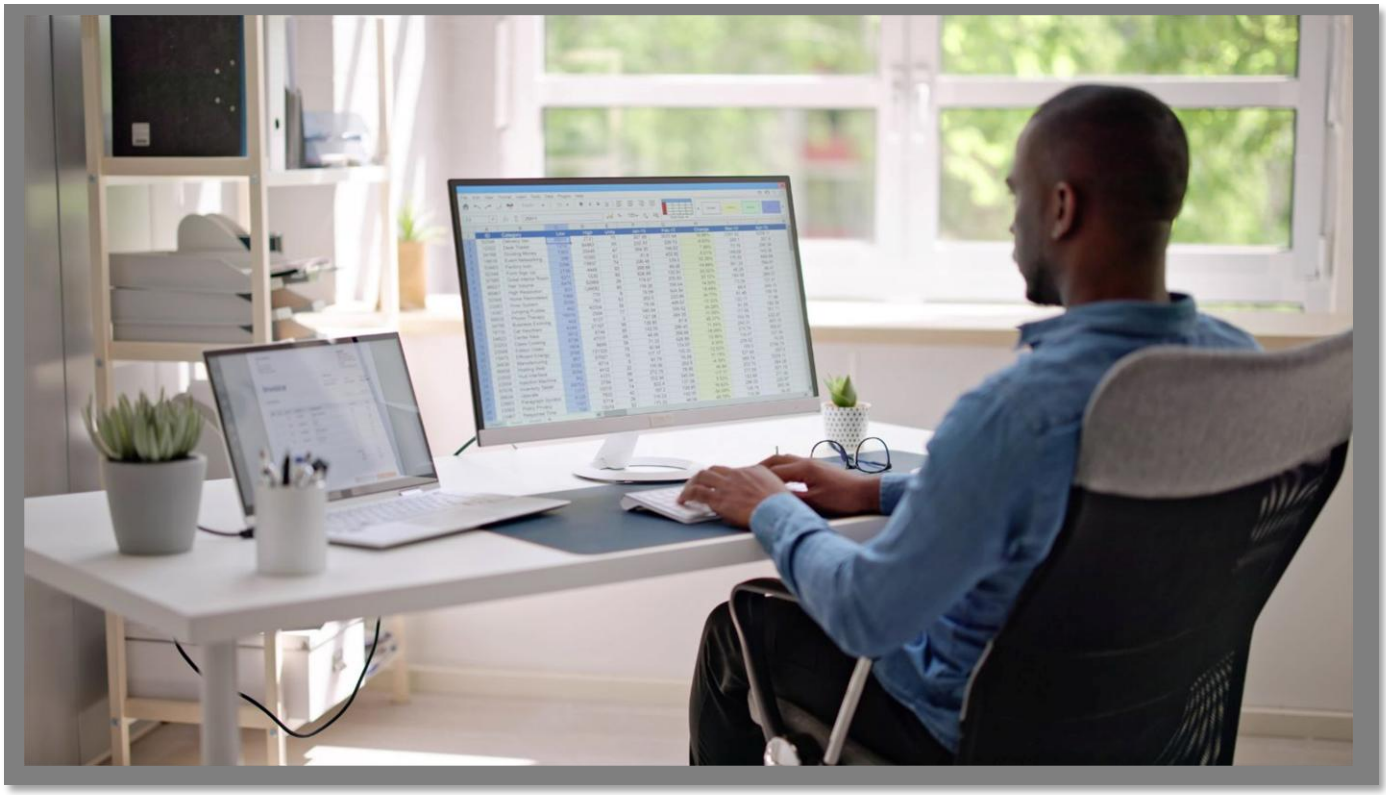
Arbutus Connectors

SAP HANA
CONFIGURATION GUIDE



ARBUTUS
Powerful Analytics Simplified

Contents

Arbutus Connector – SAP HANA

A. Introduction

The purpose of this Guide is to provide assistance with configuring the Arbutus SAP HANA Connector using the ODBC Data Source Administrator. The configuration process can involve several technical steps that require a good understanding of IT systems and database management.

To make the most of this guide, it's advisable to have a good understanding of database connectivity, driver installation, and system settings. The ODBC Data Source Administrator, which is used as part of the configuration process, allows for the setup and management of data sources, enabling applications to access data from various database systems.

Due to the complexity and potential impact of these configurations, it is recommended that only those individuals with IT or database expertise undertake this task. In addition, it should also be understood that each client's network environment is different. A one-size-fits-all approach is rarely effective, as what works well in one environment may not be suitable in another.

B. About SAP HANA System

SAP HANA (*H*igh-performance *AN*alytic *A*ppliance) is an in-memory, column-oriented, relational database management system developed by SAP. It stores data in its memory rather than on disk, which allows for extremely fast data processing and real-time analytics. This design enables advanced analytics and high-speed transactions within a single system. SAP HANA is known for its ability to handle large volumes of data with near-zero latency, making it ideal for applications requiring real-time data processing, such as predictive analytics, customer experience management, and more.

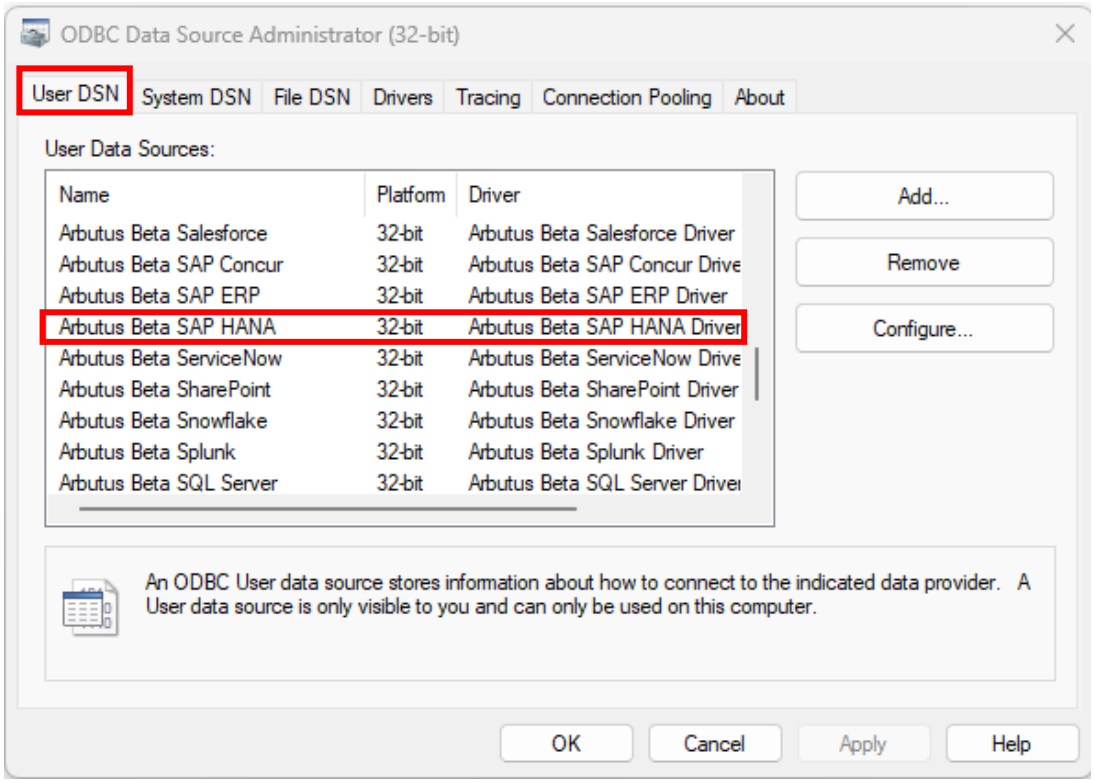
Unlike traditional databases, SAP HANA stores data in RAM (in-memory processing) instead of disk. It uses a columnar data model, which improves query performance and compression.

C. Determining if the Connector exists prior to configuring

Installation of the Arbutus SAP HANA Connector is done at the time of installing the Arbutus software. For more information on this, please see the **Overview Guide Document**.

Once the Connector has been installed, the next step is to configure it.

Prior to configuring it, you can check to see if the Connector has been installed by opening the **32-bit ODBC Data Source Administrator**, pictured below, and clicking the **User DSN** tab. Included below is information on how you can access the **ODBC Data Source Administrator**.



- If the Arbutus SAP HANA Connector appears in the list, it can be considered as installed.
- If it is not listed, it is likely that you did not select it during the installation or modification of the Arbutus software. In this case, it is recommended to reinstall the Arbutus software and choose the **Modify** option when prompted. For more details, please refer to the **Overview Guide Document**.

Below is the file path to access and run the **ODBC Data Source Administrator** application:

C:\Windows\SysWOW64\odbcad32.exe

Alternative, you can also try locating and opening the **ODBC Data Source Administrator** application by doing a search on your desktop application.

D. Configuring the Connector after it has been installed

Once you have verified that the Arbutus Connector has been installed, it is time to configure it.

This process is done using the **ODBC Data Source Administrator**. It can be described as "**editing the DSN configuration"**.

DSN, Drivers, and Data Sources
What is a DSN? DSN stands for Data Source Name, and is a unique name used to create a data connection to a database using open database connectivity (ODBC). A DSN is a data structure that contains the information required to connect to a database. It is essentially a string that identifies the source database, including the driver details, the database name, and often authentication credentials and other necessary connection parameters. DSNs facilitate a standardized method for applications to access databases without needing hard-coded connection details, enhancing flexibility and scalability in database management.

Arbutus Connectors

- ***Drivers*** are the components that process ODBC requests and return data to the application. If necessary, drivers modify an application's request into a form that is understood by the data source. The **Drivers** tab in the **ODBC Data Source Administrator** dialog box lists all drivers installed on your computer, including the name, version, company, file name, and file creation date of each driver.

- ***Data sources*** are the databases of files accessed by a driver and are identified by a data source name (DSN). You use the ODBC Data Source Administrator to add, configure, and delete data sources from your system.

All ODBC connections require that a DSN be configured to support the connection. When a client application wants to access an ODBC-compliant database, it references the database using the DSN.

The types of DSNs are:

- **User DSN** – User DSNs are local to a computer and can be used only by the current user. They are registered in the HKEY_Current_USER registry subtree.

- **System DSN** – System DSNs are local to a computer rather than dedicated to a user. The system or any user with privileges can use a data source set up with a system DSN. System DSNs are registered in the HKEY_LOCAL_MACHINE registry subtree.

- **File DSN** – File DSNs are file-based sources that can be shared among all users who have the same drivers installed and therefore have access to the database. These data sources need not be dedicated to a user nor be local to a computer. File data source names are identified by a file name with a .dsn extension.

User and system data sources are collectively known as *machine* data sources because they are local to a computer.

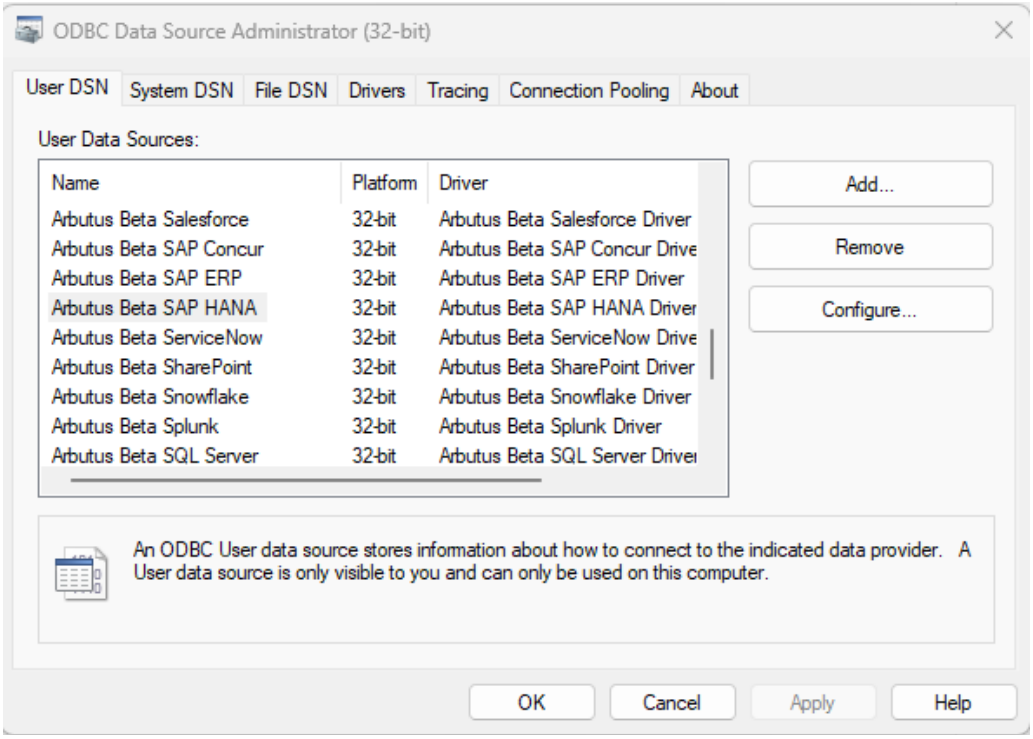
Each of these DSNs has a tab in the **ODBC Data Source Administrator** dialog.

The Arbutus ODBC Driver for SAP HANA enables real-time access to SAP HANA data, directly from any applications that support ODBC connectivity, the most widely supported interface for connecting applications with data.

Arbutus Connectors

Follow these steps to edit the DSN configuration and configure the Connector.

1. First open the **ODBC Data Source Administrator**.



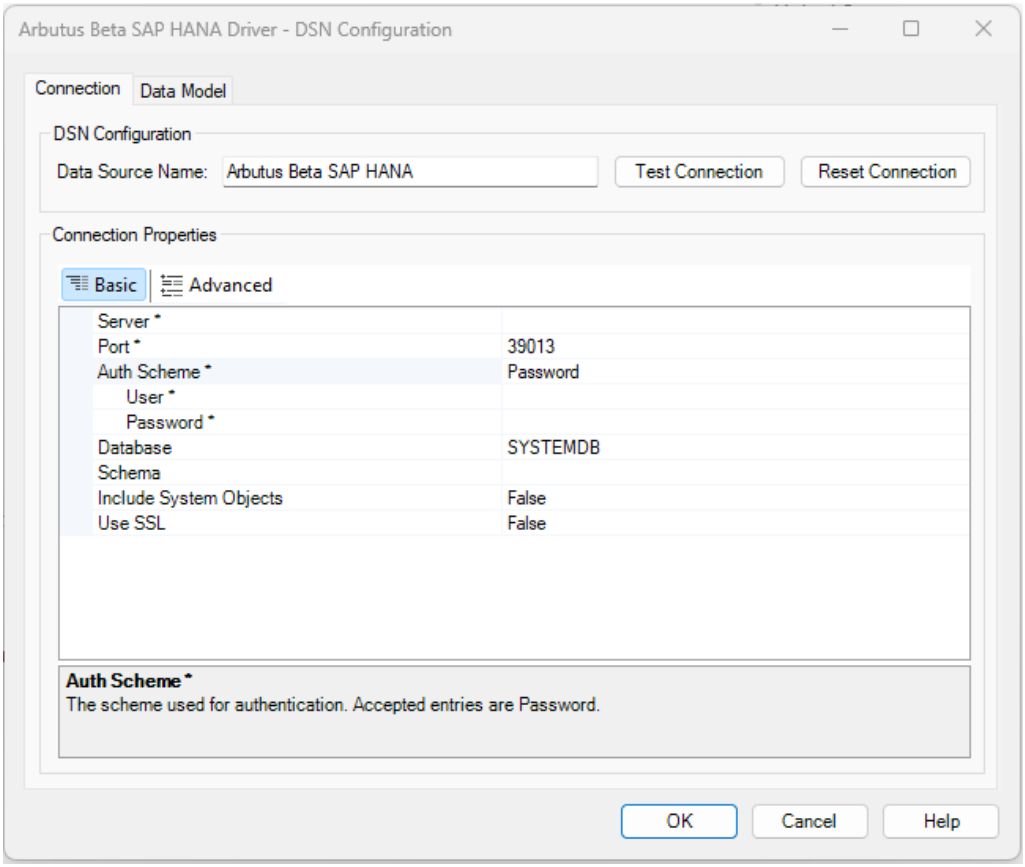
2. Click the **User DSN** tab.

   Selected data connectors are installed as **User DSN's** in Window's 32 Bit **ODBC Data Source Administrator**.

   Also, each of the data connector's names is prefaced with Arbutus, for example, **Arbutus SAP HANA.**

3. Select the Arbutus Connector, in this case it is **Arbutus SAP HANA**.
4. Click **Configure**.

This opens the **Arbutus SAP HANA Driver – DSN Configuration** dialog.



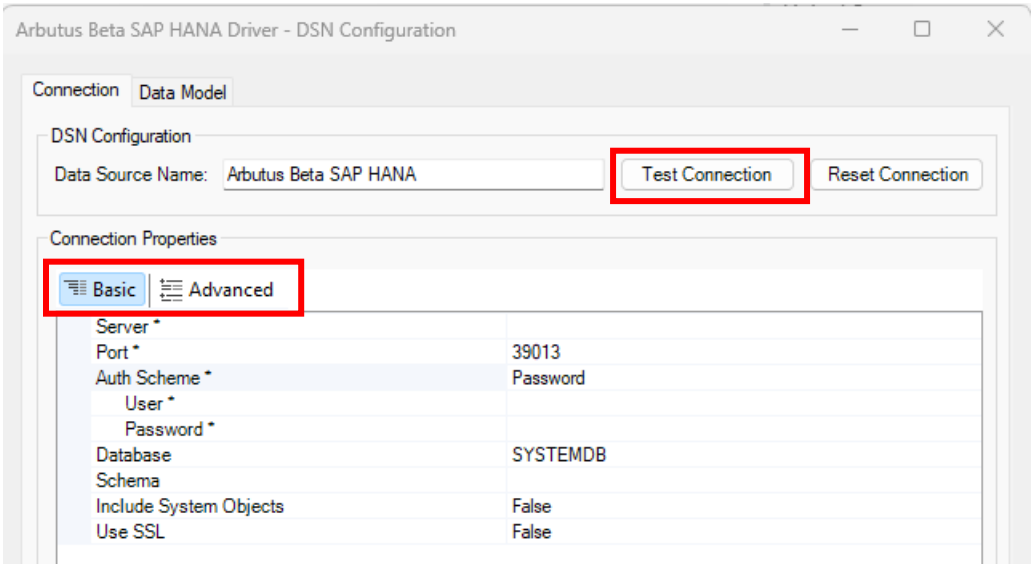
E. Editing the DSN properties – the Basic and Advanced tabs

With the DSN Configuration dialog open, the next step is to edit the DSN properties, where necessary, in the **Basic** and **Advanced** tabs. For example, editing the **39013** entry for the **Port** (per screenshot below) to match the number by which the target system is defined.

E1. Editing the DSN properties in the Basic tab

The properties listed in the **Basic** tab are typically the ones that are most commonly used, and as such are designed to be more user-friendly and straightforward, allowing you to quickly make changes without needing in-depth technical knowledge.

Once you have completed editing the properties on the **Basic** tab, you can go ahead and try testing the connection to the SAP HANA system by clicking the **Test Connection** button, as highlighted in the screenshot below.



On the **Basic** tab, there are **seven** main properties to review:

1. **Server** – this is the name of the server running SAP HANA database or the network address of the SAP HANA database instance.

2. **Port** – this is the port of the SAP HANA database.

   The default value is 39013.

3. **Auth Scheme** – this is the scheme used for authentication. Select from the dropdown the appropriate scheme to be used. The options available are:
   - Password – select this option if you are using **standard username and password authentication**. This method requires a username and password to authenticate to the SAP HANA database.

Selecting **Password** requires you to specify the following:

- User – this is the SAP HANA user account used to authenticate. Together with **Password** (see below), this field is used to authenticate against the SAP HANA server.

- Password – this is the password used to authenticate the user. The **User** (see above) and **Password** are together used to authenticate with the server.

The default value is **Password**.

- OKTA – OKTA is a third-party identity and access management service that can be integrated with SAP HANA and other SAP services for authentication and single sign-on (SSO) purposes. Okta helps manage user identities and provides secure access to applications, including those hosted on SAP HANA, by leveraging protocols like SAML and OAuth.

  Selecting **OKTA** requires you to specify the following:

  - User – this is the SAP HANA user account used to authenticate. Together with **Password** (see below), this field is used to authenticate against the SAP HANA server.

  - Password – this is the password used to authenticate the user. The **User** (see above) and **Password** are together used to authenticate with the server.

  - SSO (single sign on) Properties – additional properties required to connect to the identity provider in a semi-colon – separated list.

Here are the key SSO properties you should enter in response to the **SSO Properties** property:

a. SSOLoginURL – this is the URL for the OKTA log in page. It directs the authentication request to OKTA.

b. MFAType (optional) – if multi-factor authentication (MFA) is required, specify the type of MFA. Possible values include OKTAVerify, Email, SMS, etc.

c. APIToken (optional) – if you are using an API token for authentication, provide the token here. This is typically used for trusted applications.

Here is an example of an entry in **SSO Properties**, entered in a semi-colon – separated list.

'SSOLoginURL= https://your-okta-domain.okta.com; MFAType=OKTAVerify; APIToken=your-api-token';

4. **Database** – this is the name of the SAP HANA database running on the specified **Server** (see above).

   The default is **SYSTEMDB**.

5. **Schema** – this is the schema of the SAP HANA database.

6. **Include System Objects** – this is a True / False selection. Select the appropriate value, based on following determination:
   - Set this to True to fetch HANA system schema and tables.

   By default, this property is set to False to avoid listing the large number of system tables in the metadata listing.

   The default value is **False**.

7. **Use SSL** – this is a True / False selection. Select the appropriate value, based on following determination:
   - This field sets whether SSL is enabled.

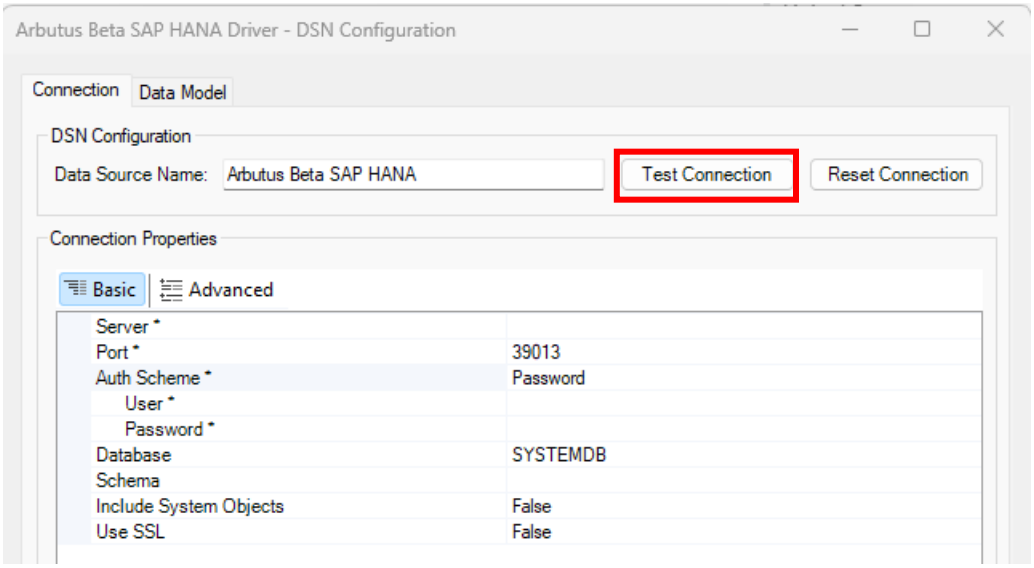
   This field sets whether the driver will attempt to negotiate TLS/SSL connections to the server. By default, the driver checks the server's certificate against the system's trusted certificate store.

   The default value is **False**.

E2. Editing the DSN properties in the Advanced tab

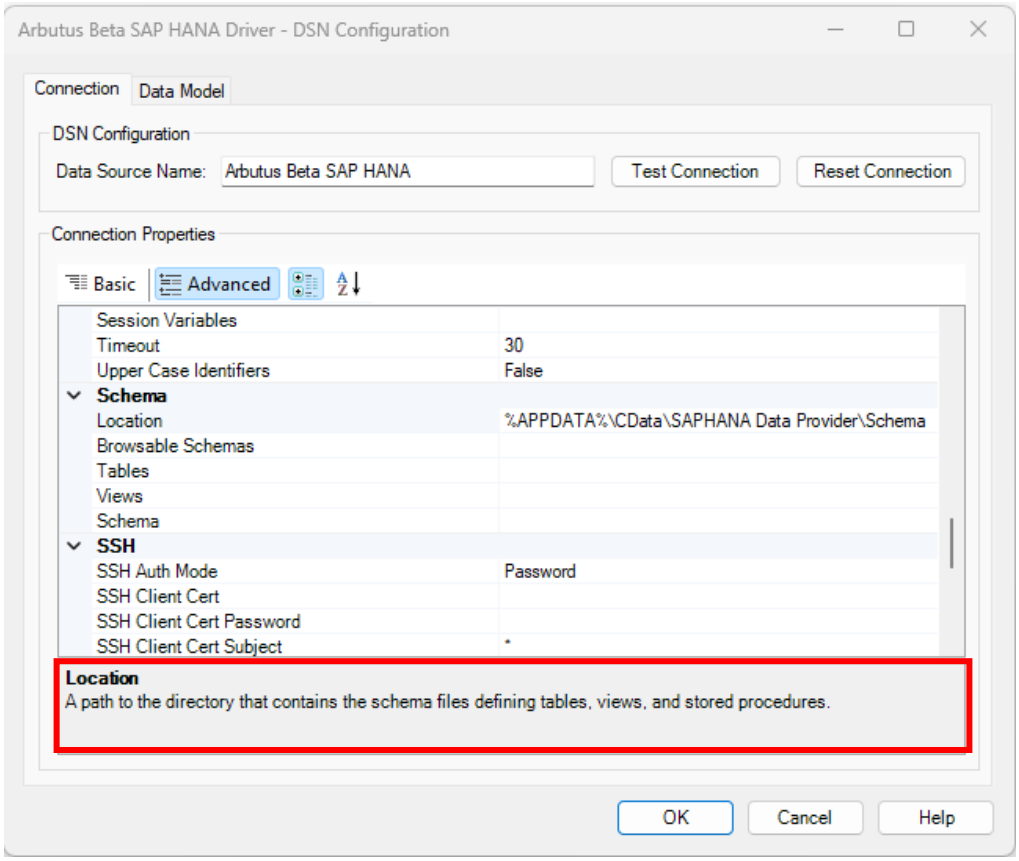
This tab includes more detailed and technical properties. It is intended for those users who need more control over the configuration and are comfortable with more complex options. The **Advanced** tab often includes properties that can fine-tune the behaviour of the system feature.

If you have already completed editing the properties in the **Basic** tab, as required, you do not necessarily need to also complete editing the properties in the **Advanced** tab. Instead, once you have completed editing the properties in the **Basic** tab, you may opt to proceed to testing the connection to the SAP HANA system by clicking the **Test Connection** button.



There are a lot more properties included for editing in the **Advanced** tab.

However, it is useful to know that each property does provide a short description of it and as such serves as a guide in terms of what to edit and/or enter. This short description can be seen at the bottom of the **DSN Configuration** dialog box, as seen in the screenshot below.



If it is deemed necessary to complete some/all the properties in the **Advanced** tab, it is recommended that you refer to the description shown for any of the properties being edited and/or entered.

If required, more information on the properties listed in the **Advanced** tab can also be provided.

F. Other questions and/or request for assistance

There may be times when you need to consult with the technical support team at Arbutus Software. If so, please send an email request to support@ArbutusSoftware.com.

For more information, please refer to the CONTACT US page on our website.