



# An ODBC Driver for SAP BW

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## An ODBC Driver that gives you SQL access to SAP BW

SAP BW has been adopted as a major data warehouse at many companies. With worldwide SAP BW installations numbering over 11,000, accessing the data stored in SAP BW has become increasingly important.

SAP's Business Warehouse (BW) product is the key data warehousing component within its Business Intelligence (BI) and analytics suite. Based on the MDX language, SAP BW has three official interfaces for connecting to both SAP and non-SAP products – OLAP BAPI, OLE DB for OLAP (ODBO) and XML for Analysis (XMLA). Each interface has its own advantages, which are explored in some detail in Simba Technologies' paper entitled, "ODBO, BAPI and XMLA – It's All MDX to Me" (<http://www.simba.com/docs/ODBO-BAPI-and-XMLA-Its-All-MDX-to-Me.pdf>). However, it's important to note that regardless of which interface you choose, it connects to the same MDX Language Engine within SAP BW. As such, any query against SAP BW requires you, or the tool you are using, to know the MDX Language.

While I am a strong proponent of the MDX Language and see where it really gives you power in an analytical environment, I am a realist and realize that the majority of BI and analytics tools available in the market today are based on the SQL Language. SQL has been around since the 1970's and will continue to be around for many more years to come. The choice of SQL-based BI and analytics tools outnumbers those based on MDX, and SQL is generally more familiar to users and has been more frequently the catalyst for mapping business logic with actionable business critical data. Simply put, SQL is entrenched in the BI and data space.

So then, given that SAP BW is an MDX-based data warehouse, can one bridge its power with the pervasive offerings based

on SQL? Is it possible to run SQL queries against SAP BW, which only supports the MDX Language?

Up until now, the standard answer has been that SAP BW is built upon an RDBMS, so access the RDBMS directly. Many companies today do this and some reporting and analysis tools do this as well. But, this raises three important questions.

1. Does one violate their SAP BW license when they access the underlying tables for SAP BW directly?
2. Does one lose the power of SAP BW when they access the underlying tables for SAP BW directly?
3. Does one violate SAP security when they access the underlying tables for SAP BW directly?

The first question is best answered by referring to your license agreement, and I won't discuss this here. In any event, accessing the underlying tables directly would significantly lessen the power of the SAP BW solution. Likewise, security would very likely be compromised in light of contemporary governance practices and law, such as Sarbanes-Oxley.

So then, how do we get SQL Language access to SAP BW, when SAP BW only supports the MDX Language?

The answer is actually quite simple. Simba has developed RelationalCube, which some call an ODBC Driver for SAP BW, others call an SQL to MDX converter, and what I call *freedom to use any tool to access SAP BW*. Simba's RelationalCube is a shipping product that allows:

1. Any query and reporting tool that queries in SQL/ODBC to talk to SAP BW directly
2. Any data federation tool that can access an ODBC data source to connect to SAP BW data
3. SAP BW access that does not violate SAP BW security models
4. SAP BW access that goes through the OLAP BAPI open interface that SAP publishes



While you can continue to use applications like Microsoft Excel Pivot Tables, which access SAP BW using the MDX Language, RelationalCube gives you the ability to also use most SQL-based applications, like IBM's WebSphere Federation Server (formerly called Information Integrator), to access your SAP BW data. Simba's RelationalCube provides the power of SQL access for SAP BW.

If your tool connects to a data source using ODBC or JDBC, Simba RelationalCube allows your tool to talk to SAP BW. RelationalCube translates SQL queries to MDX so that they can be executed against SAP BW. Furthermore, RelationalCube is tuned for SAP BW, so much of the query processing is pushed to the SAP BW server to ensure the best possible performance and also reduce the amount of data that the SAP BW server needs to send to the client data source.

Most companies have a heterogeneous data environment. They will often have a combination of data warehousing products, including products such as Oracle, DB2, Teradata, and SAP BW. Oracle, DB2 and Teradata all have ODBC drivers to enable open, standards-based data access, and many tools, like IBM's WebSphere Federation Server, work across all of these products to enable data analysis across an organization. However, many companies today also have SAP BW.

If you wish to integrate or federate data across a heterogeneous data environment inclusive of SAP BW, it presents a challenge. For example, a company like IBM has invested heavily in products like WebSphere Federation Server to allow for enterprise-wide data access in a homogenous environment. The challenge is that there is an industry-wide hole around connectivity to SAP BW. Since SAP BW sits on top of an RDBMS, like DB2 or Oracle, most companies have just accessed the SAP BW data directly in the underlying tables. This takes a lot of work, but it is possible – albeit with a healthy dose of caution explained earlier. Today, many corporate policies frown upon direct access because it violates the security model in SAP BW. Therefore, since WebSphere Federation Server can access ODBC data sources, if we present SAP BW as an ODBC data source, eureka, you have federation across your organization. You can access your data and also maintain security within SAP BW.

RelationalCube simply solves the SAP BW connectivity challenge. The product itself incorporates Simba's SAP connectivity expertise with Simba's patented magic for SQL to MDX conversion. Most importantly, it provides a solution that works within typical SAP license models, maintains the power and integrity of an SAP data solution, and best ensures security to meet corporate governance directives.

So, how is it that no one has been able to build an ODBC driver for SAP BW before? Well, the problem has been how to translate SQL Language queries to the MDX Language. This is where Simba's expertise really comes to play. Simba was a pioneer in the ODBC Driver market and understands ODBC and the SQL Language very well. Simba was also a pioneer in the OLE DB for OLAP (ODBO) and XML for Analysis (XMLA) market and understands the MDX Language very well. Combined, Simba's corporate know-how, history of innovation and in-depth SAP knowledge made RelationalCube for SAP BW possible.

To learn more about RelationalCube, visit Simba at: <http://www.simba.com>.



## About the Author

Amyr Rajan is President and CEO of Simba Technologies Inc. Amyr has over 15 years experience in custom software development, and is responsible for driving Simba's success as a leader in data connectivity solutions.

Simba Technologies Inc. is the recognized world leader in standards-based data access products and solutions. Simba works with the world's leading software companies to deliver first class data connectivity solutions.

Simba is a pioneer in ODBC, MDX, ODBO and XMLA. Since 1991, Simba has developed advanced data access solutions for thousands of end users. Today, more than half of all MDX providers have been built with Simba technology, and through a partnership with Microsoft, Simba's SQL technology has been installed on more than 30 million desktops worldwide.

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