How to Set Up SAP Business One, version for SAP HANA Data Sources for Crystal Reports

All Countries

Typographic Conventions

Type Style	Description
Example	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Textual cross-references to other documents.
Example	Emphasized words or expressions.
`EXAMPLE`	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`	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`	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
`<Example>`	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
`EXAMPLE`	Keys on the keyboard, for example, `F2` or `ENTER`.

Document History

Version	Date	Change
1.0	2012-09-05	First version
2.0	2013-10-28	Updated the string for the *B1CRHPROXY32* driver for SAP Business One 9.0, version for SAP HANA
3.0	2020-05-08	Updated for SAP Business One 9.3, version for SAP HANA
4.0	2020-05-19	Updated the prerequisite section for SAP Business One 10.0, version for SAP HANA
4.1	2021-02-09	Updated the connection strings for SAP Business One 10.0, version for SAP HANA with the multiple tenant databases.

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1   Introduction

This guide describes how to set up data sources when designing Crystal Reports layouts for SAP Business One, version for SAP HANA.

The other parts of designing Crystal Reports layouts for SAP Business One, version for SAP HANA are the same as those for SAP Business One (SQL). For more information about creating layouts with SAP Crystal Reports for SAP Business One, see the *How to Work with SAP Crystal Reports in SAP Business One* guide on SAP Help Portal.

1.1   Background Knowledge

A schema is a collection of database-related entities that represents a specific data context and is equivalent to the concept of a "database" in MS SQL server. It includes tables, views, procedures, and so on. Schemas are displayed under *Catalog* for an SAP HANA instance.

An SAP HANA model is an entity used for analytic querying purposes. It contains attribute views, analytic views, calculation views, and procedures.

A package is a collection of SAP HANA models. Packages are displayed under *Content* for an SAP HANA instance. For each schema, there is a corresponding package with a name similar to *sap.xxx*, in which *xxx* is comprised of the schema name in lower case letters. Note that all models in a package are read-only with respect to the database.

2 Setting Up Data Sources for Designing Crystal Reports Layouts

This section describes the procedures involved in setting up data sources when designing Crystal Reports layouts for SAP Business One, version for SAP HANA.

The procedures are:

1. Creating a New ODBC (RDO) Connection Driver

> **i** Note
>
> You can only use the *B1CRHPROXY32* or *HDBODBC32* driver when you are connecting to the ODBC data source.

2. Selecting and Creating Data Sources

Prerequisites

- To use the *B1CRHPROXY32* driver, make sure you have done the following:

    1. Installed the SAP Business One, version for SAP HANA client on the computer on which you want to design Crystal Reports layouts. For more information, see the *SAP Business One Administrator's Guide, version for SAP HANA* on SAP Help Portal.

    2. Installed the 32-bit SAP HANA database client software for Windows.

    3. Installed the SAP Crystal Reports, version for the SAP Business One application. For more information, see the *SAP Business One Administrator's Guide, version for SAP HANA* on SAP Help Portal.

    4. Installed the 32-bit DI API under `\Packages.x64\DI API Legacy Package` in the SAP Business One, version for SAP HANA product or upgrade package.

    5. Run the CR integration script `SAP Business One Crystal Report Integration Package.exe` under `\Packages.x64\SAP CRAddin Installation` in the SAP Business One, version for SAP HANA product or upgrade package.

- To use the *HDBODBC32* driver, make sure you have done the following:

    1. Installed the SAP HANA database client software on the computers on which you want to design Crystal Reports layouts. For more information, see *SAP HANA Database – Client Installation Guide* on the SAP Help Portal at http://help.sap.com/hana_appliance.

    2. Installed the SAP Crystal Reports, version for the SAP Business One application. For more information, see the *SAP Business One Administrator's Guide, version for SAP HANA* on SAP Help Portal.

Creating a New ODBC(RDO) Connection Driver

To create a new connection driver:

1. On the SAP Crystal Reports *Start Page*, choose *Blank report*.

    A tab for the new report with the *Database Expert* window appears.

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ⓘ Note

If you prefer, you can work with the standard report creation wizard. Instead of *Blank report*, choose *Standard Report*. For more information about the standard report creation wizard, see the SAP Crystal Reports online help.

2. In the *Database Expert* window, in the *Available Data Sources* pane on the left-hand side of the screen, choose *Create New Connection → ODBC (RDO) → Make New Connection*.

   The *ODBC (RDO) Data Source Selection* window appears.

3. Select the *Enter Connection String* radio button, and in the *Connection String* field, enter strings to use either the *B1CRHPROXY32* or *HDBODBC32* driver. For more information about database connection with HANA multitenant database containers (MDC), see SAP Note 2932941.

   o To use *B1CRHPROXY32* as the connection driver, enter **DRIVER={B1CRHPROXY32};SERVERNODE=<SAP HANA Database Server Name or Address>:<SAP HANA Database Instance Port>;DATABASENAME=<Tenant Database Name>;DATABASE=<Company Schema Name on the tenant database>;UID=<SAP HANA Database Server User Name>;PWD=<SAP HANA Database Server User Password>**

   ⓘ Note

   The company schema name on the SAP HANA instance is optional. If you specified the company schema in the connection string, only that schema appears as an available data source. If you did not specify the company schema in the connection string, all the schemas on the specified SAP HANA instance appear as available data sources.

   ➡ Recommendation

   We recommend that you use the *B1CRHPROXY32* driver.

   o To use *HDBODBC32* as the connection driver, enter **DRIVER={HDBODBC32};SERVERNODE=<SAP HANA Database Server Name or Address>:<SAP HANA Database Instance Port>;DATABASENAME=<Tenant Database Name>;CURRENTSCHEMA=<Company Schema Name on the tenant database>;UID=<SAP HANA Database Server User Name>;PWD=<SAP HANA Database Server User Password>**

   ⓘ Note

   If you use *HDBODBC32* as the connection driver, you can only access tables and views through queries. For more information, see *Selecting and Creating Data Sources*.

4. In the *ODBC (RDO) Data Source Selection* window, choose the *Finish* button.

   The connection driver appears under *ODBD (RDO)* in the *Database Expert* window.

Selecting and Creating Data Sources

To select and create data sources:

1. In the *Database Expert* window, in the *Available Data Sources* pane on the left-hand side of the screen, open the driver that you added in the previous procedure.

2. You can now do the following:

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- For the connection driver *B1CRHPROXY32*, if you specified the company schema in the connection string, you can directly use the tables and views of the specified company schema as data sources. You can also create commands with single queries as data sources in the specified company schema.

  If you want to access data sources that are in other company schemas belonging to the specified SAP HANA instance, you must create queries in which the parameter *Schema@* is added before the name of the table or view. For example, `SELECT "CardCode" FROM "{?Schema@}"."OCRD"`. To create queries for an SAP HANA model, add the parameter *Package@* before the SAP HANA model name. For example, `CALL _SYS_BIC."sap.{?Package@}"/GET_BP_LIST().`

  If you did not specify the company schema in the connection string, you can only create commands with single queries as data sources. In such queries you must use the parameters *Schema@* and *Package@* before the name of the table or view, and for the SAP HANA model.

- For the connection driver *HDBODBC32*, you can only create commands with single queries as data sources. In such queries, you must use the parameters *Schema@* and *Package@* before the name of the table or view, and for the SAP HANA model.

i Note

If you use commands as data sources, you can only execute the filtering function on the client side. This may lead to performance issues.

- To create queries for SAP HANA analytic views, you must use one or more of the following clauses:
  - *SUM()*
  - *MAX()*
  - *MIN()*
  - *AVERAGE()*
  - *GROUP BY*

Example

```
SELECT SUM("Value") FROM _SYS_BIC."sap.{?Package@}"/AN_SALES_CUBE GROUP BY
"CardCode"
```

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