



How to connect to Denodo Virtual DataPort from IBM Websphere

Revision 20200803

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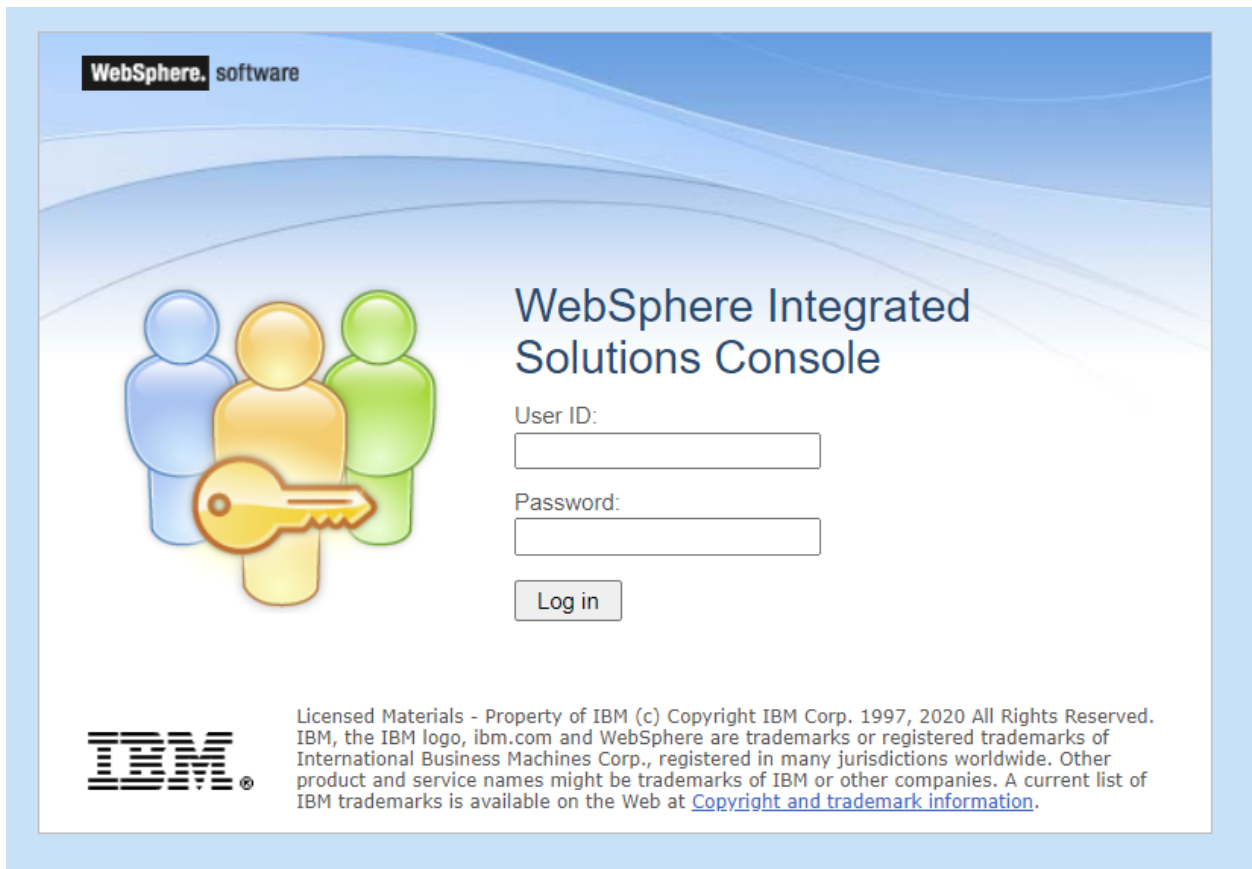
1 GOAL

This document explains how to create a JDBC Provider and JDBC Data Source in IBM Web Sphere, which can be used by enterprise applications to connect to Denodo Virtual DataPort.

2 CONTENT

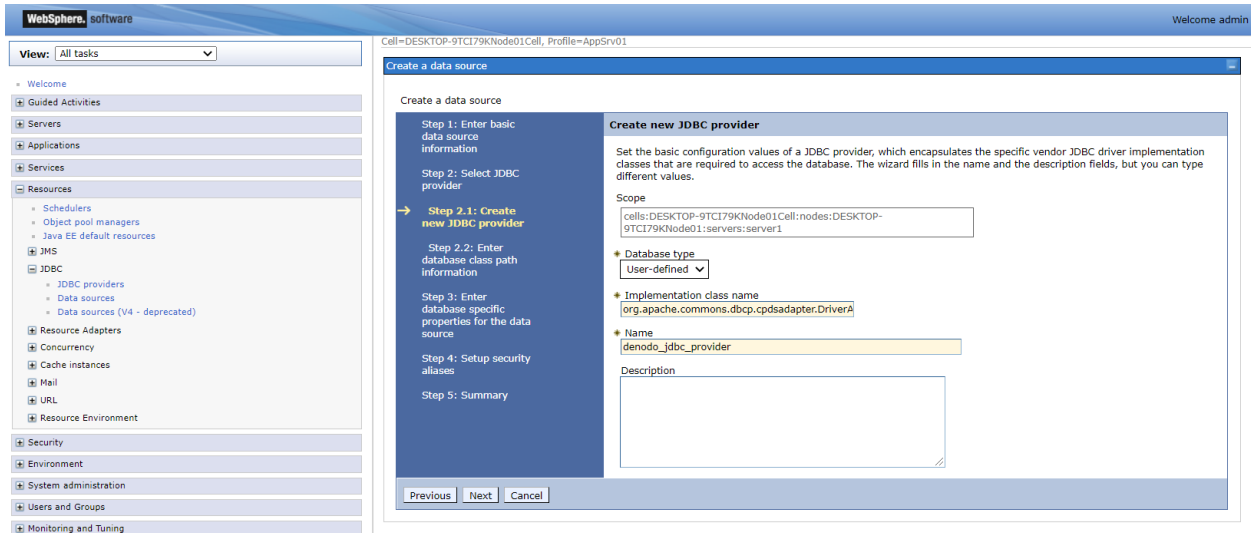
2.1 CREATE A JNDI DATA SOURCE THAT CONNECTS TO DENODO

1. Copy the Denodo JDBC driver and required libraries to the server where IBM WebSphere is running:
 - 1.1. Create the `<WEBSPPHERE_HOME>/AppServer/lib/denodo_jdbc_driver/` directory
 - 1.2. Copy the following files to the folder created in the previous step:
 - `<DENODO_HOME>/tools/client-drivers/jdbc/denodo-vdp-jdbcdriver.jar`
 - `<DENODO_HOME>/lib/contrib/commons-dbcj.jar`
 - `<DENODO_HOME>/lib/contrib/commons-pool.jar`
 - `<DENODO_HOME>/lib/contrib/log4j-api.jar`
 - `<DENODO_HOME>/lib/contrib/log4j-core.jar`
 - `<DENODO_HOME>/lib/contrib/log4j-slf4j-impl.jar`
 - `<DENODO_HOME>/lib/contrib/commons-lang.jar`
2. Open the **WebSphere Integrated Solutions Console** (by default, `https://localhost:9043/ibm/console/logon.jsp`) and log in.



3. Go to the **Data Sources configuration page**:
 - **Resources > JDBC > Data sources**
4. Select the Scope of the new provider. Scope specifies the level at which the resource definition is visible. If you are not sure about the correct scope value then select the last element in the drop down list. For eg: Node=**DESKTOP-9TCI79KNode01**, Server=**server1**
5. Click on **New...** and provide a name under **Data source name** and to the **JNDI name**, for instance
 - Data source name: **denodo_jdbc_data_source**
 - JNDI name: **jndi/denodo_jdbc_data_source**
6. Click on **Next**.
7. Select **Create new JDBC provider** and click **Next**.
8. Create the new JDBC Provider with the following information:
 - **Database type:** User-defined
 - **Implementation** **class** **name:**
 org.apache.commons.dbcp.cpdsadapter.DriverAdapterCPDS (in order to use connection pooling.)
 - **Name:** denodo_jdbc_provider

● **Description.**



9. Click on **Next**.

10. Add the following files to the Classpath. These are the same files added to the websphere server in the first step.

```

${WAS_LIBS_DIR}/denodo_jdbc_driver/denodo-vdp-jdbcdriver.jar
${WAS_LIBS_DIR}/denodo_jdbc_driver/commons-pool.jar
${WAS_LIBS_DIR}/denodo_jdbc_driver/commons-dbcp.jar
${WAS_LIBS_DIR}/denodo_jdbc_driver/commons-lang.jar
${WAS_LIBS_DIR}/denodo_jdbc_driver/log4j-api.jar
${WAS_LIBS_DIR}/denodo_jdbc_driver/log4j-core.jar
${WAS_LIBS_DIR}/denodo_jdbc_driver/log4j-slf4j-impl.jar

```

11. Click on **Next**.

12. Clear the checkbox **Use this data source in container managed persistence (CMP)**.

13. Click on **Next** and **Finish**.

14. Click on **Save directly to the master configuration**.

2.2 **CONFIGURE THE NEW DATA SOURCE**

Now, we are going to configure the custom properties of the data source in order to connect to a Denodo Virtual Database.

1. Open the **Data Sources configuration page**:
 - **Resources > JDBC > Data sources > Data source name**

2. Click on **Custom properties.**

Select	Name	Value	Description	Required
<input type="checkbox"/>	freeResourcesOnClose	false	Controls whether or not the application server automatically frees Arrays, Blobs, Clob, NClob, SQLXML, InputStream, and Reader when the object that created them is closed. The ability to free resources is contingent on the JDBC driver supporting the free (or close) method.	false
<input type="checkbox"/>	userDefinedErrorMap		Overlays existing entries in the error map by invoking DataSourceHelper.setUserDefinedMap. The userDefinedErrorMap can be used to add, change, or remove entries from the error map. Entries are delimited by ; (semicolon). Each entry consists of a key and value, where the key is an error code (numeric value) or SQLState (text enclosed in double quotes). Keys and values are separated by = (equals sign). Please refer to WebSphere Information Center for more details.	false
<input type="checkbox"/>	beginTranForResultSetScrollingAPIs	false	If beginTranForResultSetScrollingAPIs is enabled, the application server attempts to begin a transaction or enlist in a transaction when the connection is not currently enlisted in a transaction and a result set scrolling operation is performed.	false
<input type="checkbox"/>	beginTranForVendorAPIs	false	If beginTranForVendorAPIs is enabled, the application server attempts to begin a transaction or enlist in a transaction when the connection is not currently enlisted in a transaction and a vendor API is invoked with the wrapper pattern or with WSCallHelper.jdbcCall or WSCallHelper.jdbcPass.	false
<input type="checkbox"/>	connectionSharing	1	Determines whether connections are shared based on the current state of the connection (-1) or the original connection request (0). To specify with greater granularity which connection properties are matched based on the current state, you may combine the following constants by adding them together: 1=transaction isolation level, 2=read only, 4=holdability, 8=type map, 16=catalog.	false
<input type="checkbox"/>	jdbcQueryTimeoutWithTransactionTimeout		Use the time remaining (if any) in a JTA transaction as the default query timeout for SQL statements.	false
<input type="checkbox"/>	webSphereDefaultIsolationLevel		Specifies a default transaction isolation level for new connections. Resource References and Access Intents override this value. To configure a default transaction isolation level, use the constants defined by JDBC: 1 (READ UNCOMMITTED), 2 (READ COMMITTED), 3 (REPEATABLE READ), 4 (SERIALIZABLE).	false

3. Edit the value of the following properties. If these properties doesn't exist, you can add them by clicking on 'New':

Property name	Property value
user (in the second page)	<VDP user name>
password	<VDP password>
url (in the second page)	jdbc:vdb://<hostname>:<port>/<database>
driver	com.denodo.vdp.jdbc.Driver

<input type="checkbox"/>	user	admin		false
<input type="checkbox"/>	password	*****		false
<input type="checkbox"/>	url	jdbc:vdb://localhost:9999/admin		false
<input type="checkbox"/>	driver	com.denodo.vdp.jdbc.Driver		false

4. Click on **Save directly to the master configuration.**

Cell=DESKTOP-9TCI79KNode01Cell, Profile=AppSrv01

Data sources

Use this page to edit the settings of a datasource that is associated with your selected JDBC provider. The datasource object supplies your application with connections for accessing the database. Learn more about this task in a [guided activity](#). A guided activity provides a list of task steps and more general information about the topic.

[-] Scope: Cell=DESKTOP-9TCI79KNode01Cell, Node=DESKTOP-9TCI79KNode01, Server=server1

Scope specifies the level at which the resource definition is visible. For detailed information on what scope is and how it works, [see the scope settings help](#).

Node=DESKTOP-9TCI79KNode01, Server=server1

[-] Preferences

New... Delete Test connection Manage state...

Select	Name	JNDI name	Scope	Provider	Description	Category
You can administer the following resources:						
<input type="checkbox"/>	DefaultApp_Datasource	DefaultDatasource	Node=DESKTOP-9TCI79KNode01,Server=server1	Derby JDBC Provider	Datasource for the WebSphere Default Application	
<input checked="" type="checkbox"/>	denodo_jdbc_data_source	jndi/denodo_jdbc_data_source	Node=DESKTOP-9TCI79KNode01,Server=server1	denodo_jdbc_provider	New JDBC Datasource	
Total 2						

5. Select the Data source and click on **Test connection**. The result of the test should be:
 - *"The test connection operation for data source denodo_jdbc_data_source on server <Server name> at node <Node name> was successful"*

3 REFERENCES

- [Apache Commons DBCP](#)
- [WebSphere Application Server Data Source Properties](#)