User's Guide
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CUSTOMER

SAP Strategy Management Model Designer 10.1

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Typographic Conventions

Table 1

Example	Description
<Example>	Angle brackets indicate that you replace these words or characters with appropriate entries to make entries in the system, for example, "Enter your **<User Name>**".
Example > *Example*	Arrows separating the parts of a navigation path, for example, menu options
Example	Emphasized words or expressions
Example	Words or characters that you enter in the system exactly as they appear in the documentation
www.sap.com	Textual cross-references to an internet address
/example	Quicklinks added to the internet address of a homepage to enable quick access to specific content on the Web
123456	Hyperlink to an SAP Note, for example, SAP Note 123456
Example	• Words or characters quoted from the screen. These include field labels, screen titles, pushbutton labels, menu names, and menu options. • Cross-references to other documentation or published works
`Example`	• Output on the screen following a user action, for example, messages • Source code or syntax quoted directly from a program • File and directory names and their paths, names of variables and parameters, and names of installation, upgrade, and database tools
`EXAMPLE`	Technical names of system objects. These include report names, program names, transaction codes, database table names, and key concepts of a programming language when they are surrounded by body text, for example, `SELECT` and `INCLUDE`
EXAMPLE	Keys on the keyboard

Document History

Caution

Before you start the implementation, make sure that you have the latest version of this document that is available on SAP Service Marketplace at service.sap.com/instguides.

The following table provides an overview on the most important document changes:

Table 2

Version	Date	Description
1.0	2013-10-01	Initial version
1.1	2015-11-09	• In the topic Preparing the Procedure Files [page 9], added information about using Sybase ASE or HANA. • In the topic Developing a Model Using Model Designer [page 10], modified the databases listed in the prerequisite regarding the ODBC System DSN.

Content

1 Introduction

Use Model Designer to create an Application Server model that adheres to the guidelines for an Entry and Approval model. The model contains constructed dimensions, and measures. The measures can be standard, or they can be specially built for use by strategy management KPIs. You can then use the Entry and Approval application to load the data into the model.

If you are not implementing the Entry and Approval application, you can then use Application Server to load the data into an Application Server model by creating your own load procedures.

Prerequisites

You have added a System DSN to connect to your MaxDB, SQL Server, or Oracle database and created a Link ID called *SSM_CB_EA*. For information, see the *Installation Guide for SAP Strategy Management* on the SAP Help Portal at help.sap.com/bosm101. Review the topic *Creating a Link ID for Certain Implementations*.

You are the strategy management administrator.

Process

1. Prepare to use Model Designer by creating a model connection named *CBDEFAULT* and preparing the procedure files according to the type of system database you are using.
2. Develop models using Model Designer.

2 Preparing to Use Model Designer

To use Model Designer, you must first create a model connection and prepare the procedure files.

Prerequisites

- You have added a System DSN to connect to your MaxDB, SQL Server, Oracle, or IBM DB2 database and you have created a Link ID called *SSM_CB_EA*.

  For information, see the *Installation Guide for SAP Strategy Management* on the SAP Help Portal at help.sap.com/bosm101. Review the topics *Setting Up Client Access to the SAP NetWeaver System Database* and *Creating a Link ID for Certain Implementations*.
- You are the strategy management administrator.
- 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 Strategy Management* on the SAP Help Portal at help.sap.com/bosm101. Review the topic *Adding Environment Variables to Application Server Scripts-DB2*.

2.1 Creating a Model Connection for Model Designer

You must create a special model connection that is used to make the initial connection to Application Server to create models. This model connection also provides the login information to create additional model connections for the new models.

You create a model connection using these special values. All other values can be specified as appropriate:

Table 3

Field	Value
Model Connection name	*CBDEFAULT*
Application Server User	*CBADMIN* **Note** The CBADMIN user already exists in Application Server. You do not need to create this user.
System Groups/Users	*Everyone*
Model	*INITIAL*

For information about creating a model connection, see SAP Library application help for SAP Strategy Management on the SAP Help Portal at help.sap.com/bosm101. Choose *Administration* > *Model Connection Development* > *Creating a Model Connection*.

2.2 Preparing the Procedure Files

The Model Designer installation provides Application Server procedures that are used by Model Designer to build the Application Server models. For example, each time you click *Build PAS Model*, the procedure `cb_newmdl.pro` located in the directory `\Program Files (x86)\SAP Strategy Management\InternetPub\procs` is executed.

The installation provides different versions of the procedure files to support each type of SAP NetWeaver System Database, which can be MaxDB, SQL Server, Oracle, Sybase ASE, or HANA. You must make sure the appropriate procedure files for your system database exist in the correct directory, as indicated below:

- If you are using MaxDB, the procedure files are already in their appropriate location so you can skip this section. The MaxDB procedure files are installed in the `\Program Files (x86)\SAP Strategy Management\InternetPub\procs` directory.
- If you are using SQL Server, you must copy the files from the `\Program Files (x86)\SAP Strategy Management\InternetPub\procs\sqlsrvr_procs` directory up one level to the `\procs` directory and overwrite any MaxDB versions.
- If you are using Oracle, you need to copy the files from the `\Program Files (x86)\SAP Strategy Management\InternetPub\procs\oracle_procs` directory up one level to the `\procs` directory and overwrite any MaxDB versions.
- If you are using IBM DB2, you need to copy the files from the `\Program Files (x86)\SAP Strategy Management\InternetPub\procs\db2_procs` directory up one level to the `\procs` directory and overwrite any MaxDB versions.
- If you are using Sybase ASE, you need to copy the files from the `\Program Files (x86)\SAP Strategy Management\InternetPub\procs\sybase_procs` directory up one level to the `\procs` directory and overwrite any MaxDB versions.
- If you are using HANA, you need to copy the files from the `\Program Files (x86)\SAP Strategy Management\InternetPub\procs\hana_procs` directory up one level to the `\procs` directory and overwrite any MaxDB versions.

3 Developing a Model Using Model Designer

You develop a model in Model Designer by specifying dimension and member information and adding the measures.

Prerequisites

You have added an ODBC System DSN to connect to your MaxDB, SQL Server, Sybase ASE, or HANA database and you have created a Link ID called *SSM_CB_EA*. For information, see the *Installation Guide for SAP Strategy Management* on the SAP Help Portal at help.sap.com/bosm101. Review the topics *Setting Up Client Access to the SAP NetWeaver System Database* and *Creating a Link ID for Certain Implementations*.

You have prepared your system to use Model Designer. For information, see Preparing to Use Model Designer [page 8].

You are the strategy management administrator.

Process

1. Start Model Designer and enter model information.
2. Specify dimension Information.
3. Add members to the dimensions.
4. Define the measures.
5. Build the Application Server model.

3.1 Starting the Model Designer and Defining the Model

Procedure

1. Open an Internet Explorer browser window and type the following:

   `http://<nw_server>:<port>/strategy/cubebuilder`

2. Enter information into the following fields as appropriate:

   Table 4

Field	Value/Description
PAS Model Name	Enter a model name up to 20 alphanumeric characters. The name must begin with a letter. This is the name of the model you will be creating.
Fiscal Year Start	Specify the month on which your fiscal calendar starts.

Field	Value/Description
Default Periodicity	Specify the default periodicity for the KPIs. You can select between Monthly, Quarterly and Yearly. You can override this default for individual KPIs if required.

3.2 Specifying the Dimensions

You must specify the dimensions and all the levels of the dimensions. You can add up to 32 dimensions.

Levels show the hierarchical relationship between the members. Each level has a name and represents a position in the hierarchy. By using a name for each member level, you can easily select that level by name and perform calculations or reporting for that group of members.

Prerequisites

You have selected a model in the *Model Name* dropdown list.

Procedure

1. In the *Dimension* section, click *Add*.
2. In the *Add Dimensions* dialog box, enter the following preliminary information about the dimensions in your model. In all fields, enter a name that is up to 50 alphanumeric characters, beginning with a letter. The only special character allowed is the underscore.

   Table 5

Field	Value
Dimension Name	Specify a dimension name.
Input	Specify an input level name. Input members are the lowest level of information. A dimension has only one level of input members. If you leave the Input level blank the Input level takes the same name as the dimension.
Output 1	Specify an output level name. Output members are intermediary levels in the hierarchy above input members. There can be multiple levels of output members. Each output member is a consolidation or aggregation of input members or output members from a lower level (a parent member).
Output 2–4	Enter the names of the output levels, if applicable. If you have fewer than five levels, leave the appropriate highest output levels empty.

Field	Value
Include Result	Specify *Yes* to include a `TOTAL_<dimension>` member. Result members are the top level of information in the hierarchy. It is a consolidation level. A dimension can have one result level or none, as this level is optional.

3.3 Adding Members to the Dimensions

Once you create a dimension, you can add members to it.

Prerequisites

You have defined the dimension name and dimension levels.

Procedure

1. In the *Dimension* section, click *Edit Members* to define the members of your dimensions.
2. From the *Dimension Name* dropdown box select the dimension for which you want to add members.
3. Click *Add New Members* to enter new members for the selected dimension.

   It is possible to create a dimension with an uneven hierarchy. For example, you may have some inputs whose immediate parent is at output level 2 rather than level 1. In this case, you would leave the level 1 box empty.
4. Click *Save*. To make it easier to enter multiple input members that aggregate to the same output hierarchy, only the input box is cleared when you click *Save*.
5. Continue adding members to the levels as appropriate.
6. Click *Close* to see the full list of dimension members.

   Short names and the apex or *TOTAL* member are generated automatically.

3.4 Defining the Measures

You can use Model Designer to specify measures for KPIs, and also specify measures not used for KPIs. When you specify the measure information for a KPI, you provide the general measure information.

Model Designer then generates the five measures that are needed to support the KPI. Model Designer creates the following measures for a KPI based on your measure information:

- Actual – Sourced from actual data.
- Target – Sourced from budget or forecast data.
- Score (Target gap) – Calculated based on one of these target gap formulas:
  - Achievement target gap – where the Actual value more than the Target value is preferred, for example, Revenues.

- Reduction target gap – where the Actual value less than the Target value is preferred, for example, Expenses.
- Absolute target gap – where any deviation from Target is not desired, for example, Inventory Over/Under Stock.
- Zero target gap – where you have a zero Target value preferred, for example, product defects or shipment days late.

- Trend - Moving average of the actual values
- Gap Performance (Trend Deviation) - Calculated based on the selected trend gap formulas.

For more information, see the *Server Configuration Help for SAP Strategy Management* on the SAP Help Portal at help.sap.com/bosm101. Review the topic *Getting Started with a Full Implementation*.

Prerequisites

You have entered the dimension information.

Procedure

1. In the *Measures* section, click *Add*.
2. Enter the following values as appropriate:

Table 6

Field	Value/Description
Measure Name	Specify a name for the measure.
Periodicity	The periodicity (for example, monthly, quarterly, yearly) you specified during the startup of Model Designer is selected by default. Optionally, you can change the periodicity.
Time Series Consolidation	Specify a time consolidation method, either *AVERAGE, SUM, LAST*, or *FIRST*. This method is used when monthly measures are viewed quarterly, for example.
Decimal Places	Select between *0* and *10* decimal places for your measure.
Dimensioned by	Select the dimensions associated with this measure. A measure can have up to five dimensions associated with it. This limit applies to Model Designer and Entry and Approval. If you create a dimensional model in Application Server, you can have up to 12 dimensions associated with measures.
Dimension Consolidation	If the measure should be summed for output members, set Dimension Consolidation to *SUM*. If outputs should be the average of inputs, select *AVERAGE*.

Field	Value/Description
	If the outputs cannot be calculated and must be entered manually, select *ENTER*. In this case you could enter data for Entry and Approval on all levels. The Dimension Consolidation is set to *NONE* if the model has no dimensions or no dimensions are selected.
KPI	Select *Yes* if you want to create this measure for a KPI. When the model is built, five measures will be created using the information provided for this measure. The short names are automatically generated and the measure names have the following suffixes `_ACT`, `_TAR`, `_TARDEV`, `_TRD`, `_TRDDEV`. If this is a standard measure that is not intended to be used for a KPI, select No. Only one measure will be created called `_ACT`
Score Calculation	Select the formula that will be used to calculate the Score (Target Gap), which is the value used to set the KPI dial position in the scorecard.
Virtual Measure	Specify whether this is a virtual measure, derived or calculated "on the fly" from other measures in the model. If you create a virtual measure with the KPI option set to *No*, only the `_ACT` measure can be created. If you create a virtual measure with the KPI option set to *Yes*, you have the option of creating both the Actual and Target as virtual measures or creating one virtual and one non-virtual measure. If you select the *Virtual Measure* option, the following additional fields appear:
Formula Type	Specify whether this is a standard or custom formula. You can change from a standard formula to a custom formula at any time.
Actual/Target/Both	Specify whether this measure is actual, target, or both.
Select a formula	When the *Formula Type* is *Standard*, select a pre-defined formula to apply to the virtual measure. When you select a formula, you then select a variable for `VAR1` and another variable for `VAR2` in the formula, and `VAR3` if required. If *Both* is selected, the same calculation will be used for the *Actual* and *Target* measures. The Actual calculation will be based on the `_ACT` measures of the selected names and the Target calculation will be based on the `_TAR` measures. If *Actual* is selected, all KPI and non-KPI measures can be used in the calculation. The *Target* measure is created as a non-virtual measure.

Field	Value/Description
	If *Target* or *Both* is selected, the list of measures available will be those created with KPI set to *Yes*. There is no `_TAR` measure for the non-KPI measures so a Target calculation cannot be created. If *Target* is selected, the *Actual* measure is created as a non-virtual measure.
Select measures and operators	When the *Formula Type* is *Custom*, you create the formula manually. You still have the option of defining the formula for *Both*, *Actual*, and *Target* but the calculations have to be created separately. You can create a formula by clicking on a measure name in the list box and using the calculator buttons or by clicking on the *Edit* link and manually entering the formula. Always use measure short names when manually defining a formula. You can create a KPI that has a constant *Target* by defining it as a Custom virtual measure. The Actual could be virtual and defined from other measures or it could be non-virtual and entered through Entry and Approval. An example might be *Customer Satisfaction* where the Target is always 90% and the Actual is entered from survey results. There is no way for the Model Designer to verify a Custom formula so, if you use this option, you should make sure that the calculation is valid in Application Server.

3. Click *Save*.

3.5 Building the Application Server Model

When you build the model using Model Designer, the function issues a `SUPERVISOR CREATE DATABASE` command in Application Server. The model is created if it does not exist already. This is done with the `CBDEFAULT` model connection you created in the beginning.

The following model connections are created for the model if they do not exist:

`CB<modelname>_SC` – A scorecard model connection, with Application Server user `GUEST`

`CB<modelname>_MM` – An Entry and Approval model connection with Application Server user `MMADMIN`

> **Note**
>
> If a password has been added to either the `GUEST` or `MMADMIN` users in Application Server, these model connections will have to be created in advance or they will have to be modified. The name of the model connection doesn't matter. The procedures will identify if a model connection for the specific model already exists and therefore will not create an additional one with the predefined names.

Prerequisites

You have entered the dimension member information and created the measures.

Procedure

Click *Build PAS Model*.

A progress box is displayed while the model is building. When this is complete, a pop-up box appears, showing you the list of dimensions and measures that have been created in the model. Review this information and look for anomalies. For example, you should avoid measures with duplicate long names and make sure that there are no dimension members that appear in more than one aggregation.

You can start Application Server and view the model.

If you see a popup explaining that there was a problem creating the model, review the contents of the trace file at `\Program Files (x86)\SAP Strategy Management\ApplicationServer\home\cb_build_<modelname>.trc`

3.6 Executing Custom Procedures when Building a Model

Each time you press the *Build PAS Model* button, the procedure `cb_newmdl.pro` is executed. This procedure issues all the necessary commands to build the model, construct the dimensions, and create the measures.

The `cb_newmdl.pro` procedure has a section to run a custom procedure associated with the model if the custom procedure exists. If you want to execute custom code after the components maintained by Model Designer are built, you can put them in an Application Server procedure set. For example, you can write a custom procedure to load data into the model using `ACCESS` and `READ` commands.

For example, you can write a custom procedure to load data into the model using `ACCESS` and `READ` commands.

If you want to calculate the Score or Gap Performance measures of a KPI that is not available in Model Designer, you should include the commands for removing the measures and recreating them in the custom `CUSTOM_CB_<model_name>.pro` procedure set. If you issue the commands in an Application Server session, they will be overwritten when the model is rebuilt from Model Designer.

Procedure

1. Create a custom procedure called `CUSTOM_CB_<model_name>.pro` that contains Application Server commands you want to execute whenever the *Build PAS Model* button is selected.
2. Place the custom procedure in the `\Program Files (x86)\SAP Strategy Management\InternetPub\procs` directory.
3. Every time you click *Build PAS Model* in the Model Designer, the model will be created (or updated) and the custom procedure will be executed.

4 Incorporating the Model into the Application

Prerequisites

You have built the Application Server model.

You are running the administration application as the strategy management administrator.

Users and system groups are added to SAP NetWeaver UME.

Roles are set up with users who will be using this model. For information, see the *Installation Guide for SAP Strategy Management* on the SAP Help Portal at help.sap.com/bosm101.

Process

1. Create a context that is associated with this model.
2. Use the `CB<modelname>_SC` model connection created by Model Designer as the Application Server model connection for the context.
3. Assign roles to the context.
4. Set defaults for the Entry and Approval application including periods, Workflow steps, administrators, data entry permissions and measures.
5. In Entry and Approval, create measure sets, enter and approve data, load the data into the model.

For information about populating the model using the Entry and Approval application, see the SAP Library application help for SAP Strategy Management on the SAP Help Portal at help.sap.com/bosm101. Review the topic *Entry and Approval*.

5 Maintaining a Model Built with Model Designer

You must use Model Designer to modify any model that was created in Model Designer.

You can do the following to maintain models in Model Designer:

- Change dimension levels and members.

  If a KPI has a Dimension Consolidation of *ENTER*, and you change dimension levels, measure sets defined in Entry and Approval may need to be updated or new sets may need to be created for the new levels.

- Delete dimensions.

  You can delete any new dimension, even after they are associated with measures as long as the measures are not yet defined in the Application Server model. That is, you can delete any dimension before you click *Build PAS Model*. Any measure that references a deleted dimension will be updated; the dimension will be removed from the *by dimension* list.

  > **Note**
  >
  > If the model is configured for Entry and Approval, then even new dimensions associated with new measures cannot be deleted.
  >
  > You cannot delete a dimension if the Application Server model is already created and every dimension is associated with one or measures that are already defined in the model.

- Change measures.

  For all measures created in Model Designer or in Application Server, you can change measure descriptive names, time series consolidation, decimal places, dimension consolidation, and the score calculation rule for KPIs (formula for the _TARDEV measure).

  For measures that exist in the Application Server model, you cannot change the periodicity, the associated dimensions, and whether the measure is a KPI.

  If you modify a measure that does not exist in the Application Server model, the original records for the measure are deleted from the database tables and new ones are created. In most cases, the original short name for the measure will be preserved so, if it is used in a formula definition for a virtual measure, the formula will be intact.

  The exception to this is if you change the KPI Yes/No flag for a measure. In this case, the KPI/NONKPI prefix change for the short name will change. The formulas will need to be updated for any virtual measures that reference the renamed measure. This cannot be done automatically.

- Change virtual measures.

  For all virtual measures that exist in the Application Server model, the formula for the measure can be changed. The original Actual/Target/Both selection must be maintained but, if a Standard formula was used initially, you can change the type to Custom.

- Delete measures.

  You can delete measures even if the Application Server model is created and the measure exists in the model. Measures are deleted from the model as well as from the Model Designer tables.

  You cannot delete measures if the model is associated with a strategy management context.

You cannot delete measures if the model is configured for Entry and Approval and there is at least one measure set defined.

If you delete a measure that is referenced in the formula for a virtual measure, the formula will need to be updated. This can not be done automatically.

- Modify a model.

  If you click *Build PAS Model* after changing the model in Model Designer, the Application Server model is updated according to the modified settings in Model Designer database tables.

  Any change you made to the model in Application Server that does not correspond to a change made in Model Designer is lost.

- Delete a model.

  All information in the CPMS_CB_* tables will be removed and the Application Server model will be deleted if it exists.

  You cannot delete a model if the model is associated with a strategy management context.

  You cannot delete a model if it is configured for Entry and Approval and there is at least one measure set defined.

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