Explore the COVID-19 data using your favorite tool

This document will guide you to explore the COVID-19 data sets using a REST API, JDBC Driver, ODBC Driver, BI Tool, the Denodo Data Catalog or the Denodo Administration Tool
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Overview

The Denodo Virtual DataPort server offers many methods of connection for client applications and users:

- For users that want to search and select data within the Virtual DataPort server, Denodo provides the user friendly Data Catalog.
- You can access Denodo Covid-19 Virtual Database using your preferred BI tool either via the native Denodo connectors distributed by the BI tool vendors.
- For accessing the data from a client application, the Denodo Virtual DataPort server offers connection methods such as JDBC, ODBC, and RESTFUL web services to retrieve the data.
- You can also use the Denodo Administration Tool to create your own datasets and combine them with the data we provide.

Please substitute the following properties when you connect to the datasets:

- `<DBC_SERVER_DNS>`: dataport.open.denodo.com
- `<DATA_SERVICES_DNS>`: dataservices.open.denodo.com
- `<DATABASE_NAME>`: covid_19_data
- `<user_name>`: cdm_guest
- `<password>`: cdm_guest0325

Using RESTFUL interface

Denodo RESTful Web service

The Denodo RESTful Web service is an HTTP service deployed in the following URL:
https://dataservices.open.denodo.com/denodo-restfulws

This service exposes resources like databases and views in the following standard representation formats:

- XML
- JSON
- HTML (more user-friendly)

You can select the output data format by passing the following parameter in the endpoint URL

$format with the following type value (xml, json, html)
For example:

You can connect to the web service by entering the URL in your browser. A popup will appear; enter the username and password for the Denodo COVID-19 server:
- User: cdm_guest
- Password: cdm_guest0325

Using the RESTful Web service, you can list the views in a database and query the views to retrieve the data. To list views contained in a Virtual Database, you can add the name of the database to the end of the RESTful Web service URL. To access the <DATABASE_NAME> database you would use the following URL:
https://dataservices.open.denodo.com/denodo-restfulws/<DATABASE_NAME>$format=<type>

To query a view, you can add “/views/” and the view name after the database name in the URL:
https://dataservices.open.denodo.com/denodo-restfulws/<DATABASE_NAME>/views/<VIEW_NAME>$format=<type>

You can add filters to the views by adding a question mark and a filter statement:

The format of the returned data can be changed by adding “$format=<FORMAT_TYPE>”. For example, to return the above query in JSON format instead of HTML, you could navigate to the following URL:
We have included a list of datasets included in the Denodo COVID-19 Virtual DataPort server below. You can access the data from these in HTML, XML or JSON format by opening the corresponding links in the table.

Additional References

Denodo REST APIs are Swagger-compliant, so they can be consumed through swagger editors. For example, you can use the following Swagger editor to help you understand the Denodo RESTFUL API:

https://editor.swagger.io/


Example:

Restful web services Official documentation
https://community.denodo.com/docs/html/browse/latest/vdp/administration/restful_architecture/restful_web_service/restful_web_service

RESTFUL Web service tutorial
https://community.denodo.com/tutorials/browse/dataservices/4invocation

Creating a JDBC connection

The preferred method of connection to the Virtual DataPort server is through a JDBC connection; it has better performance than the other client connections.
Configuring the Connection

To connect to the Virtual DataPort server, you will need the Denodo JDBC driver and the URI of the Virtual DataPort server.

To download the Denodo JDBC driver, go to this page of the Denodo Community (https://community.denodo.com/drivers/jdbc/).

After you have included the JDBC .jar file in your client application, you will need the connection details to connect to the Virtual DataPort server; the connection details to connect to the Denodo Virtual DataPort server with JDBC are the following:

- **Driver class**: com.denodo.vdp.jdbc.Driver
- **Connection URL**: 
  
  $\text{jdbc:vdb://dataport.open.denodo.com:9999/covid_19_data?reuseRegistrySocket=false\&wanOptimized=true}$

- **User**: cdm_guest
- **Password**: cdm_guest0325
For example, to create a new JDBC connection to Denodo using **DBeaver**:

- Go to Database -> Driver Manager -> New and create a new Driver using the connection details specified before:

- Now Create a new connection and select the new driver scrolling under 'Other':
Provide the user and password and click ‘Test Connection’ to verify it is working.

Connection Notes

Some additional notes about connections to the Virtual DataPort server:
- Specifying a Virtual Database is mandatory in the URI field.
- The connection URL only specifies one port (9999). However, the JDBC driver also opens a connection to the Auxiliary port of the Virtual DataPort server (port 9997). Please ensure that your client application can connect to both of these ports. For more information about these connections, you can reference the [Virtual DataPort Connectivity](https://community.denodo.com/kb/view/document/Virtual%20DataPort%20Connectivity?category=Operation) page of the Denodo Knowledge Base.

Additional References

For more information about connecting to the Virtual DataPort server with JDBC, you can reference the [Access through JDBC](https://community.denodo.com/kb/view/document/Virtual%20DataPort%20Connectivity?category=Operation) section of the Denodo Virtual DataPort Developer Guide.
Creating an ODBC connection

Denodo recommends that you use JDBC connections to access the data in the Virtual DataPort server, but it also provides ODBC connections for client applications that require it.

Configuring the Connection

This process will be different for Windows and Linux systems. For windows users, please follow the instructions below. For Linux users, you will want to skip to the Configuration for Linux section.

Configuration in Windows

The following steps should be performed on the host with the client application.

Installing the ODBC Driver

1. Install the Denodo ODBC driver. The file can be found on the ODBC page of the Denodo community. Download the Windows driver (ending in -win) and make sure that the driver is not newer than update 20190903.
2. Extract the contents of the .zip file downloaded from the Denodo Community and run the correct installer for your client application:
   - DenodoODBC_x86.msi (folder “msi”) installs the ODBC driver for 32-bit clients.
   - DenodoODBC_x64.msi (folder “msi”) installs the ODBC driver for 64-bit clients.

You can install both drivers on the same host so that all applications (32 and 64 bit) can use the ODBC driver.

Setting up a DSN

After installing the Denodo ODBC driver on the host where the client application runs, you need to register a new data source, also known as DSN, that points to the Denodo server.

Follow these steps to do this:

1. Open the ODBC Data Sources applet of the Windows Administrative Tools (Control Panel). To open it, press the Windows key and enter Set up ODBC data source. There are two dialogs to register an ODBC DSN, one for 32-bit applications and one for 64-bit applications.
2. In the tab User DSN, click Add. When creating the DSN, do it with the same user account you run the application that will connect to Denodo. If that is not possible, create a “System DSN”. Only local administrators of the computer can register a system DSN. If an administrator cannot create the DSN, create a
user DSN. The difference between a “System DSN” and a “User DSN” is that the “User DSN” can only be used by the current user and the “System DSN” can be used by all the users of the system.

3. Select the DenodoODBC Unicode driver (not DenodoODBC ANSI) and click Finish.

4. In the configuration dialog, fill in the following information:
   - Data Source: Choose the DSN you created to connect to Denodo.
   - Database: covid_19_data
   - Server host: dataport.open.denodo.com
   - User: cdm_guest
   - Password: cdm_guest0325
   - Port: 9996
   - SSL Mode: Disabled
The default configuration settings work for connections to Virtual DataPort. For more information about modifying advanced settings, you can reference the Set up the DSN on Windows section of the Virtual DataPort Developer Guide.

For example, to import the data in MS Excel, go to Data -> Get External Data -> From Other Sources -> From Data connection wizard and select the DSN that you have just created.
Configuration for Linux

The Denodo Platform provides an ODBC driver for Linux, which is based on the ODBC PostgreSQL driver. There is one version for the driver manager unixODBC and one for iODBC.

You have to install the Denodo ODBC driver in the machine where the client application runs. To do this, follow these steps:

1. Obtain the appropriate ODBC driver
2. Install unixODBC
3. Register the ODBC driver with unixODBC
4. Register a data source (DSN) that points to Denodo

For an in depth walkthrough for setting up the ODBC connection on a Linux machine, you can reference the Configuration of the ODBC Driver in Linux and Other UNIX page of the Virtual DataPort Developer Guide.

Additional References

For more information on connecting to the Virtual DataPort server with an ODBC connection, you can reference the

For a tutorial on how to set up a connection to Denodo from Tableau, you can reference the following page from the Denodo Community:
https://community.denodo.com/tutorials/browse/bi/3bitool

Connect from Reporting tools matrix:

For a tutorial on how to connect to the Virtual DataPort server with an ODBC client:
https://community.denodo.com/tutorials/browse/basics/4connect2odbcclient

Virtual DataPort Administration Tool

‘Virtual DataPort Administration Tool’ is the client that Denodo administrators and developers use to define the data models and configure the system. It’s similar to tools like SQL Developer, Toad, or SQL
Server Management Studio. If you are familiar with relational databases, it won’t take you long to learn how to use it.

For existing Denodo Customers / Partners:

- Download the Virtual DataPort client from the [support website](http://support.denodo.com).
- Follow the [installation instructions](http://support.denodo.com).

If you are not a Denodo customer:

- Use our [Denodo Express](http://denodo.com). It’s free to download and use (but restricted to 10,000 rows of data)
- Follow the [installation instructions](http://denodo.com) for Denodo Express

You can log in using the following credentials:

- **Login**: cdm_guest
- **Password**: cdm_guest0325
- **Server URI**: //dataport.open.denodo.com:9999/covid_19_data

Once connected, you will see a panel on the left hand side, the Server Explorer, with the existing Denodo virtual databases, data sources, and views that are already available in the server. If you double-click on an object, it will open in a new tab in the workspace area.
To improve the user experience go to Administration Tool: Click Tools > Admin Tool Preferences and select the Connection section. Select the Use WAN optimized communications with the aim of optimizing communications with the Virtual DataPort server.
Now you can go on and explore and execute the different datasets from the left tree.

For more information, check:

- [Denodo tutorials](#)
- [Knowledge base](#)
- [Product documentation](#)