

Crystal Analysis Professional 8.5 and the Crystal Enterprise Solution Kit for mySAP.com 2.5

Connectivity to SAP BW 2.0B and BW 3.0A

Overview

This technical brief examines Crystal Analysis Professional (CA Pro) 8.5 connectivity to SAP Business Intelligence Warehouses (BW) 2.0B and 3.0A together with the Crystal Enterprise Solution Kit (CESK) for mySAP.com 2.5. This paper explores the advantages of the new OLAP Business API (BAPI) connection to SAP BW versus that of an OLE DB for OLAP (ODBO) connection. Topics discussed are:

- Connection procedures
- Architecture
- Requirements.

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Introduction

SAP Business Information Warehouse (BW) is a data warehouse storage platform for Online Analytical Processing (OLAP) data. BW extracts data from SAP R/3 and a multitude of other data sources, storing the data in an Info Cube optimized for OLAP.

Crystal Analysis Professional (CA Pro) 8.5 with the CESK for mySAP.com 2.5, is now equipped with connectivity to SAP BW. This provides analytic report creation to leverage an investment in OLAP processing.

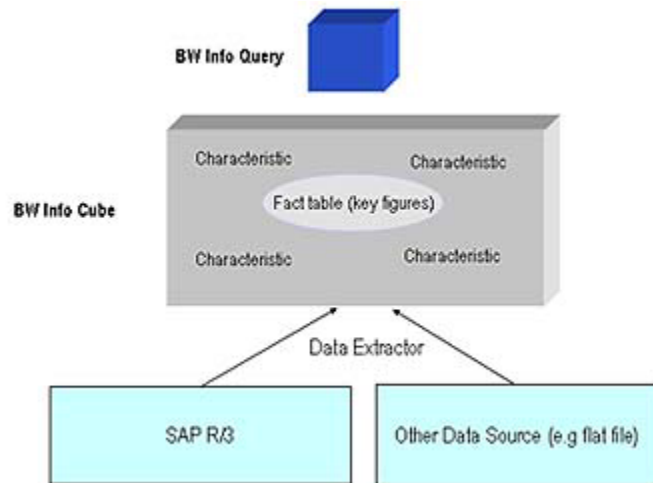


Figure 1 – SAP model

Connecting to SAP BW

CA Pro 8.5 can now connect to a SAP BW server. In the **Crystal OLAP Connection Browser** (see Figure2), click the **Add Server** button. In the **Server Type** drop-down list, a new selection called **SAP Business Information Warehouse (BAPI)** appears.

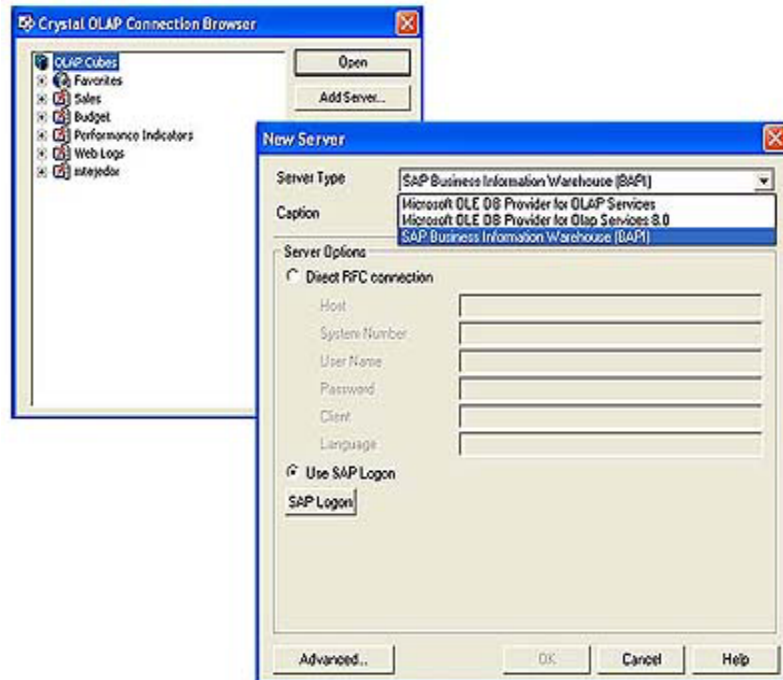


Figure 2 – Crystal OLAP Connection Browser

Server options: direct RFC connection

Connectivity to BW is achieved through a direct Remote Function Call (RFC) connection. This option bypasses the SAP Logon user interface and allows you to pass the parameters to the SAP BW server to establish a connection. This connection provides access to the data source without having the SAP GUI installed on the client computer. The **Server Options** that need to be entered in the **New Server** dialog box are as follows (see Figure 3):

- Host – The server address.
- System Number – The server's system number.
- User Name – The user's logon name.
- Password – The user's password.
- Client – The client system identifier.
- Language – The language used (for example; EN, DE, FR).

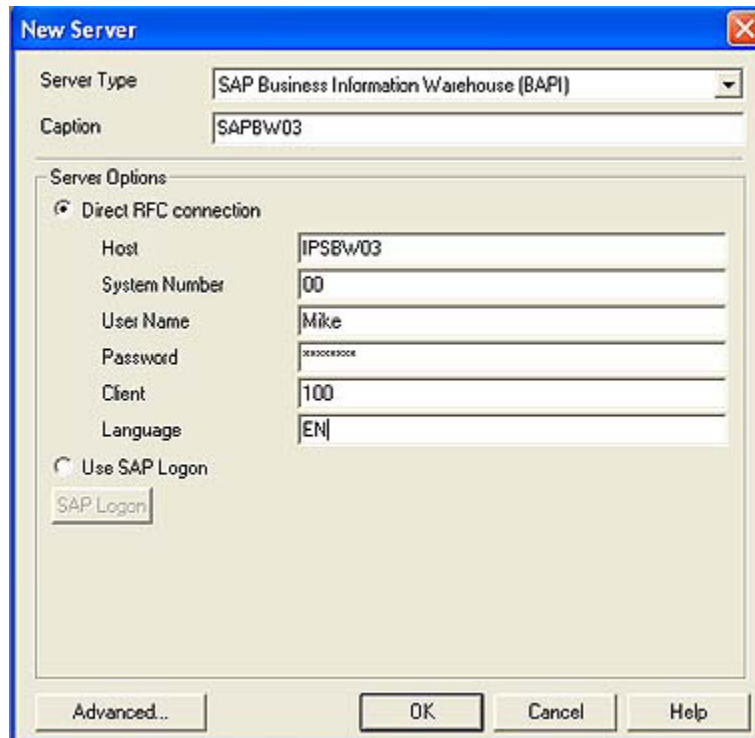


Figure 3 – New Server dialog box

Selecting a BW cube

The server is added to the **Crystal OLAP Connection Browser** (see Figure 4); it is named with the caption you have specified. Drilling down on the server displays directories and cubes located on the Business Information Warehouse you are connected to. At this stage, select a cube from which to build the report.



Figure 4 – Crystal OLAP Connection Browser

Server options: use SAP logon

If you are connecting through the **SAP Logon** dialog box, ensure that the server the Crystal Web Component Server (WCS) is running on is set up with an alias name. To do this see Figure 5, access the **SAP Logon** box and select the **New** button. In the **New Entry** dialog box, enter the name of the alias in the **Description** field; you must also enter any necessary parameters.

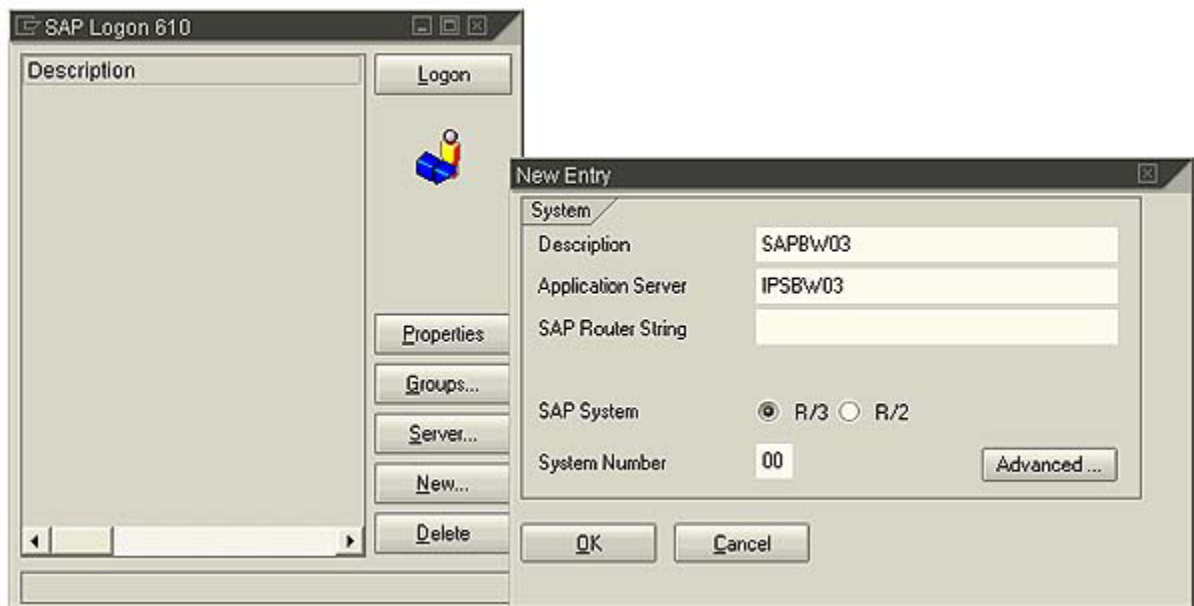


Figure 5 – SAP Logon dialog box

SAP Logon

In the **New Server** dialog box in CA Pro 8.5 (see Figure 6), select the **Use SAP Logon** option and click the corresponding button to access the **SAP Logon** screen on the client computer. The **SAP Logon** dialog box appears and users can enter the parameters needed to access the BW server. Once connected, users are returned to the **Connection Browser** where they can drill down to the cube they want to access.

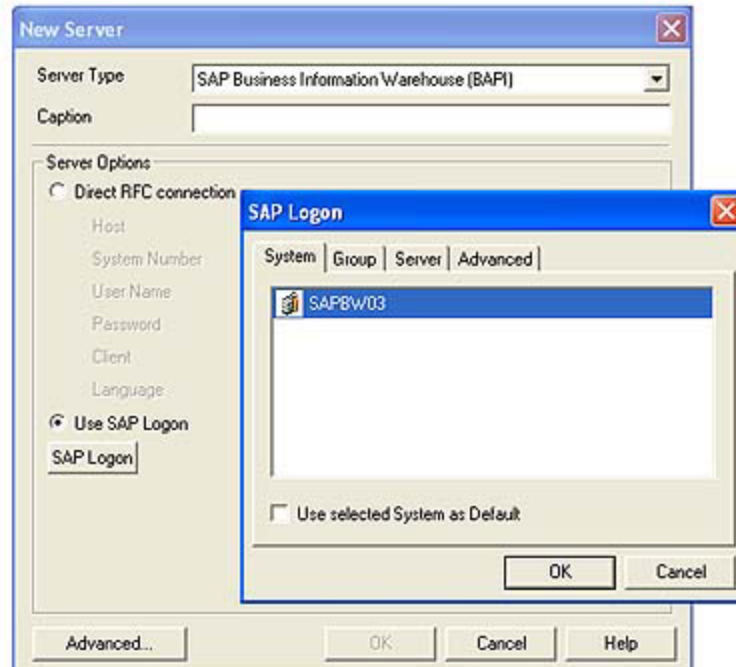


Figure 6 – New Server and SAP Logon box

Connectivity technical overview

SAP provides an open architecture that enables software components from SAP and CA Pro 8.5 to connect with each other. SAP offers two standards through which connectivity to its Business Intelligence Warehouse is possible (See Figure 7).

ODBO

The first is Microsoft OLEDB for OLAP (ODBO), which is designed to handle information from multidimensional data sources. ODBO is a set of Microsoft Component Object Model (COM) objects and interfaces that extend its data access framework (OLE DB) for multidimensional data sets. ODBO reflects the Microsoft OLAP server architecture and, as a result, there are differences between ODBO object definitions and SAP BW objects. SAP's implementation of the ODBO interface is functionally limited because it implements only a subset of multidimensional expressions (MDX). This limitation makes it difficult to do such things as set filters, perform sorts, and perform calculations. ODBO does not scale well because only one query is executable at a time. Performance can be degraded because both server processing and client processing (to fit data into ODBO structures) is involved.

OLAP BAPI

CA Pro 8.5 has bypassed the limitations associated with ODBO by connecting directly to BW using the second standard: OLAP Business Application Programming Interface (BAPI). This method allows CA Pro 8.5 to take advantage of all SAP BW capabilities. It uses SAP's native driver to connect directly to BW instead of the third-party ODBO wrapper. Data is retrieved by executing MDX queries through a method on the MDDataSetBW BAPI. All

processing is done on the server, bypassing client processing and making connectivity more reliable. The BAPI connection uses remote function calls (RFC) to connect to BW as opposed to the COM associated with ODBO. As a result, all that is required for this method is the installation of the librfc32.dll on the client computer, where ODBO requires add-on components. This method eliminates the need for COM and is not limited to a Windows environment.

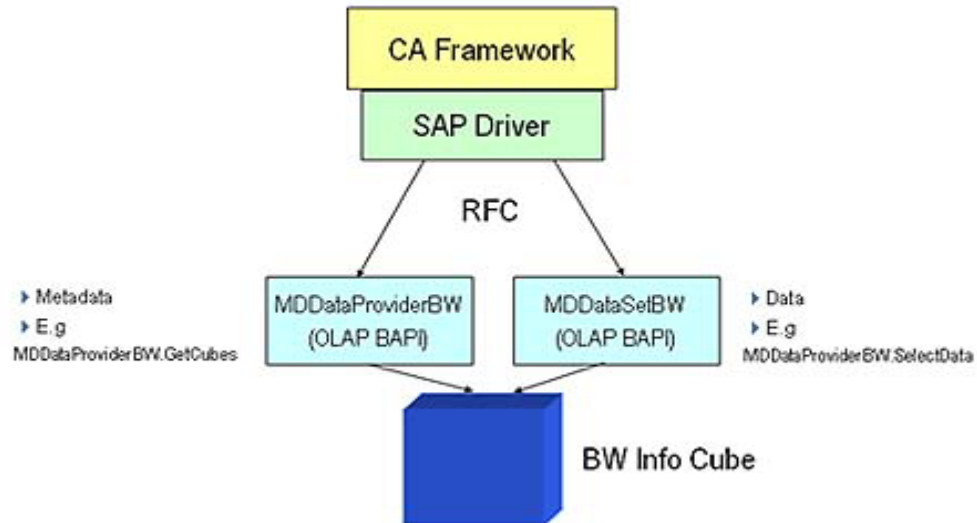


Figure 7 – BW model

Requirements

Crystal Decisions

- Crystal Analysis Professional 8.5
- Crystal Enterprise Solution Kit for mySAP.com 2.5
- Crystal Enterprise 8.5

SAP

- BW (2.0B) SP14, Kernel 4.6D SP level 280
- BW (3.0A) SP 7, Kernel level 510

Contacting Crystal Decisions for Technical Support

We recommend that you refer to the product documentation and that you visit our Technical Support web site for more resources.

Self-serve Support:

<http://support.crystaldecisions.com/>

Email Support:

<http://support.crystaldecisions.com/support/answers.asp>

Telephone Support:

<http://www.crystaldecisions.com/contact/support.asp>