Smarten
Advanced Data Discovery
Powered by ElegantJ BI

Integration with SAP®

Business Intelligence & Advanced Data Discovery

www.Smarten.com

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Disclaimer

This document is intended to support administrators, technology managers or developers using and implementing Smarten. The business needs of each organization will vary and this document is expected to provide guidelines and not rules for making any decisions related to Smarten. The overall performance of Smarten depends on many factors, including but not limited to hardware configuration and network throughput.

Contents

1   Introduction

Smarten integrates seamlessly with SAP®, a popular enterprise application. This feature allows users to connect to SAP and retrieve data through BAPIs on the SAP server. SAP integration is achieved by configuring the input and output parameters of SAP BAPI within the Smarten suite. Users have access to a full suite of self-serve visualization and analytical tools to present and share results from SAP BAPI in a report, on a dashboard, with interactive graphs, in ad hoc reporting, cross-tab and tabular reports, and key performance indicators (KPIs). Users do not need extensive training or knowledge to use the Smarten Advanced Data Discovery or leverage the SAP integration.

> Note:
> Apart from SAP BAPI connector, Smarten provides support for SAP HANA driver. Users can create Database profile for SAP HANA and can create cube or dataset.
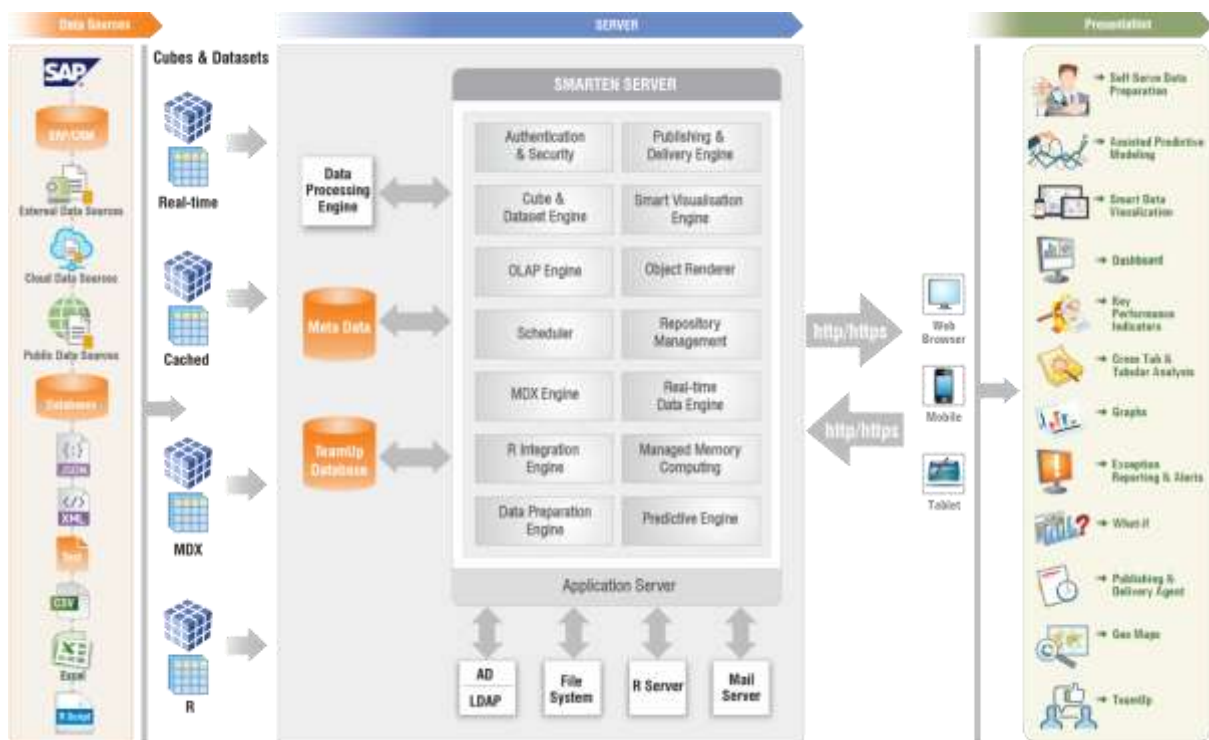
SMARTEN—SAP® INTEGRATION SYSTEM ARCHITECTURE

2   SAP Integration

In Smarten, the process of SAP integration starts with creating a SAP profile. Smarten allows a SAP profile to be used as one of the data sources to create cubes or datasets, which are created by associating a SAP BAPI with the Smarten cube or dataset. To integrate a SAP BAPI with the Smarten suite, input parameters of the SAP BAPI are configured to query the BAPI output. Similarly, the output parameters of the SAP BAPI are mapped with Dimension and Measure columns of the Smarten cube or dataset. Smarten supports both real-time and cache cube or dataset architecture for cubes or datasets created from a SAP profile. Cache cubes or datasets store indexed, preaggregated data along with metadata in the cubes, whereas real-time cubes or datasets store only metadata information and do not store any data in the cubes or datasets.

Once created, SAP cubes or datasets can be accessed by users from front-end objects, such as dashboards, crosstab, tabular, graphs, GeoMap, SmartenView, SmartenInsight and KPI, and the resultant data can be analyzed as per requirements.

SAP integration can be achieved within Smarten by the following steps:

- Create a SAP Profile

- Create Smarten Cube or dataset with a SAP Profile as a data source

- Access SAP cubes or datasets from Smarten front-end tools

2.1 Create a SAP Profile

A SAP profile contains important information related to the SAP server, which is then used as a data source to create a SAP cube or dataset within Smarten. The user can enter required parameters, such as host name, SAP client, username and password, to connect to the SAP server. Smarten allows users to test the connection to the server before saving the details.

> Note:
> Configuring required BAPIs on the SAP server is a prerequisite for SAP integration.
> The following BAPIs should already be installed on the SAP server:
> ZFM_GETLIST_BAPI: This BAPI fetches a list of existing BAPIs installed on the SAP server.
> RFC_GET_FUNCTION_INTERFACE: This BAPI fetches the details of input and output parameters of other BAPIs.
> Please contact your SAP system administrator for installing these BAPIs on the SAP server.

SAP PROFILE

2.2 Create a SAP Cube or dataset with the SAP Profile as a Data Source

Once a SAP profile has been created, the next step is to create a SAP cube or dataset by associating the SAP profile as its data source. Smarten provides easy-to-use steps to create a SAP cube or dataset metadata profile.

Shown below are the steps for creating a SAP profile:

Step 1: Select the SAP profile as a data source.
Step 2: Identify the type of SAP cube or dataset to be created—Cache or Real Time.
Step 3: Identify and select the SAP BAPI to be associated with the SAP cube or dataset.
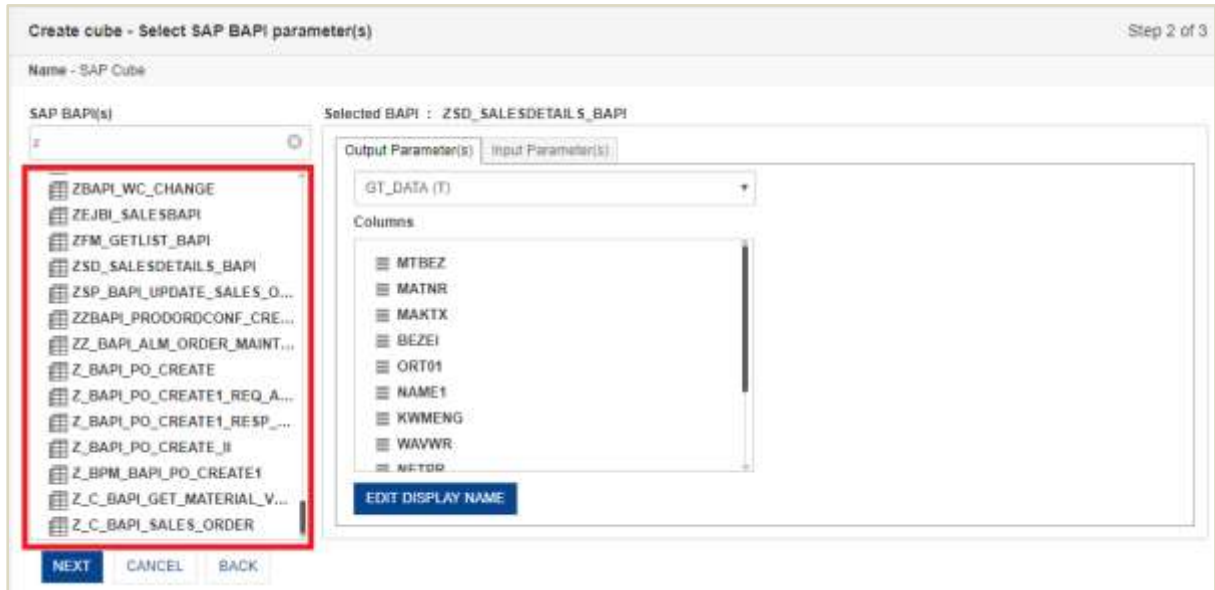
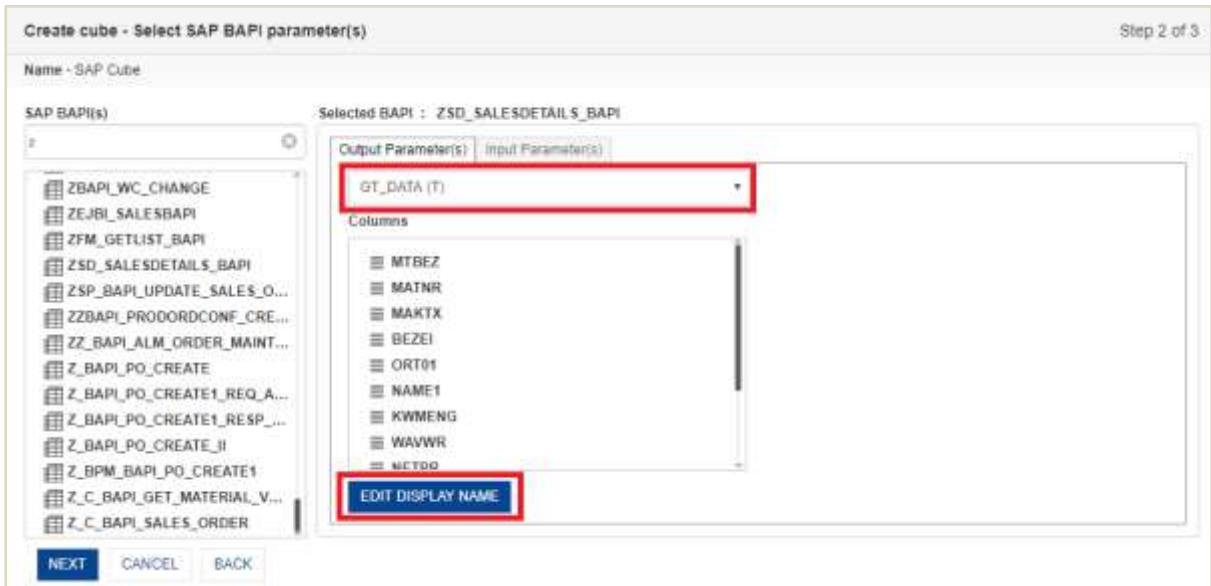
SAP CUBE—BAPI SELECTION

Step 4: Map the output parameters of the SAP BAPI with Smarten, and change the display names of the columns belonging to the output parameters as per requirements.

Two types of output parameters are considered:

Output type	Description
Structure	Output of the SAP BAPI script is saved in the form of a structure that has only one row with one or more columns.
Table	Output of the SAP BAPI script is saved in tabular form.

> Note:
> Output parameters that support a tabular format can be identified by a "(T)" suffixed to their names. Similarly, output parameters that support structural as well as a tabular format can be identified by an "(E)" suffixed to their names.

SAP CUBE—OUTPUT PARAMETERS
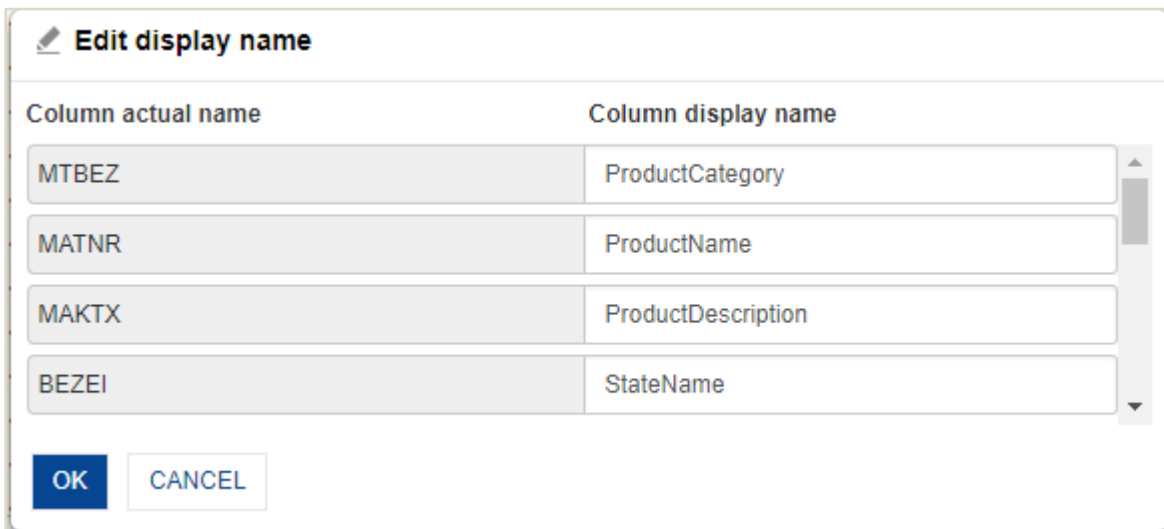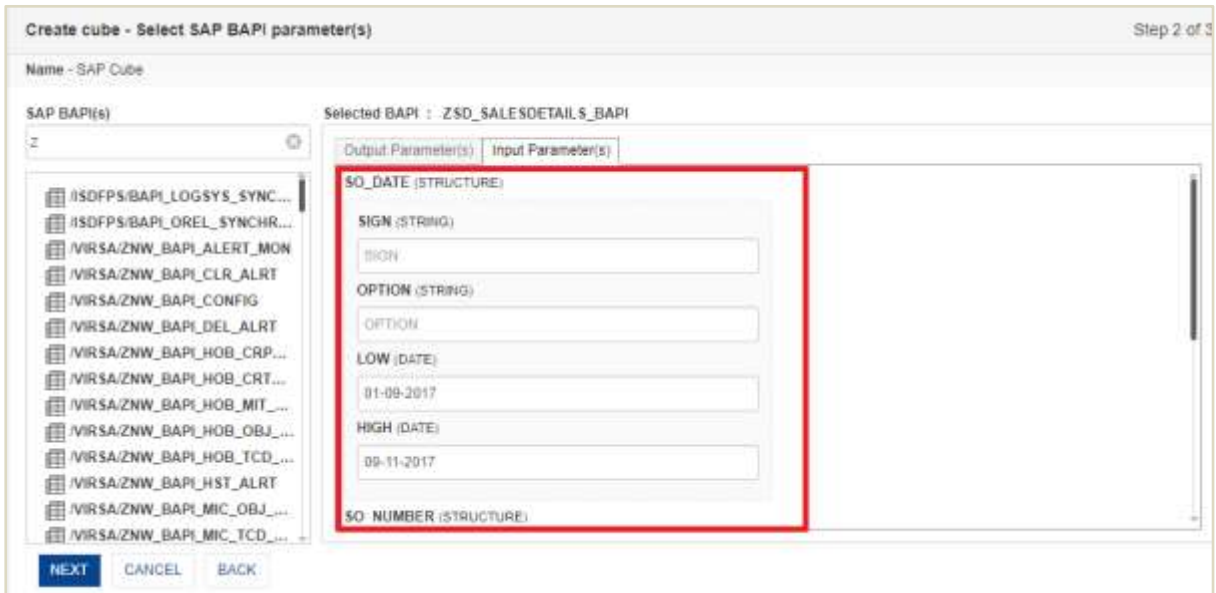

SAP CUBE—EDIT DISPLAY NAME

Step 5: Enter the data to configure input parameters. These are the values with which the BAPI will be queried, and a SAP cube or dataset will be created with BAPI output. For example, suppose your BAPI is returning a result set for sales data of the current year and you want to retrieve data only for a specific month. In that case, your BAPI should be able to accept input parameters for a month so that it can be queried with that input variable and load data for that particular month only.

Two types of input parameters are available:

| Output type	Description
Structure	Output of the SAP BAPI script is saved in the form of a structure that has only one row with one or more columns.
Table	Output of the SAP BAPI script is saved in tabular form.

> Note:
> Output parameters that support a tabular format can be identified by a "(T)" suffixed to their names. Similarly, output parameters that support structural as well as a tabular format can be identified by an "(E)" suffixed to their names.

SAP CUBE—INPUT PARAMETERS

For example, let us assume that "01-09-2017" is entered in input parameter called "LOW(Date)" and "09-11-2017" is entered in another input parameter called "HIGH(Date)." So, the BAPI will be queried with these two values, and the output will consist of data that falls within this date range.

Step 6: Define dimension map hierarchy for the SAP cube or dataset.
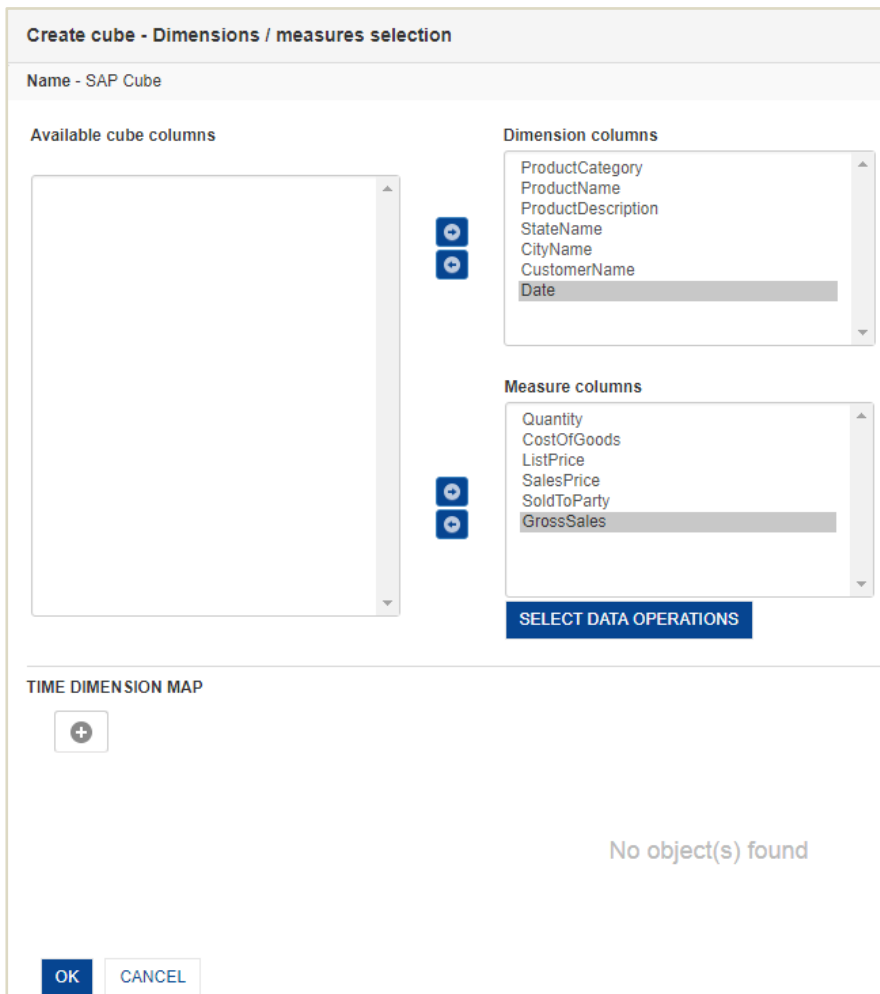
SAP CUBE—DIMENSION MAP HIERARCHY

The SAP cube or dataset is ready.

2.3   Access SAP Cubes or datasets from Smarten Front-end Tools

A SAP cube or dataset is just like any other cube or dataset created from a database or a CSV file that can be accessed by users from front-end objects, such as dashboards, crosstab, tabular, graphs, GeoMap, SmartenView, SmartenInsight and KPI.

SAP integration supports both cache and real-time cube or dataset architecture. Objects created by accessing cache cubes or datasets display information that is already stored within the cubes or datasets until such cubes or datasets are rebuilt to fetch the latest data, whereas the real-time SAP cubes or datasets extract the data as and when required and retrieve the latest data by executing the respective SAP BAPI script every time an object is accessed through them.

A sample tabular report is shown below.

Customer	Product Category	Product Name	Date	Quantity	Sales Price	Gross Sales
07MegaStore	Trading Goods	HT-1010	03-Aug-2012	180	359820	359820
8500 Test AUS	Trading Goods	HT-1069_AU	15-Dec-2011	1	100	100
A.I.T. GmbH	Finished Product	P-109	28-Apr-1997	180	990000	990000
A.I.T. GmbH	Finished Product	P-109	06-May-1998	6	33000	33000
ABC Company	Trading Goods	COFMK-100	10-May-2013	93	10629	10629
ABC Company	Trading Goods	COFMK-100	04-Jul-2013	1	114	114
ADCOM COMPUTER	Trading Goods	HT-1000	07-May-2002	10	9602	9602
ADCOM COMPUTER	Trading Goods	HT-1001	21-Nov-2001	10	12490	12490
ADCOM COMPUTER	Trading Goods	HT-1010	10-Dec-2001	10	0	0
ADCOM COMPUTER	Trading Goods	HT-1010	25-Jun-2002	1	2003	2148
ADCOM COMPUTER	Trading Goods	HT-1011	12-Apr-2004	20	46062	46062
AGE Inc.	Trading Goods	MB01	22-Oct-2012	14	2800	2800
ALAN FAITH	Trading Goods	HT-1040	21-Feb-2002	1	862	862
ALAN FARRAR	Trading Goods	HT-1040	21-Feb-2002	1	862	862

OUTPUT DATA

Note:
Cube or dataset and analytic functions available to users depend on the type of cube or dataset used in a particular front-end object. Please refer to the Smarten-Feature Matrix Based on Data Sources for a list of functions available while using SAP cubes or datasets.

3   Product and Support Information

Find more information about ElegantJ BI-Smarten and its features at www.smarten.com
Support: support@smarten.com
Sales: sales@smarten.com
Feedback & Suggestions: support@smarten.com
Support & Knowledgebase Portal: support.smarten.com