures, and how the measures are dimensioned. In addition, identify the fiscal calendar, the periodicity of the measures, and the period for which the data will be loaded.

This topic assumes that you already have a working dimensional model with dimensions and measures containing loaded data. For more information about creating a dimensional model, see the online Help in the Application Server. There are two types of KPIs – standard and index:

- Index KPIs are composed of standard KPIs and their measurement is derived from the measurements of the standard KPIs. These KPIs are discussed in the Administrator online Help.
- Standard KPIs are composed of five measures from the Application Server model. This topic explains how to create standard KPIs.

The first step toward implementing scorecards is to create an Application Server dimensional model to create the ratio-based measures used by the KPIs. You use the Application Server program to review your measures and determine the calculations for the measures you want to look at.

This section describes information about creating the measures in a dimensional model that are the basis for standard KPIs. This section does not provide a full explanation of developing the entire dimensional model. For information about building a dimensional model, see the online Help in the Application Server program.

8.3.1.1 Five Measures that Comprise a Standard KPI

For every standard KPI that you want to create for a scorecard, you must create five measures in the Application Server dimensional model.

You do not set up measures for index KPIs, which are simply composed of standard KPIs.

This list shows the measures you need to create for a single standard KPI. Two measures are created from source data, and three measures are virtual measures created on-the-fly as needed.

Measure	Description	Example
Actual	Contains source data from actual numbers.	Sales-Actual
Target	The target or budget measure stored in your dimensional model from source data.	Sales-Target
Score	This is a virtual measure calculated on an as needed basis from the actual and target measures. For example, Sales-Score might represent actual sales as a percentage of target sales.	Sales-Score
Trend of Actual	This is a virtual measure calculated on an as needed basis from the moving average of the actual measure.	Sales-Trend
Gap Performance	This is a virtual measure calculated as current period's score in comparison to the moving average score over time. It indicates the score's performance over time.	Sales-Gap Performance

8.3.1.2 Overview of Source and Virtual Measures

There are typically three types of measures in a dimensional model: Source, Calculated, and Virtual. Strategy management measures are either source or virtual.

Source measures

Source measures contain data that is loaded into the multidimensional model from a source file, typically a relational database or other flat files. Common source measures could include:

- Sales
- Cost
- Margin
- Price
- Units
- Commissions

- Quota
- Headcount
- Overhead

In most standard dimensional models, there is typically a Type dimension that has actual and budget or plan members. In a Scorecard model, there must be actual and target (budget) data and these data points must be created as measures rather than dimension members.

Source measures used in a Scorecard implementation

You must create two source measures, actual and target, for every Key Performance Indicator (KPI) you want to use in a scorecard:

- **Actual** — The actual measure stored in your dimensional model from source data.
- **Target** — The target or budget measure stored in your dimensional model from source data.

Virtual measures

Virtual measures are like calculated measures that are derived by the calculation of two or more measures. They differ from calculated variables because their data values are generated dynamically when you request them, and they are not stored permanently. Virtual measures are calculated when they are needed and the data values are automatically generated when you create a data view that uses a virtual measure.

Virtual measures used in a Scorecard implementation

In a scorecard implementation, the score, trend of actual, and gap performance measures are virtual measures for a KPI.

- **Score** —Calculated as needed from the actual and target measures.
- **Trend of actual** — Calculated as needed from the moving average of the actual measure.
- **Gap Performance** — Calculated as needed to measure the current period's score in comparison to the moving average score over time. It indicates the score's performance over time.

8.3.2 How Scores Color a Standard KPI's Status Indicator

The application uses the *Score* value for a standard KPI to determine the color of that KPI's status indicator. The Score values are matched to user-defined index values that are matched to different status colors. The color associated with the index value that matches the score becomes the color of the standard KPI's status indicator.

There are several steps to building a standard KPI:

1. Determining the appropriate formulas to create the score, trend, and gap performance measures. This step is performed in Application Server.

2. In the Administrator, you set up the KPI for the scorecard by selecting its five measures from the Application Server dimensional model, and you determine the appropriate index values to color the status indicator. Which index values you use depends on the formula you used to create the KPI's score measure, and the results you expect.

When these two steps are completed, the end user can quickly see the KPI's measures, the association between the score measure and the index values, and how and why the KPI was given a particular status color.

8.3.3 Dimensional Model Creation

As in all standard dimensional models, identify the dimension structures and their hierarchies, the attributes and measures, and how the measures are dimensioned. In addition, identify the fiscal calendar, the periodicity of the measures, and the period for which the data will be loaded.

This topic assumes that you already have a working dimensional model with dimensions and measures containing loaded data. For more information about creating a dimensional model, see the online Help in the Application Server program.

If you are using attributes in your dimensional model, make sure the short names do not contain plus signs (+). If they do have plus signs, users will receive an error message when selecting those members in the *Dimensional Selector* dialog box in the Reports component.

8.3.4 Creating Measures for the KPIs

Follow these steps for every measure you want to develop into a KPI for your scorecard implementation.

You must create the measure names using the following format:

Measure Type	Measure Name
Actual	<measure>_ACT
Target	<measure>_TAR
Score	<measure>_TARDEV
Trend of Actual	<measure>_TRD
Gap Performance	<measure>_TRDDEV

Note

If you are implementing a Type dimension, only the _TAR measures should be dimensioned by the Type dimension.

Procedure

1. Determine the dimensions in the model for which the measures are to be dimensioned.

2. Start the Application Server program.

3. Create the actual measure. For example:

   This shows an example of a Sales measure that is associated with the Customer, Dealer, and Vehicle dimensions:

   ```
   CREATE MONTHLY VARIABLE Sales_ACT LABEL 'Sales-Actual' by
   Customer, Dealer, Vehicle
   ```

4. Create the target measure. For example:

   ```
   CREATE MONTHLY VARIABLE Sales_TAR LABEL 'Sales-Target' BY
   Customer, Dealer, Vehicle
   ```

5. Create the Score measure using one of these calculations below. The type of calculation depends on the type of values you are measuring.

   - Achievement percent scores account for scenarios where you want actual to exceed the target.

     Example of KPIs with achievement targets: Revenue, Profit, # Cases shipped, # Customers

     The calculation for an achievement percent score is as follows:

     ```
     CREATE VARIABLE Sales_TARDEV LABEL 'Sales-Score' BY
     Customer, Dealer, Vehicle AS (Sales_ACT % Sales_TAR)
     ```

   - Reduction percent scores account for scenarios where you want actual to be less than the target

Example of KPIs with reduction targets: Cost, Expense, Overtime

The calculation for a reduction percent score is as follows:

```
CREATE VARIABLE Sales_TARDEV LABEL 'Sales–Score' BY
Customer, Dealer, Vehicle AS (100 -((Sales_ACT–
Sales_TAR)%Sales_TAR))
```

- Absolute percent scores account for scenarios where you want actual to always equal target.

  Example of KPIs with absolute targets: Inventory

  The calculation for an absolute percent score is as follows:

```
CREATE VARIABLE Sales_TARDEV LABEL 'Sales–Score' BY
Customer, Dealer, Vehicle AS (100–ABS((Sales_ACT–
Sales_TAR)%Sales_TAR))
```

- Zero scores account for situations when you want actual and target to be 0 or close to it.

  Example of KPIs with zero targets: Product defects, Employee sick days, Employee attrition

  The calculation for zero score is as follows:

```
CREATE VARIABLE Sales_TARDEV LABEL 'Sales–Score' BY
Customer, Dealer, Vehicle AS ((Sales_ACT - Sales_TAR)
```

- Deviation percent scores

  The calculation for a deviation percent score is as follows:

```
CREATE VARIABLE Sales_TARDEV LABEL 'Sales–Score' BY
Customer, Dealer, Vehicle AS ((Sales_ACT -
Sales_TAR)%Sales_TAR)
```

In cases where actual values do not exist for some periods but target values do exist, you can make an adjustment to the formula to prevent misleading score values. The adjustment involves multiplying the formula by (actual+.001)/(actual+,001). With this adjustment in place, if the actual value is missing, then the score value is missing. For example, the CREATE VARIABLE command for the reduction percent score is adjusted as follows:

```
CREATE VARIABLE Sales_TARDEV LABEL 'Sales–Score' BY
Customer, Dealer, Vehicle AS (100 -((Sales_ACT–
Sales_TAR)%Sales_TAR))*((Sales_ACT+.001)/(Sales_ACT+.001))
```

This adjustment is not necessary for achievement percent calculations.

6. Create the Trend of Actual measure using one of these formulas:

```
CREATE VARIABLE Sales_TRD LABEL 'Sales–Trend of Actual' BY
Customer, Dealer, Vehicle AS MOVING2 (Sales_ACT,1,3)
```

7. Create the Gap Performance measure using one of these formulas:

   Calculation for achievement percent, reduction percent, absolute percent, or deviation percent gap performance:

```
CREATE VARIABLE Sales_TRDDEV LABEL 'Sales-Gap Performance'
```

```
BY Customer, Dealer, Vehicle AS (Sales_TARDEV-
MOVING2(Sales_TARDEV,1,3))%ABS(MOVING2(Sales_TARDEV,1,3))
```

Calculation for a zero gap performance:

```
CREATE VARIABLE Sales_TRDDEV LABEL 'Sales-Gap Performance'
BY Customer, Dealer, Vehicle AS (Sales_TARDEV-
MOVING2(Sales_TARDEV,1,3))%MOVING2(Sales_TARDEV,1,3)
```

Additional Information

See the Administrator Help located in the S*AP BusinessObjects Strategy Management* section of the SAP Library for information about all the other strategy management administration tasks.

9 Integration with Other Systems

The strategy management application has interfaces to other systems:

Prerequisites

You are the strategy management administrator.

Enterprise Portal is installed and running if you want to set up a link to the strategy management application from Enterprise Portal.

Governance, Risk, and Compliance is installed and running if you want to include GRC data in the strategy management application.

Features

You can set the following technical interfaces:

- Set up a link from the Enterprise Portal to the strategy management application.

  For information, see Setting a Link to the Application from Enterprise Portal [Page 95].

- Configure the strategy management application to access GRC Risk data. You can create KPIs using risk data, and you can add a Heat Map to the Home component.

  For information, see Configuring the Application to Access GRC Risk Data [Page 95]

  After configuration, you can use the *Connectors* section of the Administrator to map GRC data to the strategy management application. For information, see the *Administration* section in the *SAP BusinessObjects Strategy Management* section of the SAP Library.

- Configure the strategy management application to access Business Planning and Consolidation data. You can create initiatives and KPIs using Business Planning and Consolidation data and use them in your context.

  For information, see Configuring the Application to Access BPC Data [Page 100].

  After configuration, you can use the *Connectors* section of the Administrator to map BPC data to the strategy management application. For information, see the Addendum documentation that is included in the SAP BusinessObjects Strategy Management Central Note for 7.5 located at http://service.sap.com/notes.

- Allow other SAP systems to extract strategy management application data for their own purposes.

  For information, see Providing Strategy Management Application Data for Other Systems [Page 102].

- Allow other SAP systems to extract Application Server data for their own purposes.

  For information, see Providing Application Server Data for Other SAP Systems [Page 108].

- Allow users to create Xcelsius Dashboards using strategy management data.

  For information, see Providing Strategy Management Data for Xcelsius Dashboards [Page 112]

- Allow Voyager users to display strategy management data in Voyager.

  For information, see Providing Strategy Management Data for Voyager [Page 117]

- Allow WebI users to display strategy management data using WebI.

  For information, see Providing Strategy Management Data for WebI [Page 125]

- Allow Crystal Report users to create reports in Crystal Reports using strategy management data.

  For information, see Providing Strategy Management Data for Crystal Reports [Page 131]

9.1 Setting a Link to the Application from Enterprise Portal

You can add a link to the strategy management application from the Enterprise Portal. When a user clicks the link, the strategy management application launches in a new browser window.

Prerequisites

You have Enterprise Portal and you are an administrator of Enterprise Portal.

Procedure

1. Start the Enterprise Portal Administrator.
2. In the Portal Content, create an iView.
3. In the URL text box, type the following:

   `http://<nwce_server>:<port>/strategy/pilotworks/eplaunch.htm`

4. Set a *GET Request Method*.

9.2 Configuring the Application to Access Risk Management Data

You can integrate SAP BusinessObjects Risk Management data into the strategy management application, allowing an integrated, consolidated, and comprehensive view of business risks in the context of performance-related strategic objectives.

Prerequisites

You are a strategy management administrator.

The SAP BusinessObjects Risk Management application is installed at your site.

You have created a model connection, associated it with the Application Server database to contain the risk management data, and the model connection and Application Server database both have the same name.

Process

1. Set up client access to the SAP NetWeaver System Database if you have not already done so.

   For information, see Setting Up Client Access to the SAP NetWeaver System Database [Page 11].

2. Create the special *ssm_cb_ea* Link ID for SAP BusinessObjects Risk Management if you have not already done so.

   For information, see Creating a Link ID for Certain Implementations [Page 21].

3. Configure Web Service Proxies.

4. Set Java System Properties for the SAP BusinessObjects Risk Management interface in SAP NetWeaver CE.

5. Start the Administrator and set a risk management batch load schedule.

6. Use the *Connectors* section of the Administrator to map SAP BusinessObjects Risk Management data to strategy management data.

   For information, see the SAP Library at http://help.sap.com →*SAP BusinessObjects* →*EPM Solutions* →*Strategy Management* →*SAP BusinessObjects Strategy Management* →*Application Help* →*Administration* →*Connectors*.

9.2.1 Configuring Web Service Proxies

You need to configure the *grrm_webservice_api* and *grrm_xmii_api_heat_map_org* proxies.

Prerequisites

You are an administrator of SAP NetWeaver.

You are an SAP BusinessObjects Risk Management user with reporting authorization.

Procedure

1. Open the SAP NetWeaver Web Services Administration using the following URL:

   ```
   http://<nwce_server>:<port>/nwa/WSAdmin
   ```

2. From the *Search by* drop-down list, select *Proxy Definition name* and click *Go*.

3. Select the proxy *grrm_webservice_api*.

4. Select the *Configuration* tab and the *Logical Ports* tab.

5. Select the logical port and click *Delete LP* to remove the default Logical Port.

6. Click *Create LP*.

7. Select *WSDL URL* and click *Next*.

8. In the General subtab, enter a value for the Web Service Endpoint URL. This is the value of the location attribute of the soap:address element (child of element wsdl:service) in the WSDL.

   To find the GRC aggregation WSDL URL, do the following:

.

:

a. Log onto the SAP system running GRC and execute the transaction *SOAMANAGER*.

b. In the SOA Management screen, select the *Service Administration* tab.

c. Select *Single Service Configuration*.

d. On the *Search* tab, in the *Search by* dropdown list, select *Service*. In the *Search Pattern* text box, enter **`grrm*`**. From the *Field* dropdown list, select *Both Names* field and then select *Go*.

e. In the list of grrm Web services, select *grrm_webservice_api* and then select *Apply Selection*.

f. Select the *Configurations* tab and then select *Edit*.

g. In the configuration section select the *Transport Settings* tab.

h. Construct the WSDL URL by adding the server and port of the GRC server in front of the Calculated Access URL.

   For example, if the server is `http://us.wdf.sap.corp:50044` and the calculated access URL is `/sap/bc/srt/wsdl/bndg_49B32A00A7FB0D07E10000000A424864/wsdl11/allinone/ws_policy/document?sap-client=300`, then the WSDL URL is:

   `http://us.wdf.sap.corp:50044/sap/bc/srt/wsdl/bndg_49B32A00A7FB0D07E10000000A424864/wsdl11/allinone/ws_policy/document?sap-client=300`

9. In the *User Name* and *Password* text boxes, enter the user name and password to access the WSDL and then click *Next*.

10. At the prompt to choose the binding for the WS client, make sure the Logical Port is *RM_BINDING* and then click *Next*.

11. Select the *Security* subtab.

12. From the *Authentication* drop-down list, select *Http Authentication* if it is not selected.

13. Click the *Details* button.

14. Enter the WSDL user ID and password and confirm the password.

15. Click *Save*.

16. Repeat these steps to configure the proxy *grrm_xmii_api_heat_map_org*. In the step to choose the binding for the WS client, make sure the Logical Port is *HM_BINDING*.

9.2.2 Setting Java System Properties for SAP BusinessObjects Risk Management

You must set certain Java System Properties to activate the SAP BusinessObjects Risk Management links in the *Connectors* section of the Administrator.

The properties also make the *View Details* link available in the Heat Map in the Home component. The *View Details* link allows the user to go to the risk management application from the strategy management application. If no URL is entered, there is no *View Details* link.

Prerequisites

You are an administrator of SAP NetWeaver.

Procedure

1. Start SAP NetWeaver Administrator.

2. Log on as administrator with the password you provided when you installed SAP NetWeaver CE.

3. Click *Configuration Management*.

4. Click the *Infrastructure* tab.

5. Select *Java System Properties*.

6. In the *Name* column, type `strategy` and press *Enter* to list the strategy applications.

7. Select the template *CE_Java_EE_production_full*.

   Make sure you select the template and not the instance development or the ID.

8. Click the *Applications* tab.

9. Select *xapps~cpm~sm~strategymanagement*.

10. Find the `GRCFlag` property and specify the value `Yes`. This setting allows you to use the *GRC* links in the *Connectors* section of the Administrator to associate a context with an SAP BusinessObjects Risk Management organizational unit.

11. Find the `GRCSystemURL` property and specify the URL to the system running SAP BusinessObjects Risk Management.

9.2.3 Setting Up a Schedule to Acquire SAP BusinessObjects Risk Management Data

You use the *Risk Management Batch* schedule in the Administrator to schedule when data is acquired from SAP BusinessObjects Risk Management. The *Risk Management Batch* schedule connects with the SAP BusinessObjects Risk Management system and populates strategy management tables in the SAP NetWeaver CE System database with the data used and displayed in the strategy management application.

Prerequisites

You are a strategy management administrator.

Procedure

1. Start the Administrator using the following URL in a browser window:

   `http://<nwce_server>:<port>/strategy/administration`

2. Depending on the authentication set up at your site, you may be prompted to log on. If you are prompted, log on as the strategy management administrator.

3. Click *Configure Scheduler* in the *Scheduler* section.

4. Click *Add Task* to enable the task. You only need to do this one time.

5. Click *Edit* on the *Risk Management Batch* row. The lower part of the window displays fields for entering the schedule.

6. From the *Set to run* drop-down list, select the frequency at which you want the Scheduler to acquire risk management data. Since you want this task to run now,

specify *Daily*. You can change the setting once you have acquired Risk Management data.

7. From the hour and minute drop-down lists, select the time of day to run the task. Set it for 2 minutes from now so you can load the data now. The hours follow a 24-hour clock.

8. Make sure the *Enabled* option is selected.

9. Click *Save*.

10. After the task runs, look in the Data Dictionary `CPMS_ORMAGGR` and `CPMS_ORMHEATMAP` tables and make sure there is data in the tables.

11. Once data is in the tables, you can return to *Configure Scheduler* in the Administrator and reset the schedule to an appropriate frequency.

For information about the Administrator and configuring schedules, see the Administrator section of the SAP BusinessObjects Strategy Management Application Help in the SAP Library.

For information, see the SAP Library at http://help.sap.com →*SAP BusinessObjects* →*EPM Solutions* →*Strategy Management* →*SAP BusinessObjects Strategy Management* →*Application Help* →*Administration* →*Scheduling*.

9.2.4 Setting Up the GRC Connector in the Administrator

Use the Administrator to map SAP BusinessObjects Risk Management data to the strategy management application, allowing an integrated, consolidated, and comprehensive view of business risks in the context of performance-related strategic objectives.

The *GRC — Scorecard KPIs* link in the Administrator allows you to create the Application Server measures from SAP BusinessObjects Risk Management data. Once this is complete, you can use the Administrator to create KPIs from the measures, and access the KPIs in the Scorecard component of the strategy management application.

Prerequisites

You are a strategy management administrator.

You ran a *Risk Management Batch* task in the Administrator *Scheduler* to populate SAP BusinessObjects Risk Management data in the SAP NetWeaver CE System database.

The `GRCFLAG` and `GRCSystemURL` global properties are updated in SAP NetWeaver Administrator.

The model connection name matches the name of the Application Server database.

You have created a Link ID used for both Entry and Approval and SAP BusinessObjects Risk Management. For information, see Creating a Link ID for Certain Implementations [Page 21].

Procedure

1. Start the Administrator. Depending on the authentication set up at your site, you may be prompted to log on. If you are prompted, log on as the strategy management administrator.

2. Click *GRC — Scorecard KPIs* in the *Connectors* section.

For information, see the SAP Library at http://help.sap.com →*SAP BusinessObjects* →*EPM Solutions* →*Strategy Management* →*SAP BusinessObjects Strategy Management* →*Application Help* →*Administration* →*Connectors*.

9.3 Configuring the Application to Access Planning and Consolidation Data

You can integrate SAP Business Planning and Consolidation data into the strategy management application, allowing an integrated, consolidated, and comprehensive view of planning and consolidation data in the context of performance-related initiatives and KPIs.

Prerequisites

You are a strategy management administrator.

The SAP BusinessObjects Planning and Consolidation application is installed at your site.

Process

1. Set up client access to the SAP NetWeaver System Database if you have not already done so.

   For information, see Setting Up Client Access to the SAP NetWeaver System Database [Page 11].

2. Create the special *ssm_cb_ea* Link ID for SAP BusinessObjects Planning and Consolidation if you have not already done so.

   For information, see Creating a Link ID for Certain Implementations [Page 21].

3. Set up connectivity to the Planning and Consolidation Web Service.

   For information, see Setting up Connectivity to the Business Planning and Consolidation Web Service [Page 100].

4. Expose Planning and Consolidation features to the strategy management application.

   For information, see Exposing Planning and Consolidation Features in the Application [Page 101].

When this process is complete, you can then use the Administrator to set up the implementation between strategy management and planning and consolidation data, and create schedules for loading Planning and Consolidation data.

Then Initiatives authors can use the Initiatives component to create initiatives based on Planning and Consolidation data.

For information, see the section *Creating Initiatives and KPIs using Planning and Consolidation Data* in the *Documentation Addendum* that is included in the SAP BusinessObjects Strategy Management Central Note #1284737 located at http://service.sap.com/notes.

9.3.1 Setting up Connectivity to the SAP Business Planning and Consolidation Web Service

Procedure

1. Start SAP NetWeaver.
2. Select the *SOA Management* tab.
3. Select the *Business Administration* sub-tab.
4. Click *Web Services Administration*.
5. In the *Search By* list, select *Proxy Definition Name*.
6. Click *Go*.
7. Select *MetaDataWSExtSoap* and then click the *Configuration* tab.
8. Click the *Logical Ports* sub-tab and then select *MetaDataWSExtSoap*.
9. If SAP Business Planning and Consolidation is installed in a non-default location, click the *Details* tab and change the default WS Endpoint URL to a valid Business Planning and Consolidation URL.

   If SAP Business Planning and Consolidation is installed to the default location, you can skip this step because the strategy management application is configured to connect to the default Business Planning and Consolidation URL.

   The strategy management application requires the machine name as part of the WS Endpoint URL. The application cannot communicate with the planning and consolidation application if the WS Endpoint URL is configured with the IP address.

   If your version of SAP NetWeaver CE or SAP NetWeaver on UNIX requires an IP address for the WS Endpoint URL, you cannot integrate the planning and consolidation data into the strategy management application.
10. Click the *Security* tab.
11. In the *HTTP Authentication* section, select *User ID/Password (Basic)* and then click *Save*.
12. Click on the details for the basic authentication section and add a valid username and password.

9.3.2 Exposing Planning and Consolidation Features in the Application

Prerequisites

You are an administrator of SAP NetWeaver.

Procedure

1. Start the SAP NetWeaver Administrator.

2. Log on as administrator with the global password you provided when you installed SAP NetWeaver CE.

3. Select *Configuration Management*.

4. Click the *Infrastructure* tab.

5. Select *Java System Properties*.

6. In the *Templates* section, select the template *CE_Java_EE_production_full* (or whatever your NetWeaver server template is called). Make sure you select the template and not the instance development or the ID.

7. Click the *Applications* tab in the *Details* section.

8. In the *Name* column, type `strategy` and press `Enter` to list the strategy applications.

9. Select the name *xapps~cpm~sm~strategymanagement*.

10. In the *Extended Details* section, click inside the *Name* text box and type `BPCFlag`. Specify a value of *Yes*.

11. When you return to the *Extended Details* section, click *Save*.

9.4 Providing Strategy Management Data for Other Systems

You can use the *SMDataService* Web Service API to extract data from the strategy management application to another SAP system. Using the *SMDataService* Web Service API, other systems can obtain performance management scorecard information including contexts, perspectives, KPIs, index KPIs, initiatives, and objectives.

SMDataService has replaced a previous service called *SMService*.

If you are currently using *SMService*, you can continue to use that service or you can switch to *SMDataService*. The API is the same for both services.

If you are a new user planning to add strategy management data to your system, or if you want to add data to Xcelsius Dashboards, use *SMDataService*.

Process

1. Add *SMDataService* Web Service users to SAP NetWeaver UME.

   For information, see Adding SMDataService Web Service Users to SAP NetWeaver UME [Page 102].

2. Set *Basic Authentication* for the *SMDataService* Web Service.

   For information, see Setting Basic Authentication for the SMDataService Web Service [Page 103].

3. Use the API for the *SMDataService* Web Service to acquire strategy management contexts, perspectives, KPIs, index KPIs, initiatives, and objectives for use in another system.

   For information, see API for the SMDataService Web Service [Page 103].

9.4.1 Adding SMDataService Web Service Users to SAP NetWeaver UME

Any user who will be using the *SMDataService* Web Service must be added to SAP NetWeaver UME even if you are using SAP BusinessObjects Enterprise for user management. This is because basic authentication of the *SMDataService* Web service is executed by SAP NetWeaver UME.

Prerequisites

You are an administrator of SAP NetWeaver.

Procedure

Add Web Service users for *SMDataService* to SAP NetWeaver UME.

For information, see Adding Strategy Management Users [Page 33].

9.4.2 Setting Basic Authentication for the SMDataService Web Service

You must configure the *SMDataService* Web Service provider to use Basic Authentication.

Prerequisites

You are the administrator of SAP NetWeaver.

Procedure

1. Start *Web Services Administration* in SAP NetWeaver using the following URL:

   `http://<nwce_server>:<port>/nwa/WSAdmin`

2. In the *Search By* drop-down list, select *Service Definition Name* and click *Go*.
3. From the list of services, select *jee-default_SMDataService*.
4. Select the *Configuration* tab and then select the *Service Endpoints* tab.
5. From the *Service* list, select *SMDataServiceService*.
6. Click *Edit*.
7. Click the *Security* tab.
8. Do one of the following:

   If using SAP NetWeaver UME, in the *HTTP Authentication* section, select *User ID/Password* and then click *Save.*

   If using SAP BusinessObjects authentication, in the *HTTP Authentication* section, make sure *User ID/Password* is not selected, and then click *Save.*

9.4.3 API for the SMDataService Web Service

The *SMDataService* Web Service is deployed in SAP NetWeaver CE. You access the strategy management Web Service Description Language (WSDL) using the following URL in a browser window:

`http://<nwce_server>:<port>/strategy/SMDataServiceService?wsdl&mode=sap_wsdl`

The Web service authentication is handled by SAP NetWeaver and is set to Basic authentication and requires a username and password.

Prerequisites

SMDataService Web Service users are added to SAP NetWeaver UME.

Basic Authentication is set for this Web Service Provider in SAP NetWeaver Administrator.

Features

The following table shows the list of supported Web Service Methods for performance management data.

Web Service Method Name	Description
`getAllContexts(long dbNameId)`	Returns a list of all contexts for a given database id.
`getAllScorecards(long dbNameId)`	Returns a list of all scorecards for a given database id.
`getAllPerspectives(long contextId, long dbNameId)`	Returns a list of all perspectives for a given context id and database id.
`getPerspectiveById(long perspectiveId)`	Returns the perspective details for a given perspective id.
`getObjectivesByPerspective(long perspectiveId)`	Returns a list of objectives for a given perspective id.
`getObjectiveById(long objectiveId)`	Returns details of the objective for a given objective id
`getObjectivesByInitiativeId(long initiativeId)`	Returns a list of objectives for a given initiative id.
`getAllKPIs(long contextId, long dbNameId)`	Returns a list of all KPIs for a given context id and database id
`getKPIsByObjective(long objectiveId)`	Returns list of KPIs for a given objective id
`getKPIsByIndexKPI(long id)`	Returns a list of KPIs for a given Index KPI id
`getKPIById(long kpiId)`	Returns a KPI corresponding to a specific id
`getKPIsByInitiativeId(long initiativeId)`	Returns a list of KPIs for a given initiative id.

Web Service Method Name	Description
`getAllinitiatives(Long contextId, Long dbNameId)`	Returns list of all Initiatives for given context id and database id
`getInitiativeById(Long initiateveId)`	Returns details of an initiative for a given Initiative id.
`getTaskById(Long taskId)`	Returns details of the task for a given task id.
`getTasksByInitiativeId(Long initiativeId)`	Returns a list of tasks for a given initiative id.

The schema for all the response values is detailed in a WSDL document. All the methods that return lists of objects populate the minimum identifying information of the objects (which usually includes just ID, Name and Description). However, all the pertinent information is present when an object is retrieved by ID.

You can see a sample located at:

`http://<nwce_server>:<port>/strategy/tools/stratbrowser.jsp`

9.4.4 SMService

SMDataService has replaced a previous service called *SMService*.

If you are currently using *SMService*, you can continue to use that service or you can switch to *SMDataService*. The API is the same for both services.

If you are a new user planning to add strategy management data to your system, or if you want to add data to Xcelsius Dashboards, use *SMDataService*.

For information, see Providing Strategy Management Data for Other Systems [Page 102].

Process

1. Add *SMService* Web Service users to SAP NetWeaver UME.

   For information, see Adding SMService Web Service users to SAP NetWeaver UME [Page 105].

2. Set *Basic Authentication* for the *SMService* Web Service.

   For information, see Setting Basic Authentication for the SMService Web Service [Page 106].

3. Use the API for the *SMService* Web Service to acquire strategy management contexts, perspectives, KPIs, index KPIs, initiatives, and objectives for use in another system.

   For information, see API for SMService Web Service. [Page 106]

9.4.4.1 Adding SMService Web Service users to SAP NetWeaver UME

Any user who will be using the `SMService` Web Service must be added to SAP NetWeaver UME even if you are using SAP BusinessObjects Enterprise for user management. This is because basic authentication of the `SMService` Web service is executed by SAP NetWeaver UME.

Prerequisites

You are an administrator of SAP NetWeaver.

Features

You must add Web Service users for `SMService` to SAP NetWeaver UME.

For information, see Adding Strategy Management Users [Page 33].

9.4.4.2 Setting Basic Authentication for the SMService Web Service

You must configure the `SMService` Web Service provider to use *Basic Authentication*.

Prerequisites

You are the administrator of SAP NetWeaver.

Procedure

1. Start *Web Services Administration* in SAP NetWeaver using the following URL:

   `http://<nwce_server>:<port>/nwa/WSAdmin`

2. In the *Search By* drop-down list, select *Service Definition Name* and click *Go*.
3. From the list of services, select *jee-default_SMService*.
4. Select the *Configuration* tab and then select the *Service Endpoints* tab.
5. From the *Service* list, select *SMServiceService*.
6. Click *Edit*.
7. Click the *Security* tab.
8. In the *HTTP Authentication* section, select *User ID/Password* and then click *Save*.

9.4.4.3 API for the SMService Web Service

The sSMService Web Service is deployed in SAP NetWeaver CE. You access the strategy management Web Service Description Language (WSDL) using the following URL in a browser window:

```
http://<nwce_server>:<port>/strategy/SMServiceService?wsdl&mode=sap_wsdl
```

The Web service authentication is handled by SAP NetWeaver and is set to Basic authentication and requires a username and password.

Prerequisites

SMService Web Service users are added to SAP NetWeaver UME.

Basic Authentication is set for this Web Service Provider in SAP NetWeaver Administrator.

Features

The following table shows the list of supported Web Service Methods for performance management data.

Web Service Method Name	Description
getAllContexts(long dbNameId)	Returns a list of all contexts for a given database id.
getAllScorecards(long dbNameId)	Returns a list of all scorecards for a given database id.
getAllPerspectives(long contextId, long dbNameId)	Returns a list of all perspectives for a given context id and database id.
getPerspectiveById(long perspectiveId)	Returns the perspective details for a given perspective id.
getObjectivesByPerspective(long perspectiveId)	Returns a list of objectives for a given perspective id.
getObjectiveById(long objectiveId)	Returns details of the objective for a given objective id
getObjectivesByInitiativeId(long initiativeId)	Returns a list of objectives for a given initiative id.
getAllKPIs(long contextId, long dbNameId)	Returns a list of all KPIs for a given context id and database id
getKPIsByObjective(long objectiveId)	Returns list of KPIs for a given objective id
getKPIsByIndexKPI(long id)	Returns a list of KPIs for a given Index KPI id
getKPIById(long kpiId)	Returns a KPI corresponding to a specific id
getKPIsByInitiativeId(long	Returns a list of KPIs for a given

Web Service Method Name	Description
`initiativeId)`	initiative id.
`getAllinitiatives(Long contextId, Long dbNameId)`	Returns list of all Initiatives for given context id and database id
`getInitiativeById(Long initiateveId)`	Returns details of an initiative for a given Initiative id.
`getTaskById(Long taskId)`	Returns details of the task for a given task id.
`getTasksByInitiativeId(Long initiativeId)`	Returns a list of tasks for a given initiative id.

The schema for all the response values is detailed in a WSDL document. All the methods that return lists of objects populate the minimum identifying information of the objects (which usually includes just ID, Name and Description). However, all the pertinent information is present when an object is retrieved by ID.

You can see a sample located at:

`http://<nwce_server>:<port>/strategy/tools/stratbrowser.jsp`

9.5 Providing Application Server Data for Other SAP Systems

You can use the *CubeService* Web Service API to extract data from the strategy management application to another SAP system.

The *CubeService* Web Service is deployed in SAP NetWeaver CE. You access the strategy management Web Service Description Language (WSDL) using the following URL in a browser window:

`http://<nwce_server>:<port>/strategy/CubeServiceService?wsdl=sap_wsdl`

The Web service authentication is handled by SAP NetWeaver and is set to Basic authentication and requires a username and password.

SAP Systems can obtain Application Server data including dimensions, members, hierarchies, measures and Time. For information, API for CubeService Web Service [Page 109].

Process

1. Add users of the *CubeService* Web Service to SAP NetWeaver UME.

   For information, see Adding CubeService Web Service Users to UME [Page 109].

2. Set Basic Authentication for the *CubeService* Web Service.

   For information, see Setting Basic Authentication for the CubeService Web Service [Page 109].

3. Use the API for the *CubeService* Web Service.

   For information, see API for CubeService Web Service [Page 109].

9.5.1 Adding CubeService Web Service Users to UME

Any user who will be using the *CubeService* Web Service must be added to SAP NetWeaver UME even if you are using SAP BusinessObjects Enterprise for user management. This is because basic authentication of the *CubeService* Web service is executed by SAP NetWeaver UME.

Prerequisites

You are an administrator of SAP NetWeaver.

Features

You must add Web Service users for *CubeService* to SAP NetWeaver UME. For information, see Adding Strategy Management Users [Page 33].

9.5.2 Setting Basic Authentication for the CubeService Web Service Provider

You must configure the *CubeService* Web Service provider to use *Basic Authentication*.

Prerequisites

Users planning to use the API for *CubeService* are known users in SAP NetWeaver UME, even if SAP BusinessObjects Enterprise is used for user management of strategy management.

You are the administrator of SAP NetWeaver.

Procedure

1. Start *Web Services Administration* in SAP NetWeaver using the following URL:

   `http://<nwce_server>:<port>/nwa/WSAdmin`

2. In the *Search By* drop-down list, select *Service Definition Name* and click *Go*.
3. From the list of services, select *jee-default_CubeService*.
4. Select the *Configuration* tab and then select the *Service Endpoints* tab.
5. From the *Service* list, select *CubeServiceService*.
6. Click *Edit*.
7. Click the *Security* tab.
8. Do one of the following:

   If using SAP NetWeaver UME, in the *HTTP Authentication* section, select *User ID/Password* and then click *Save.*

   If using SAP BusinessObjects authentication, in the *HTTP Authentication* section, make sure *User ID/Password* is not selected, and then click *Save.*

9.5.3 API for CubeService Web Service

The CubeService Web Service is deployed in SAP NetWeaver CE. You access the strategy management Web Service Description Language (WSDL) using the following URL in a browser window:

`http://<nwce_server>:<port>/strategy/CubeService?wsdl&mode=sap_wsdl`

The Web service authentication is handled by SAP NetWeaver and is set to Basic authentication and requires a username and password.

The CubeService Web service uses XMLA concepts of **discover** and **execute** to obtain information from the Application Server data.

Features

You can do the following using the Web Service Methods:

- Retrieve information from Application Server. In XMLA, the discover method is used to obtain metadata information about the OLAP cube. The strategy management Web service uses the Cubedef class to obtain metadata information.
- Execute queries/commands to Application Server using the executeQuery() method. Commands are written in DQL, which is the Application Server propriety language. The execute method allows applications to run provider-specific commands against XMLA data sources.

The following table shows the list of supported Web Service Methods for Application Server data.

Web Service Method Name	Description
`getModels()`	Returns a list of all Application Server models/cubes
`getDimensionNames(String cubename)`	Returns a list of all dimensions for the specified cubename
`getDimensions(String cubename)`	Returns a list of dimension objects for the specified cubename
`getDimensionDetails(String cubename)`	Returns a dimension object for specified dimension and cubename
`getMeasureNames(String cubename)`	Returns names of all measures for the specified cubename
`getMeasures(String cubename)`	Returns a list of all measure objects for the specified cubename
`getMeasureDetails(String cubename, String measurename)`	Returns the measure object for the specified measure name and cube.
`getDimensionHierarchiesNames(String cubename,String dimensionname)`	Returns hierarchy names for the specified dimension and

Web Service Method Name	Description
	cubename
`getDimensionHierarchiesCount(String cubename, String dimensionname)`	Returns the number of hierarchies for the specified dimension and cubename.
`getPeriod(String cubename)`	Returns the time period for the specified cube.
`getTimeEarliest(String cubename)`	Returns the earliest time for the specified cube.
`getTimeLatest(String cubename)`	Returns the latest time for specified cube.
`getDimensionLevels(String cubename, String dimensionname)`	Returns the levels for the specified dimension and cubename
`getDimMembersCount(String cubename, String dimname, String hierarchy, String node)`	Returns the number of members for the specified dimension and hierarchy at the specified node.
`getDimMembersList(String cubename, String dimname, String hierarchy, String node)`	Returns a list of member objects for the specified dimension and hierarchy at the specified node. The `hierarchy` is the hierarchy name. The default hierarchy is `default`.
`getDimMembers(String cubename, String dimname, String hierarchy, String node, int start, int count, String sort)`	Returns a list of member objects for the specified dimension and hierarchy and node at the specified start number. `Count` is the number of results that should be displayed. `Sort` specifies the sort order. It can be `default`, `ascending` or `descending`.
`getKPIStatus(String id, String asOfDate, TimeInfo timeinfo)`	Returns the status which includes the actual, gap, score, status, target, trend, and trend status information of a given KPI by id and TimeInfo (periodicity and asOfDate)
`getInitiativeStatus(String id, TimeInfo timeinfo)`	Returns the status of the given Initiative id and TimeInfo (periodicity and asOfDate)
`executePASQuery(String context, String command)`	Returns the output of the Application Server command.

In order to execute query statements on Application Server, use the following method:

`executeQuery(OLAPProperties, Command)`

The method returns the output as a RowSet object. The output result is NOT in cellset format. The webservice client would have to parse the result string to obtain cellset or other formats as needed.

`OLAPProperties` will include the datasource name and language attributes.

`Command` will include the type attribute which would be dql (or some other MDX language in future) and the Statement attribute which is the actual query statements in dql (or some other MDX language).

The `executeQuery()` is stateless and if multiple statements/commands are required to be executed, then the client should pass ALL the statements/commands in single SOAP packet with each statement enclosed in square brackets [].

For example:

<OLAPProperties>

<DataSourceInfo>`HFPBM`*</DataSourceInfo>*

<Locale>`en`*</Locale>*

</OLAPProperties>

<Command type="dql">

<Statement>

```
[set dimension customer hierarchy default][exhibit dimension customer
only just below default_customer]
```

</Statement>

<Command>

<RowSet>

<Row> `The output of the command....` *</Row>*

</RowSet>

9.6 Providing Strategy Management Data for Xcelsius Dashboards

You can make strategy management data available to users of Xcelsius Dashboards, allowing them to create Dashboards with the data.

The strategy management application provides the *CubeService* and *SMDataService* Web Services. The *CubeService* Web Service provides the ability to acquire Application Server data and the *SMDataService* Web Service provides the ability to acquire strategy management data. Xcelsius has its own WSDL parser to consume the Strategy Management web services WSDLs.

For information about the *CubeService* Web service, see Providing Application Server Data for Other Systems [Page 108]. For information about the *SMDataService*, see Providing Strategy Management Data for Other Systems [Page 102].

Prerequisites

You are running Xcelsius 2008 SP01 or higher.

Process

1. Add users of the *SMDataService* Web Service to SAP NetWeaver UME.

   For information, see Adding SMDataService Web Service Users to UME [Page 102].

2. Add users of the *CubeService* Web Service to SAP NetWeaver UME.

   For information, see Adding CubeService Web Service Users to UME [Page 109]

3. Set *Basic Authentication* for the *SMDataService* Web Service.

   For information, see Setting Basic Authentication for the SMDataService Web Service Provider [Page 103].

4. Set *Basic Authentication* for the *CubeService* Web Service.

   For information, see Setting Basic Authentication for the CubeService Web Service Provider [Page 109]

5. Export the WSDL files from SAP NetWeaver CE.

   For information, see Exporting the WSDL files from SAP NetWeaver CE [Page 113].

6. Prepare the WSDL files for importing into Xcelsius.

   For information, see Preparing the WSDL files for Importing into Xcelsius [Page 115].

7. Import the strategy management WSDLs into Xcelsius.

   For information, see Configuring Web Service Connections in Xcelsius [Page 115]

8. Map input and output values to the Xcelsius Excel spreadsheet.

   For information, see Mapping Input and Output Values to the Xcelsius Excel Spreadsheet [Page 116].

9. Configure Xcelsius Components to use data from the Excel Spreadsheet.

   For information, see Configuring Xcelsius Components to use Data from the Excel Spreadsheet [Page 117]

9.6.1 Exporting the WSDL files from SAP NetWeaver CE

Prerequisites

You are the administrator of SAP NetWeaver CE.

You have added users of the *SMDataService* and *CubeService* Web Service to SAP NetWeaver UME. You have set Basic Authentication for the *SMDataService* Web Service and *CubeService* Web Service.

Procedure

1. Start Web Services Administration in SAP NetWeaver using the following URL:

   `http:/<nwce_server>:<port>/nwa/WSAdmin`

2. In the *Search By* drop-down list, select *Service Definition Name* and click *Go*.

3. From the list of services, select *jee-default_SMDataService*.

4. Click the *WSDLs* tab.

5. Click the WSDL links for *SMDataService*. A new browser window appears with *SMDataService* WSDL data.

6. If you see a URL like this in the address bar of the browser:

   `http://server:port/strategy/SMDataServiceService?wsdl&model=ws_policy`

   Edit the URL in the browser address bar to remove the text **`&mode=ws_policy.`** This is because the URL must end in WSDL

   The URL should look like this:

   `http://server:port/strategy/SMDataServiceService?wsdl`

7. Refresh the browser after you edit the URL. The browser window displays the complete *SMDataService* WSDL data.

8. Click *File* →*Save As* and save the opened WSDL file using the .wsdl extension to a directory accessible by Xcelsius.

9. From the list of services, select *jee-default_CubeService*.

10. Click the *WSDLs* tab.

11. Click the WSDL links for *CubeService*.

    A window appears with *CubeService* WSDL data.

12. Click *File* →*Save As* and save the opened WSDL file using the .wsdl extension to a directory accessible by Xcelsius.

9.6.2 Preparing the WSDL files for Importing into Xcelsius

Before Xcelsius can load the *SMDataService* and *CubeService* WSDL files, you need to modify the files.

Prerequisites

You have exported the WSDL files from SAP NetWeaver CE.

Procedure

1. Open each WSDL file.
2. Search for the following text and remove all occurrences of the following:

   `parts="parameters"`

   If you cut and paste this line to perform a search, you may not get results due to different quotation mark formats. It is best to search by typing the text rather than cutting and pasting.

Once this is done, Xcelsius will be able to load the file.

9.6.3 Configuring Web Service Connections in Xcelsius

You must configure the Web Service connections to import the strategy management WSDLs to be used in Xcelsius.

Prerequisites

You have prepared the WSDL files for importing into Xcelsius.

Procedure

1. Start Xcelsius Data Manager and go to *Data* → *Connections*.
2. Click *Add*.
3. Click *Web Service Connections* and type a name for the connection.
4. In the *WSDL URL* text box, type the location of the exported *SMDataService* WSDL file in the local directory:

   `<drive>:\Xcelsius\SMDataService.wsdl`

5. Click *Import*.

   All the available web methods and parameters will be displayed in the *Data connection* window.

6. In the *WSDL URL* text box, type the location of the exported *CubeService* WSDL file in the local directory:

   `<drive>:\Xcelsius\CubeService.wsdl`

7. Click *Import*.

   All the available web methods and parameters will be displayed in the *Data connection* window.

9.6.4 Mapping Input and Output Values to an Excel Spreadsheet

You need to map the input values and output values to an Excel spreadsheet provided by Xcelsius. Then Xcelsius can read from the spreadsheet and display the results.

Prerequisites

You have imported the strategy management WSDL files in Xcelsius.

You are displaying the Data Manager.

Procedure

1. In Data Manager, select an *Input Value* and click the *Read From* icon.
2. In the *Select a Range* box, enter the cell location where the input parameter is set.
3. Select an *Output Value* and click the *Insert In* icon.
4. In the *Select a Range* box, map the return value to a set of rows in the Excel spreadsheet.

   Since data is dynamic, make sure to allocate adequate rows in the spreadsheet. Xcelsius doesn't have the option to set data selection dynamic.

If you use SAP BusinessObjects Enterprise authentication, you cannot test the Web services in the Web Service Navigator. There is no way to pass the token in WSNavigator which is out of strategy management control.

To use SAP BusinessObjects Enterprise authentication in Xcelsius, make a Web service call `getFPMSession()` first. The returned session and token then need to be included with other information to build up a SOAP Header. This SOAP header then needs to be included in every subsequent method call in the Advanced Tab of the Web Service Connection definition for a given method call.

The format of the request is as follows:

```
<soapenv:Header>
   <FpmSoapenv:Header >
       <serializedSession> Enter session value here
</serializedSession>
       <fpmLogonToken>Enter token value here</fpmLogonToken>
   </FpmSoapenv:Header>
</soapenv:Header>
```

For example :

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ssm="http://sap.com/cpm/sm/webservices/ssm/">
   <soapenv:Header>
      <FpmSoapHeader>
```

```
          <serializedSession>Enter session value
here</serializedSession>
          <fpmLogonToken>Enter token value here</fpmLogonToken>
      </FpmSoapHeader>
   </soapenv:Header>
   <soapenv:Body>
      <ssm:getAllContext>
         <dbNameId>1</dbNameId>
      </ssm:getAllContext>
   </soapenv:Body>
</soapenv:Envelope>
```

9.6.5 Mapping Xcelsius Components to the Excel Spreadsheet Data

You must create a mapping between each Xcelsius object and the cells in the Excel spreadsheet. The object will be loaded with data returned from Web Services.

It is recommended to create a scorecard template using Xcelsius 2008 components and test the data. Once the visualization is complete, you can remove the test data and map to the spreadsheet data source.

Prerequisites

You have mapped input and output values to the Excel spreadsheet.

Procedure

1. Double-click on the object to display the *Property* window.
2. In the *General* tab, click the icon next to the *Labels* field.
3. In the *Select a Range* box, specify a range in the spreadsheet where the labels are loaded.
4. Now you will specify where to insert the data. In the *Insertion Type* drop-down list, select *Row*.
5. Click the icon next to the *Source Data* field. In the *Select a Range* box, specify the range where all the data is available.
6. Click the icon next to the *Destination* field and specify the destination row.

For information about using Xcelsius, see the *Xcelsius 2008 Users Guide* on SAP Library. Go to http://help.sap.com →*SAP BusinessObjects* →*All Products* and search on `Xcelsius`.

9.7 Setting Up Single Sign-on Access to SAP BusinessObjects Enterprise Using Kerberos

For sites integrating with SAP BusinessObjects Enterprise, the strategy management application supports Kerberos for Single Sign-On user authentication to SAP BusinessObjects Enterprise.

Process

1. Perform additional updates on the AD domain controller for SAP NetWeaver.
2. Make sure you are running SAP BusinessObjects Enterprise as the user management system.
3. Set up Kerberos single sign-on.

Prerequisites

- To perform steps in SAP NetWeaver, you are an administrator of SAP NetWeaver.
- To perform steps in SAP BusinessObjects Enterprise, you are the administrator of SAP BusinessObjects Enterprise.
- You are running SAP BusinessObjects Enterprise XI r3.1 SP3 or higher.
- You are running SAP NetWeaver CE 7.2.
- To use Kerberos SSO, you have configured Windows AD with SAP NetWeaver., and you have verified that it is running correctly. For information about configuring Windows AD, see *the SAP BusinessObjects Administrator's Guide* on the Help Portal at `http://help.sap.com/epm`. Then click *All Products*. Filter on *BusinessObjects Enterprise* and *BusinessObjects XI 3.1*. Then click the PDF link for *the BusinessObjects Administrator's Guide.*

Procedure

Performing Additional Updates on the AD Domain Controller for SAP NetWeaver

Add a *ServicePrincipleName* (SPN) to the responsible SAP BusinessObjects Enterprise service account.

Add an SPN for every alias the browser might use to run the strategy management application. This includes the fully qualified name, the computer name, and the IP address associated with SAP NetWeaver.

Use this command to add the SPN:

```
setspn -A HTTP/<alias><service account>
```

Use this command to list the SPN associated with a service account

```
setspn –L
```

For more information, see *Configuring Third-Party->Authentication Using AD* authentication in the *SAP BusinessObjects Enterprise Administrator's Guide*.

Setting Up SAP BusinessObjects Enterprise as the User Management System

1. Log into the Strategy Management Administrator application using this URL:

   ```
   http://<nwce_server>:<port>/strategy/administration
   ```

   and click *Set System Defaults* in the *Administration* section.

   Make sure the users are synchronized.
2. Start the SAP NetWeaver Administrator and log on as administrator with the global password you provided when you installed NetWeaver CE.
3. Click *Configuration Management*.
4. Click the *Infrastructure* tab.
5. Select *Java System Properties*.
6. In the *Templates* section, select the SAP NetWeaver template.
7. Click the *Applications* tab.

8. In the *Name* column, type strategy and press *Enter* to list the strategy applications.
9. Select the name *xapps~cpm~sm~strategymanagement*.
10. In the *Extended Details* section, modify the following properties if they are not already set:

    AuthType: Specify a value of BOE.

    CMSTechnicalUser: Specify the administrator user value of the SAP BusinessObjects Enterprise technical user

    CMSTechnicalUser: Specify the administrator user value of the SAP BusinessObjects Enterprise technical user password
11. Log out of SAP NetWeaver Administrator.

Setting Up Kerberos Single Sign-On

1. Log into the Strategy Management Administrator application using this URL:

```
http://<nwce_server>:<port>/strategy/administration
```

   and click *Set System Defaults* in the *Administration* section.

   Make sure the users are synchronized.
2. Log back into the SAP NetWeaver Administrator and navigate to the properties configuration. In the *Extended Details* section, modify the following properties according to the SSO environment:

   com.sap.enterprise.poafhelper.vintela.enabled: Specify a value of true.

   idm.realm: Specify the Kerberos service principal to use. This is a name of the form HTTP/fully-qualified-host i.e. HTTP/example.vintela.com. If you do not set this, the default setting is the server hostname and the idm.realm property above.

   idm.princ: Specify the Kerberos service principal to use. This is a name of the form HTTP/fully-qualified-host i.e. HTTP/example.vintela.com. If you do not set this, the default setting is the server hostname and the idm.realm property above.

   idm.kdc: Specify the KDC against which secondary credentials are validated. This can be used for BASIC fallback, or credential delegation. By default the KDC is discovered automatically and this parameter should only be used if automatic discovery fails, or if you want to use a different KDC than the one discovered automatically.

   idm.keytab: Specify the file containing the keytab that Kerberos uses for user-to-service authentication.

   Note

   Usage of both *idm.keytab* and *com.wedgetail.idm.sso.password* at the same time is unsupported. You must use only one property.

   idm.allowUnsecured: Specifies whether to allow authentication over an unsecured channel. It is strongly recommended that you set this to false unless there is a very low risk of an attacker accessing the communication channel between the client and server. The default setting is false.

   idm.logger.name: Specify the unique name for this logger.

   idm.logger.props: Configures logging from the specified file.
3. Save the configuration changes.
4. Restart the SAP NetWeaver CE server using the MMC.

9.8 Providing Strategy Management Data for Voyager

You can allow users of Voyager to use strategy management application data for ad hoc analysis in Voyager. You make the strategy management data available using the Strategy Management ODBO Provider.

The strategy management application allows you to communicate the strategy, communicate targets, monitor, execute, and improve execution by implementing initiatives. You may need to extend this analysis to provide power users with the ability to perform queries and analysis of strategy management information. By accessing strategy management data in Voyager, users of Voyager can gain deeper insight and understanding about the way in which strategy is being executed.

Prerequisites

SAP BusinessObjects Enterprise XI 3.1 Fixpack 1.3 or SP02 is installed on a Windows server. The server can be installed on either the same machine with Strategy Management and SAP NetWeaver CE or a separate Windows server (recommended). For information, see the *SAP BusinessObjects XI 3.1 Web Application Deployment Guide for Windows* on SAP Service Marketplace.

To log into SAP BusinessObjects Enterprise using Single Sign-On, you have configured the system using Kerebos, and you are running SAP NetWeaver CE 7.2. For more information, see *Setting Up Single Sign-On Access to SAP BusinessObjects Enterprise Using Kerebos.*

The SAP BusinessObjects Voyager server is installed and configured on the SAP BusinessObjects XI server. For information, see the SAP BusinessObjects Enterprise Administrator's Guide located in the BusinessObjects section of the SAP Library.

A Voyager client and workspace is created in the SAP BusinessObjects InfoView application.

Voyager users and system groups are added to SAP BusinessObjects XI Central Management Console. You might want to create a separate group in SAP BusinessObjects X and add all Voyager users and system groups will be working with strategy management.

SAP BusinessObjects Enterprise is set up as the user management system for the strategy management application. This includes the following:

- The `StrategyGroup` Java System Property for the strategy management application in SAP NetWeaver has the value `strategy`.
- The `AuthType, DirectoryServiceType, CMSServer, CMSAuth, CMSTecnicalUser`, and the `CMSTechnicalUserPW` Java System Properties for the strategy management application are configured to use SAP BusinessObjects Enterprise as the user management system.

For information, see the *Configuring the Application and Setting Up the User Management System* section in the *Installation Guide for SAP BusinessObjects Strategy Management* located on SAP Service Marketplace at http://service.sap.com/instguidescpm-stm →*SAP BusinessObjects Strategy Management* ↵.

Process

1. Add the Voyager users and system groups in SAP BusinessObjects Central Management Console to the `strategy` group to identify them as strategy management users.

   For information, see Adding Strategy Management Users [Page 33].

2. Refresh the user authorization cache in the strategy management Administrator to make the Voyager users known to the strategy management application.

   The Voyager users are now strategy management users.

   For information, see Refreshing the Authorization Cache [Page 35].

3. In the Administrator, assign the new strategy management users to an application group and assign the application group to a context.

4. Install and register `SSMProvider.dll` and `SSMProviderEr.dll`.

   For information, see Installing the Strategy Management ODBO Provider [Page 134].

5. Configure the Voyager Connection Creation user interface.

   For information, see Configuring the Voyager Connection Creation User Interface [Page 123].

6. Create a Voyager Connection.

   For information, see Creating a Voyager Connection [Page 123].

7. Assign Voyager users and groups to the Voyager connection.

   This step is necessary only if you want to authenticate using Single Sign On (SSO).

   For information, see Assigning Voyager Users and Groups to the Voyager Connection [Page 124].

8. Create a Voyager Workspace for the strategy management application.

   For information, see Creating a Voyager Workspace [Page 125].

9.8.1 Installing the Strategy Management ODBO Provider

During the Interactive Publisher installation, the `\Program files (x86)\SAP BusinessObjects\Strategy Management\InternetPub\ODBOProvider` directory is created. It contains the two DLLs needed to run the Strategy Management ODBO Provider, and two `bat` files to register and unregister the DLLs.

You need to install the Strategy Management ODBO Provider if you want to display strategy management data in Voyager, WebI, or Crystal Reports. If you use more than one of these systems, you only need to install and register the DLLs once.

Prerequisites

SAP BusinessObjects Enterprise XI 3.1 Fixpack 1.3 or SP02 is installed on a Windows server. The server can be installed on either the same machine with Strategy Management and SAP NetWeaver CE or a separate Windows server (recommended). For information, see the *SAP BusinessObjects XI 3.1 Web Application Deployment Guide for Windows* on SAP Service Marketplace.

Procedure

1. In the SAP BusinessObjects XI Central Configuration Manager, stop the multidimensional analysis service (MDAS).

   If you have a Voyager implementation or a WebI implementation, you must stop the service.

   If you have a Crystal Reports implementation, you only need to stop the service if you are using SAP BusinessObjects XI to access data via the Universe. If you are not accessing data via the OLAP Universe, you do not need SAP BusinessObjects XI and therefore do not need to stop services.

2. Copy the entire `\ODBOProvider` directory from the Windows server where Interactive Publisher is installed to any directory on the SAP BusinessObjects XI server.

3. Run the `SSMProviderReg.bat` file to register the DLLs.

4. If you are using Voyager or WebI, add the Strategy Management ODBO Provider to the Data Driver by entering this registry setting:

   ```
   [HKEY_LOCAL_MACHINE\SOFTWARE\Business Objects\Suite
   12.0\MDA\ODBO]

   "SupportedProviders"="SSMProvider.1"
   ```

   If you are using Crystal Reports, add the Strategy Management ODBO Provider to the Data Driver by entering this registry setting:

   ```
   [HKEY_LOCAL_MACHINE\SOFTWARE\Business Objects\Suite 12.0\OLAP
   Intelligence\OCCA(o)\SOFA\ODBO]

   "SupportedProviders"="SSMProvider.1"
   ```

5. In the SAP BusinessObjects XI Central Configuration Manager, restart the multidimensional analysis service (MDAS).

   If you have a Voyager implementation or a WebI implementation, you must start the service.

   If you have a Crystal Reports implementation, you only need to start the service if you are using SAP BusinessObjects XI to access data via the Universe. If you are not accessing data via the OLAP Universe, you do not need SAP BusinessObjects XI and therefore do not need to start services.

If you ever need to unregister the files, execute the batch job to do the unregistration. If you ever need to upgrade these DLLs, you would have to unregister the existing DLLs, copy over the new ones, and then register the DLLs.

9.8.2 Configuring the Voyager Connection Creation User Interface

Prerequisites

If you are running SAP BusinessObjects Enterprise XI 3.1 Fixpack 1.3, follow the steps in this topic.

If you are running SAP BusinessObjects Enterprise XI 3.1 SP02, you can skip this topic.

You have installed the strategy management ODBO Provider.

Procedure

1. Find the `VoyagerClient.jar` file which is located in this directory for a default installation:

   ```
   <drive>:\Program Files\Business
   Objects\Tomcat55\webapps\VoyagerClient\WEB-INF\lib
   ```

2. Find the `providerConfig.xml` file located in the following path within the JAR file:

   ```
   com/businessobjects/multidimensional/cmc/connection/model/provi
   der
   ```

3. To add an additional provider, add the new ODBO provider name after *EPMMDX.4* in the ‘name’ attribute of the final ‘provider’ XML element. That is:

   ```
   <?xml version="1.0"?>

   <config>

   <provider name="EPMMDX.4,SSMProvider.1"
   type="com.businessobjects.multidimensional.cmc.connection.model
   .provider.microsoft.EPMMDXProvider"
   builder="com.businessobjects.multidimensional.cmc.connection.mo
   del.provider.microsoft.MSASPropertyWidgetBuilder"/>

   </config>
   ```

9.8.3 Creating a Voyager Connection

Prerequisites

You have configured the Voyager Connection Creation user interface.

Procedure

1. Start the SAP BusinessObjects Enterprise Central Management Console and log in.

2. Stop services in the SAP BusinessObjects XI Central Configuration Manager.

   The CMS server and multidimensional analysis service should be enabled but all others can be disabled. This drastically reduces the memory footprint.

3. Navigate to the *Voyager Connections* tab.

4. In the *Description* text box, enter a description for this connection

5. In the *Provider* text box, choose *Strategy Management* as the ODBO Provider.

6. In the *Server* text box, enter the IP address and port of the server where strategy management is deployed on SAP NetWeaver.

7. Click the *Connect* button and log into the strategy management application as the administrator.

8. In the *Strategy Management* folder (catalog), select a strategy management context to associate with the Voyager connection, and click *Select*.

   You can only select performance management cubes in the *Strategy Management* folder. Performance management cubes contain measures that are used as the basis of KPIs.

   If you want to view cube data such as dimensions, attributes, and measures in the Application Server model, select the cube in the *Application Server* folder.

9. From the *Authentication* drop-down list, select *Prompt* or *SSO* or *User-Specified*.

   If you want to authenticate using Single Sign On, make sure to choose *SSO*.

10. Click *Save*.

9.8.4 Assigning Voyager Users and Groups to the Voyager Connection

If you want to authenticate between the strategy management application and Voyager using Single Sign On (SSO), you must set up the Voyager users to have full access to the connection. This topic describes one method of setting up user access to the Voyager connection. For information about all methods of setting up users and access levels in SAP BusinessObjects, see the *SAP BusinessObjects Enterprise Administrator's Guide* on the SAP Library at http://help.sap.com.

If you want to authenticate using a method other than SSO, you can skip this topic.

Prerequisites

You have created a Voyager connection and chosen *SSO* as the authentication method.

Voyager users area added to the `strategy` group in SAP BusinessObjects Central Management Console to identify them as strategy management users.

Procedure

1. Start the SAP BusinessObjects Enterprise Central Management Console and log in.

2. Navigate to the *Voyager Connections* tab.

3. Choose *Manage* →*Top-Level Security*.

   The *User Security* window appears.

4. Click *Add Principals*.

5. From the *Available users/groups* list, select the Voyager users and groups who will be able to log into strategy management with SSO.

6. Click *Add and Assign Security*.

7. Allow the Voyager group to have *Full Access*, then click *Apply* and click *OK*.

9.8.5 Creating a Voyager Workspace

Prerequisites

You have created a Voyager connection.

Procedure

1. Start SAP BusinessObjects Enterprise InfoView and log in with the appropriate username and password.
2. Create a new Voyager Workspace by clicking *Document List* →*New* →*Voyager Workspace*.
3. Your Voyager connections will be listed in a *Choose Connection* window. Select the Voyager connection you just created and click *OK*.
4. Drag the metadata on the left side to the appropriate positions of Crosstab, or use others data view types such as 3D Clustered Columns, Stacked Bar, etc.

   The Measure dimension contains all the measures. The strategy dimension contains two hierarchies, one for the perspectives, objectives, KPIs, and initiatives and the other for perspectives, KPIs, and initiatives.

Now you are ready to work with strategy management data in Voyager. For information, see the *BusinessObjects Voyager User's Guide* located on the Help Portal at http://help.sap.com →*SAP Business Objects* →*All Products*. Then search on *Voyager* to see the documentation for Voyager.

9 9.9 Providing Strategy Management Data for WebI

You can allow users of WebI to use strategy management application data for ad hoc analysis in WebI. You make the strategy management data available using the Strategy Management ODBO Provider.

The strategy management application allows you to communicate the strategy, communicate targets, monitor, execute, and improve execution by implementing initiatives. You may need to extend this analysis to provide power users with the ability to perform queries and analysis of strategy management information. By accessing strategy management data in WebI, users of WebI can build reports about the strategy and share them across the organization.

Prerequisites

SAP BusinessObjects Enterprise XI 3.1 Fixpack 1.3 or SP02 is installed on a Windows server. The server can be installed on either the same machine with Strategy Management and SAP NetWeaver CE or a separate Windows server (recommended). For information, see the *SAP BusinessObjects XI 3.1 Web Application Deployment Guide for Windows* on SAP Service Marketplace.

The SAP BusinessObjects WebI server is installed and configured on the SAP BusinessObjects XI Windows server. For information, see the *SAP BusinessObjects Enterprise Administrator's Guide* located in the BusinessObjects section of the SAP Library.

WebI users and system groups are added to SAP BusinessObjects XI Central Management Console. You might want to create a separate group in SAP BusinessObjects X and add all WebI users and system groups will be working with strategy management.

To log into SAP BusinessObjects Enterprise using Single Sign-On, you have configured the system using Kerebos, and you are running SAP NetWeaver CE 7.2. For more information, see *Setting Up Single Sign-On Access to SAP BusinessObjects Enterprise Using Kerebos.*

SAP BusinessObjects Enterprise is set up as the user management system for the strategy management application. This includes the following:

- The `StrategyGroup` Java System Property for the strategy management application in SAP NetWeaver has the value `strategy`.
- The `AuthType, DirectoryServiceType, CMSServer, CMSAuth, CMSTecnicalUser`, and the `CMSTechnicalUserPW` Java System Properties for the strategy management application are configured to use SAP BusinessObjects Enterprise as the user management system.

For information, see the *Configuring the Application and Setting Up the User Management System* section in the *Installation Guide for SAP BusinessObjects Strategy Management* located on SAP Service Marketplace at http://service.sap.com/instguidescpm-stm →*SAP BusinessObjects Strategy Management* ↵.

Process

1. Add the WebI users and system groups in SAP BusinessObjects Central Management Console to the `strategy` group to identify them as strategy management users.

   For information, see Adding Strategy Management Users [Page 33].

2. Refresh the user authorization cache in the strategy management Administrator to make the WebI users known to the strategy management application.

   The WebI users are now strategy management users.

   For information, see Refreshing the Authorization Cache [Page 35].

3. In the Administrator, assign the new strategy management users to an application group and assign the application group to a context.

4. Install and register `SSMProvider.dll` and `SSMProviderEr.dll`.

   For information, see Installing the Strategy Management ODBO Provider [Page 134].

5. Configure the Universe Designer User Interface.

   For information, see Configuring the Universe Designer User Interface [Page 128].

6. Create the universe.

   For information, see Creating the Universe [Page 129].

7. Assign WebI users and groups to the WebI connection.

   For information, see Assigning WebI Users and Groups to the WebI Connection [External].

This step is necessary only if you want to authenticate using Single Sign On (SSO).

8. Export the universe.

   For information, see Exporting the Universe [Page 130].

9. Create a WebI document and generate a report.

   For information, see Creating a WebI Document and Generating a Report [Page 130].

9.9.1 Installing the Strategy Management ODBO Provider

During the Interactive Publisher installation, the `\Program files (x86)\SAP BusinessObjects\Strategy Management\InternetPub\ODBOProvider` directory is created. It contains the two DLLs needed to run the Strategy Management ODBO Provider, and two `bat` files to register and unregister the DLLs.

You need to install the Strategy Management ODBO Provider if you want to display strategy management data in Voyager, WebI, or Crystal Reports. If you use more than one of these systems, you only need to install and register the DLLs once.

Prerequisites

SAP BusinessObjects Enterprise XI 3.1 Fixpack 1.3 or SP02 is installed on a Windows server. The server can be installed on either the same machine with Strategy Management and SAP NetWeaver CE or a separate Windows server (recommended). For information, see the *SAP BusinessObjects XI 3.1 Web Application Deployment Guide for Windows* on SAP Service Marketplace.

Procedure

1. In the SAP BusinessObjects XI Central Configuration Manager, stop the multidimensional analysis service (MDAS).

   If you have a Voyager implementation or a WebI implementation, you must stop the service.

   If you have a Crystal Reports implementation, you only need to stop the service if you are using SAP BusinessObjects XI to access data via the Universe. If you are not accessing data via the OLAP Universe, you do not need SAP BusinessObjects XI and therefore do not need to stop services.

2. Copy the entire `\ODBOProvider` directory from the Windows server where Interactive Publisher is installed to any directory on the SAP BusinessObjects XI server.

3. Run the `SSMProviderReg.bat` file to register the DLLs.

4. If you are using Voyager or WebI, add the Strategy Management ODBO Provider to the Data Driver by entering this registry setting:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Business Objects\Suite
12.0\MDA\ODBO]

"SupportedProviders"="SSMProvider.1"
```

If you are using Crystal Reports, add the Strategy Management ODBO Provider to the Data Driver by entering this registry setting:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Business Objects\Suite 12.0\OLAP
Intelligence\OCCA(o)\SOFA\ODBO]

"SupportedProviders"="SSMProvider.1"
```

5. In the SAP BusinessObjects XI Central Configuration Manager, restart the multidimensional analysis service (MDAS).

   If you have a Voyager implementation or a WebI implementation, you must start the service.

   If you have a Crystal Reports implementation, you only need to start the service if you are using SAP BusinessObjects XI to access data via the Universe. If you are not accessing data via the OLAP Universe, you do not need SAP BusinessObjects XI and therefore do not need to start services.

If you ever need to unregister the files, execute the batch job to do the unregistration. If you ever need to upgrade these DLLs, you would have to unregister the existing DLLs, copy over the new ones, and then register the DLLs.

9.9.2 Configuring the Universe Designer User Interface

The connections available when creating a universe and when running Web Intelligence reports are determined by a series of configuration files. Depending on the version of SAP BusinessObjects XI 3.1 you are running, you may need to edit these configuration files everywhere the Universe Designer or a Web Intelligence Reports server is deployed.

Prerequisites

If you are running a version of SAP BusinessObjects Enterprise XI 3.1 lower than SP02, follow the steps in this topic.

If you are running SAP BusinessObjects Enterprise XI 3.1 SP02 or higher, you can skip this topic.

You have installed the strategy management ODBO Provider.

Procedure

1. To add a new ODBO connection, open the file `oledb_olap.sbo` located in the :<*drive*>`:\Program Files (x86)\Business Objects\BusinessObjects Enterprise 12.0\win32_x86\dataAccess \connectionServer\sqlsrv_as` folder.

2. Add the following <*database*> block if it is not already there:

<DataBase Active="Yes" Name="Strategy Management">

<Parameter Name="Family">`SAP BusinessObjects`*</Parameter>*

<Parameter Name="Extensions">`oledb_olap`*</Parameter>*

<Parameter Name="SQL External File">`sqlsrv_as`*</Parameter>*

<Parameter Name="SQL Parameter File">`sqlsrv_as`*</Parameter>*

<Parameter Name="Description File">`sqlsrv_as`*</Parameter>*

<Parameter Name="MSOlap CLSID">`SSMProvider.1`*</Parameter>*

3. Save the file.
4. Restart SAP BusinessObjects Enterprise.

9.9.3 Creating the Universe

A universe is a mapping that lets you determine how you want to see your data. A universe allows you to map labels to a data source.

Prerequisites

You are the administrator of SAP BusinessObjects Enterprise.

You have configured the Universe Designer user interface. For information, see Configuring the Universe Designer User Interface [Page 128].

Procedure

1. Start BusinessObjects Enterprise, open Designer, and log in as the administrator.
2. Click the *Create Universe* button on the toolbar to launch the wizard for creating a universe. If this is your first time running Designer, the wizard appears automatically.
3. In the *Welcome Screen*, click *Begin*.
4. In the *Enter the universe name* box, specify the name for the universe.
5. Click *New* to create a new database connection to the strategy management Provider.
6. In the first *Define a new connection* window, click *Next*.
7. In the *Define a new connection* window for database middleware selection, do the following:
    1. In the hierarchical list, select *Strategy Management*.

        Strategy Management appears because you defined this value in the `oledb_olap.sdo` file.

    2. In the *Connection Type* drop-down list, specify whether to make this a secured connection.
    3. In the *Connection Name* box, specify a connection a name.

4. Then click *Next*.

8. In the *Define a new connection* window for login parameters, do the following:

    1. In the *Authentication Mode* drop-down list, select the method of authentication such as single sign or user specified username and password.

    2. Specify the username, password, and server for the connection, and then click *Next.*

9. In the *Define a new connection* window for catalog/database parameters, display the items in the *SSMCatalog* folder, select the performance management context/cube associated with the connection, and then click *Next*.

    You can only select performance management cubes in the *SSMCatalog* folder. Performance management cubes contain measures that are used as the basis of KPIs.

    If you want to view cube data such as dimensions, attributes, and measures in the Application Server model, select the cube in the *PASCatalog* folder.

10. In the *Define a new connection* window for configuration parameters, use the default settings and click *Finish*.

11. In the *Define the Universe Parameters* wizard, click *Next*.

12. In the final wizard screen, click *Finish*.

13. Click *Save*.

9.9.4 Exporting the Universe

Prerequisites

You have created the universe.

Procedure

1. In Designer, choose *File* → *Export*.

2. Choose the appropriate domain and click *OK* to finish the export.

9.9.5 Creating a WebI Document and Generating a Report

Prerequisites

You have exported the universe.

Procedure

1. Start BusinessObjects InfoView and log in with appropriate user name/password.

2. Create a Web Intelligence Document by choosing *Document List* → *New* → *WebIntelligence Document*.

3. Associate the document with the universe you just created by selecting the universe. The WebI main window appears.

4. From the *Data* tab, drag one ore more item(s) from the hierarchical list to the *Result Objects* and *Query Filters* panels as appropriate.

5. Click *Run Query* to generate the report.

6. Use the Data, Template, and Map tabs and toolbar buttons to edit the report as appropriate.

9.10 Providing Strategy Management Data for Crystal Reports

You can allow users of Crystal Reports to use strategy management application data in Crystal Reports. You make the strategy management data available using the Strategy Management ODBO Provider or using Query As A Web Service (QaaWS).

Prerequisites

- SAP BusinessObjects XI 3.1 SP02 or higher is installed on a Windows server if you want to access data via the OLAP Universe. The server can be installed on the same machine with Strategy Management and SAP NetWeaver CE or a separate Windows server (recommended). For information, see the *SAP BusinessObjects Enterprise XI 3.1 Web Application Deployment Guide for Windows* on SAP Library.

- If you do not want to access data via the OLAP Universe, you do not need to have SAP BusinessObjects XI installed.

- You are running SAP NetWeaver CE 7.2 SP03.

- To log into SAP BusinessObjects Enterprise using Single Sign-On, you have configured the system using Kerebos, and you are running SAP NetWeaver CE 7.2. For more information, see *Setting Up Single Sign-On Access to SAP BusinessObjects Enterprise Using Kerebos.*

- Crystal Reports 2008 is installed and configured. The Report Designer/Report Engine is installed on the server. For information, see the *Installing Crystal Reports 2008* Guide located on the SAP Library.

  To access the SAP Library, go to http://help.sap.com →*SAP Business Objects* →*All Products* and search on *BusinessObjects Enterprise* and *Crystal Reports* respectively.

- To enable secured WSDL and assign the WSDL_Viewer role to strategy management users, see the SAP Library for SAP NetWeaver Help at *http://help.sap.com*. See the topic *Configuring WSDL Security*.

Features

You can use strategy management data in Crystal Reports using either of these methods:

- Use the Strategy Management ODBO Provider.

  For information, see Providing Data Using the Strategy Management ODBO Provider [Page 133].

- Use Query As A Web Service (QaaWS).

  For information, see Providing Data Using Query As A Web Service [Page 132].

9.10.1 Providing Data Using Query As A Web Service

Process

1. Create a QaaWS from a Universe.
2. Create a New Query.
3. Create a Report Using QaaWS for Crystal Reports.

9.10.1.1 Creating a QaaWS from a Universe

Prerequisites

You have created a Universe.

For information, see Creating the Universe [Page 129].

Procedure

1. Open the *Query As A Web Service* (QaaWS) application.
2. If this is the first time you are using Qaaws, create a new host by clicking the *Host* button in the *Select your credentials* dialog box.
    1. In the *Manage Hosts* dialog box, click *Add*.
    2. Specify a name for the host, the URL where it is located, IP address where CMS is located, and the username.
    3. From the *Authentication* drop-down list, select the appropriate authentication type, and then click *OK*.
3. In the *Select your credentials* dialog box. specify the system, username and password to log in.

9.10.1.2 Creating a New Query

Prerequisites

You have created a QaaWS from the Universe.

Procedure

1. In the *Query as a Web Service* window, choose *Query* →*New* →*Query* .
2. Enter the *Web Service Name* and click *Next*.
3. Select a Universe on which to build the query and click *Next*.
4. Build the query by dragging objects from the hierarchical list to the *Result Objects* and *Filter Objects* section and click *Next*).

    You will see a preview of the query results.
5. Click *Publish*.

The Query is created in the *Query as a Web Service* window and there is a URL for it.

9.10.1.3 Creating a Report Using QaaWS for Crystal Reports

Prerequisites

You have created a query using Query As A Web Service.

You are running Crystal Reports.

Procedure

1. In Crystal Reports, choose *File* →*New* →*Standard Report*
2. In the *Standard Report Creation Wizard* window, choose *XML and Web Services* and then select *Make New Connection*.
3. In the *XML and Web Services* main window, select *Use Web Service Data Source* and click *Next*.
4. In the next window, select *Use HTTP(s) WSDL*.
5. In the *HTTP(S) WSDL URL* box, enter the WSDL URL you created in QaaWS, and then click *Next*.
6. In the next window, provide a valid user ID and password or leave it blank if the user ID and password are stored in the Universe. Then click *Next*.
7. In the next window, from the *Service* drop-down list, select the service name. This is the same as the Web Service name you specified when creating a query.
8. In the *Port* drop-down list, select *QueryAsAServiceSoap*.
9. In the *Method* drop-down list, select *runQueryAsAService*. Then click *Finish*.

   You see the new connection.
10. Select the table *runQueryAsAServiceResponse/table/row* and click the right arrow (>) button to add it to the selected table panel. Then click *Next*.
11. In the *Enter Values* dialog box, enter the administrator login for logging into SAP BusinessObjects Enterprise (and the Universe) in the text box for *parameters.runQueryAsAService.login*.
12. Enter the password in the text box for *parameters.runQueryAsAService.password*.
13. Click *OK*.
14. (Optional) Group the information on the report, or click *Next* or *Finish*.
15. (Optional) Include a chart in the report, or click *Next* or *Finish*.
16. (Optional) Select a subset of information to display, or click *Next* or *Finish*.
17. (Optional) Select a template for the report and click *Finish*.

9.10.2 Providing Data Using the Strategy Management ODBO Provider

The strategy management ODBO Provider gives you access to the following:

- The AS Adapter allows access to the measures (based on attributes and dimensions) in the Application Server model.

  You can also see hierarchies, dimension members, and other aspects of dimensions.

- The SM Adapter allows access to the strategy dimension, which represents the strategy management dimensions *Scorecard* and *Initiative*. Scorecard detail not relating to the KPI such as comments are not presented.

  The *Scorecard* dimension presents the KPI measure values for Actual, Target, Score, Status, Trend, Trend Status, and Gap for perspectives, objectives, and KPIs. The *Initiative* dimension presents the KPI status measure for initiatives. Other initiative details such as actual, budget, target budget, and comments are not presented.

To retrieve additional information about scorecards, initiatives, and comments, you must use the strategy management Web services.

Process

1. Install and register `SSMProvider.dll` and `SSMProviderEr.dll`.

   For information, see Installing the Strategy Management ODBO Provider [Page 134].

2. Create an OLAP connection in Crystal Reports for strategy management. For information, see Creating an OLAP Connection and Setting up a Report [Page 135].

9.10.2.1 Installing the Strategy Management ODBO Provider

During the Interactive Publisher installation, the `\Program files (x86)\SAP BusinessObjects\Strategy Management\InternetPub\ODBOProvider` directory is created. It contains the two DLLs needed to run the Strategy Management ODBO Provider, and two `bat` files to register and unregister the DLLs.

You need to install the Strategy Management ODBO Provider if you want to display strategy management data in Voyager, WebI, or Crystal Reports. If you use more than one of these systems, you only need to install and register the DLLs once.

Prerequisites

SAP BusinessObjects Enterprise XI 3.1 Fixpack 1.3 or SP02 is installed on a Windows server. The server can be installed on either the same machine with Strategy Management and SAP NetWeaver CE or a separate Windows server (recommended). For information, see the *SAP BusinessObjects XI 3.1 Web Application Deployment Guide for Windows* on SAP Service Marketplace.

Procedure

1. In the SAP BusinessObjects XI Central Configuration Manager, stop the multidimensional analysis service (MDAS).

   If you have a Voyager implementation or a WebI implementation, you must stop the service.

If you have a Crystal Reports implementation, you only need to stop the service if you are using SAP BusinessObjects XI to access data via the Universe. If you are not accessing data via the OLAP Universe, you do not need SAP BusinessObjects XI and therefore do not need to stop services.

2. Copy the entire `\ODBOProvider` directory from the Windows server where Interactive Publisher is installed to any directory on the SAP BusinessObjects XI server.

3. Run the `SSMProviderReg.bat` file to register the DLLs.

4. If you are using Voyager or WebI, add the Strategy Management ODBO Provider to the Data Driver by entering this registry setting:

   ```
   [HKEY_LOCAL_MACHINE\SOFTWARE\Business Objects\Suite
   12.0\MDA\ODBO]

   "SupportedProviders"="SSMProvider.1"
   ```

   If you are using Crystal Reports, add the Strategy Management ODBO Provider to the Data Driver by entering this registry setting:

   ```
   [HKEY_LOCAL_MACHINE\SOFTWARE\Business Objects\Suite 12.0\OLAP
   Intelligence\OCCA(o)\SOFA\ODBO]

   "SupportedProviders"="SSMProvider.1"
   ```

5. In the SAP BusinessObjects XI Central Configuration Manager, restart the multidimensional analysis service (MDAS).

   If you have a Voyager implementation or a WebI implementation, you must start the service.

   If you have a Crystal Reports implementation, you only need to start the service if you are using SAP BusinessObjects XI to access data via the Universe. If you are not accessing data via the OLAP Universe, you do not need SAP BusinessObjects XI and therefore do not need to start services.

If you ever need to unregister the files, execute the batch job to do the unregistration. If you ever need to upgrade these DLLs, you would have to unregister the existing DLLs, copy over the new ones, and then register the DLLs.

9.10.2.2 Creating an OLAP Connection and Setting up a Report

Prerequisites

You have installed the strategy management ODBO Provider.

Procedure

1. Start Crystal Reports and choose *File* → *New* → *OLAP Cube Report*.

2. In the *OLAP Data* dialog box, click *Select Cube*.

3. In the *OLAP Connection Browser* dialog box, click *Add*.

4. In the *Connection Properties* dialog box, make sure that *Strategy Management* already appears in the *Server Type* field.

5. In the *Caption* text box, enter a name for the connection.

6. Click the *OLAP Server* option and specify the OLAP Server's <*Server Name:port*>, <*User Name*>, and <*Password*>, and then click *OK*.

7. In the *OLAP Connection Browser* dialog box, select the context from the *SM Catalog* and click *Open*.

   You can only select performance management cubes in the *SM Catalog*. Performance management cubes contain measures that are used as the basis of KPIs. If you want to view cube data such as dimensions, attributes, and measures in the Application Server model, select the cube in the *AS Catalog*.

   The OLAP Data window appears with the name of the selected cube, the provider name, and the server IP and port.

8. Click *Next* to specify the rows and columns.

9. In the *Rows/Columns* dialog box, add the dimensions to the appropriate *Rows* and *Columns* lists. Use the *Select Row Members* button and *Select Column Members* button to display specific members of the dimensions.

10. Click *Next* to specify the slice and page for the report.

11. In the *Slice/Page* dialog box, specify what to do with the dimensions not displayed in the report. In the *Slice* list, select dimensions one-by-one, and then click *Select Slice* to specify the member of the dimension to use to slice (filter) the report.

    In strategy management application, these are called filter dimensions. In Crystal Reports, these are called Slices.

12. Click *Next* to specify the style of the report.

13. In the *Style* dialog box, select a predefined style and click *Next*.

14. In the *Chart* dialog box, specify the type of chart to display and click *Finish*. The report is displayed.

9.11 Using an Application Server Fiscal Calendar for Queries in SAP BusinesObjects Enterprise

You can display the standard calendar for queries in SAP BusinessObjects Enterprise tools or you can use the fiscal calendar that users have specified in Application Server to use for models with fiscal settings. By default, the standard calendar is used.

Prerequisites

You are the administrator of SAP NetWeaver.

Procedure

1. Start the SAP NetWeaver Administrator.

2. Log on as administrator with the global password you provided when you installed NetWeaver CE.
3. Click *Configuration Management*.
4. Click the *Infrastructure* tab.
5. Select *Java System Properties*.
6. In the *Templates* section, select the *CE_Java_EE_production_full* entry (or whatever your NetWeaver server template is called). Make sure you select the template and not the instance development or ID.
7. Click the *Applications* tab.
8. In the *Name* column, type strategy and press `Enter` to list the strategy applications.
9. Select the name *xapps~cpm~sm~strategymanagement*.
10. In the *Extended Details* section, click inside the *Name* text box and enter `odbo.timeprovider`.
11. Specify the value PAS. The date ranges and calculations are done using the fiscal calendar. The default setting is `Calendar`.
12. Restart SAP NetWeaver CE to clear the previously cached data.

10 Application Server Configuration Files

The key configuration files of Application Server include:

- `LSSERVER.INI`
- `LSDAL.INI`
- `LSDAL.CNF`

10.1 LSSERVER.INI Settings

The `LSSERVER.INI` file reflects only those options that you installed on your system, so all of the following entries might not appear in your `LSSERVER.INI` file.

10.1.1 [Microsoft Windows] settings

The `[Microsoft Windows]` section contains options related to general path and other miscellaneous setups.

Features

VERSION=version

The version of Application Server that is currently installed.

SERVER=servername

The name of the UNIX or Microsoft Windows server. If no name is specified, Application Server runs either the client standalone version or the client/server version, depending upon whether a server name is entered in the logon window.

DBPATH=<DRIVE>:\users\default\Home;<DRIVE>:\users\default\Data

Defines the path Application Server searches for dimensional models that are not set up as environmental variables. This option is used for standalone and LAN installations and Microsoft Windows clients running client/server.

DBHOME=<DRIVE>:\users\default\Home

Defines the Application Server home directory, which is the location of external files (for example, output buffer files, traces, database dumps, and so on) if there is no separate environment variable specifically defining the files. Each user must have their own directory. Although this directory can be on a network, it cannot be a shared directory.

PAGEDB=<DRIVE>:\users\default\Home\PAGEDB

Defines the location and name of the Application Server output window page file.

PAGEDBSIZE=25000

Defines the maximum size of the Application Server output window page file, PAGEDB. The default value is 25,000.

CMDSEP=|

Indicates the character to use as the Application Server command separator function. The default is the bar (|) symbol. Many other characters conflict with the normal function of

Application Server. However, the bar (|) symbol, the exclamation point (!), and the tilde (~) do not clash with normally used characters in filenames and the Application Server command language.

LOCKFILE=<DRIVE>:\users\default\Data\LOCKFILE

Defines the location of the Application Server lockfile. This option is used for standalone and LAN installations and Microsoft Windows clients running client/server. The lockfile must be in the same location as `MASTERDB`. Therefore, if `MASTERDB` resides on a network drive, the lockfile must reside on the same network drive.

All users using the same `MASTERDB` must use the same lockfile, otherwise serious database corruption could occur.

WINDOWPOS=0 0 882 1152

Defines the coordinates of the *Application Server* window.

EDITFULLSCREEN=0

Indicates the maximum state of the *Editor* window.

`1` = *Editor* window is maximized.

`0` = *Editor* window is not maximized (default).

EDITWINXPOS=256

Defines the location of the *Edit* window X Coordinate.

EDITWINYPOS=192

Defines the location of the *Edit* window Y Coordinate.

EDITWINWIDTH=896

Defines the width location of the *Edit* window.

EDITWINHEIGHT=576

Defines the height location of the *Edit* window.

DEFAULTMEMORY=

Defines the amount of memory that will be used by each Application Server session. The default value is 12,000 kilobytes (Kb) on Microsoft Windows servers.

This setting can be overridden at the command line, or from within a procedure. For more information about `DEFAULTMEMORY`, see the `SET MEMORY` command in Application Server online Help.

MASTERDB=<DRIVE>:\users\default\Data\MASTERDB

Defines the location of the required dimensional model, `MASTERDB`. This option is used for standalone installations only.

TBDB=<drive>:\users\default\Data\TBDB.ENG

Defines the location of the required dimensional model, `TBDB`. This option is used for standalone and LAN installations only.

INITIAL=C:\users\default\Data\INITIAL

Defines the location of the distribution dimensional model, `INITIAL`. This option is used for standalone and LAN installations only.

APLIB=C:\users\default\Data\APLIB

Defines the location of the distribution dimensional model, `APLIB`. This option is used for standalone and LAN installations only.

SMREPORT=C:\users\default\Data\SMREPORT

Defines the location of the distribution dimensional model, `SMREPORT`. This option is used for standalone and LAN installations only.

JUICE=C:\users\default\Data\JUICE.ENG

Defines the location of the distribution dimensional model, `JUICE`. This option is used for standalone and LAN installations only.

TSPPROMPT=Yes

Controls the display of the logon dialog box.

`Yes` = Displays a logon dialog box, even if the username and password have been specified (default).

`No` = The logon screen does not appear unless required.

EXITCLEAR=Yes

Specifies how Application Server should be closed when exiting from an application.

`Yes` = Clears the `Work` database (default).

`No` = Does not clear the `Work` database.

SHAREDMEMORY=NO

Indicates whether shared memory is used.

`Yes` = Shared memory is used.

`No` = Shared memory is not used. Required for Microsoft Windows server installations (default).

10.1.2 [Server] Settings

The `[Server]` section contains options related to the Application Server when implemented on a Microsoft Windows server or UNIX Server.

Features

SERVERPATH=C:\Program Files (x86)\SAP BusinessObjects\Strategy Management\ApplicationServer

Defines the location (directory) of the Application Server components for client/server operation.

10.1.3 [XXXXX] Settings

The `[XXXXX]` section contains options related to the Application Server when it is connecting to a remote UNIX or Microsoft Windows server machine. When you create a remote server using Application Server, a new `[XXXXX]` section is created (where `[XXXXX]` is the name of the remote server).

Features

[XXXXX]

Indicates the server name.

PROTOCOL=TCP

Indicates the selected communications protocol (must be TCP).

SERVICE=PILOT

Defines the `lssmap` file service name to connect to.

In UNIX, this parameter is the name of the shell script found in the `lssmap` file that is run when you connect to UNIX. It is case sensitive.

CURSOR=one of LSSCMPTR or LSSCOMMS or NONE

Indicates cursor to use when indicating client/server communication.

USERNAME=xxx

UNIX or Microsoft Windows server user name; not the same as your Application Server logon name.

PASSWORD=password

This value should be empty unless you want to continue to use clear text passwords to the server machine. The line is overlooked if it is empty and you have an `EncryptedPassword` line.

ENCRYPTEDPASSWORD=encrypted_password

Encrypted password to the UNIX or Microsoft Windows server machine running Application Server.

If this line is empty or contains a question mark (?), you are prompted to enter your password every time you start Application Server in a client/server configuration.

When you create a remote server connection in Application Server by choosing *File*, then *New*, then *Remote Server*, the password you enter in the *Create Remote Server* dialog box gets stored in encrypted format in this line in `lsserver.ini`. To learn about this, see *Creating a remote server connection* in the Application Server online Help.

LOGFILE=LSSWSOCK.LOG

Specify `LOGFILE` for the output trace file you want to use. The default is `LSSWSOCK.LOG` for WINSOCK connections.

LOGLEVEL=BASIC

Specify `LOGLEVEL=BASIC` for function name and return code, or `LOGLEVEL=ADVANCED` for function name, return code, and data.

PORT=8325

Specifies a port setting if other than 8325 (the default).

NTUSERLOGIN=Y

This option is available if you are running Application Server in client/server mode on an NT server.

The default setting of `Y` means that the user is required to logon to the NT security, and have a user ID for that NT domain.

If you specify `NTUSERLOGIN="N"` on the server, the user name and password entries are not validated, and `USERPRIV=N` is also implied for this user. The Application Server process that is started on the server runs in the security context of the NT Local System account.

If you change this setting in `LSSERVER.INI` on the server, you must stop and then restart the SAP SM Listener.

Although the user name and password are not validated on the server, these entries are still required in `LSSERVER.INI` on the client — set both `USERNAME` and `PASSWORD` to `NULL` or `BLANK`.

USERPRIV=Y|N

You can control the user's ability to access network privileges on the server by adding this parameter to this section of the `LSSERVER.INI` file. In NT Server for Intel 4.0, users have network privileges by default.

When `USERPRIV=Y`, user access to network drives is based on the privileges of the user account specified by the User and Password entries in the `LSSERVER.INI` file on the client machine. When `USERPRIV=N`, user access to network drives is based on the privileges of the Local System account on the server machine.

To access files stored on Novell network drives, the universal naming convention (UNC) must be specified in the `DBPATH` variable or in other database variables defined in the `LSSERVER.INI` file.

The ability to connect to NFS mounted drives may depend on the version of the NFS software you are running. Contact Support Services for information.

10.2 LSDAL.INI Settings

The `LSDAL.INI` file contains a dictionary of Link database definitions or Link IDs. The `LSDAL.INI` file reflects only those options that you have installed on your system, so all of the following entries might not appear in your `LSDAL.INI` file. Use Link to modify this file.

10.2.1 [ConnectionID] Settings

This section contains options related to Link IDs that you have created.

10.2.2 [Enable] Settings

The `[Enable]` section contains options you have currently installed.

10.2.3 [Settings] Settings

The `[Settings]` section contains various Link configuration settings.

Features

LastSource=IDname

The name of the last Link ID to which you successfully connected.

Version=v<x>.<x>

The version number of the currently installed product.

[linkid] settings

The Link Configurator uses the information in this section to connect to the selected database. When you create a Link ID in Application Server, the values you define for the connection are stored in this section, where `linkid` is the name you have provided for that Link ID.

ArraySize=n

You can add this parameter to the `[linkid]` section of the `LSDAL.INI` file to specify a default array size for the Link Configurator to use when fetching records from the RDBMS during a `PEEK`, `READ`, or `CONSTRUCT` command. For example, if you specify `ArraySize=200`, then 200 records will be fetched at a time during the `READ` process.

For n, specify a number between 1 and 32,768 for the size of the array you want to fetch from the RDBMS during a `PEEK`, `READ`, or `CONSTRUCT` process.

If you also use the `ARRAYSIZE` n keyword on the `PEEK`, `READ`, or `CONSTRUCT` commands, then the `ArraySize` parameter in `LSDAL.INI` is overridden by the `ARRAYSIZE` command keyword. See the Application Server online Help for information about the `ARRAYSIZE` command keyword.

If you do not add the `ARRAYSIZE` parameter in the `[linkid]` section of the `LSDAL.INI` file, and you also do not specify the `ARRAYSIZE` keyword on the `PEEK`, `READ`, or `CONSTRUCT` commands, then the Link Configurator uses the default value of 100 to fetch 100 records at a time from the RDBMS during a `PEEK`, `READ`, or `CONSTRUCT`.

Some drivers do not support array fetching, such as the Microsoft ODBC driver for MS Access. In those cases, the array size has a value of 1, and the Link Configurator only runs single row fetches.

The best array size may be different on different systems and networks, so you should experiment with array size numbers until you find the optimal value.

10.3 LSDAL.CNF Settings

The `LSDAL.CNF` file contains template Link definitions. It is read when you create a new Link ID in Application Server. Other ODBC-related information is taken from the Registry entries created during installation of Application Server.