Denodo Templates for SharePoint - Quick Use Guide

Revision 20221219

CONTENTS

1 OVERVIEW

SharePoint Online is a cloud-based service that helps organizations share and manage content, knowledge and applications to:

- Empower teamwork
- Quickly find information
- Seamlessly collaborate across the organization

You can configure Denodo to retrieve OData entities from SharePoint Online by creating a data source using the Denodo OData2 Custom Wrapper and creating a base view for each OData entity. In addition, you can configure Denodo to retrieve data from your SharePoint Online file system by creating JSON data sources and base views in Denodo using the SharePoint API REST.

As SharePoint Online manages a very large amount of data, it may be hard work to add all the required data sources and base views in Denodo. In order to make this process easier and faster, we distribute templates: a set of predefined VQL and properties files. You just have to configure a few parameters in the properties file and import these files into your Denodo server to get access to Sharepoint.

In the case that you require information not available through the templates, have a look at the summary table of all possible accesses to Sharepoint through Denodo of the How to integrate Denodo with Sharepoint Online document.

2 THE SHAREPOINT ONLINE TEMPLATES

The SharePoint Online templates are divided in two different script files:

- `sharepoint_odata_entities_templates_denodo.vql`
- `sharepoint_api_rest_templates_denodo.vql`

The first one contains the data sources and base views for the following SharePoint OData entities:

- Appdata
- Appfiles
- Attachments
- Books
- ComposedLooks
- ConvertedForms
- Documents
- Events
- EventsCategory
- FormTemplates
- ListTemplateGallery
- MaintenanceLogLibrary
- MasterPageGallery
- MasterPageGalleryCompatibleSearchDataTypes
- MasterPageGalleryCompatibleUIVersionS
- MasterPageGalleryStandalone
- MasterPageGalleryTargetControlType
- MasterPageGalleryTargetControlTypeSearch
- MasterPageGalleryTemplateLevel
- SearchConfigList
- SearchConfigListScope
- SharePointHomeOrgLinks
- SitePagesSitePageFlags
- SitePages
- SolutionGallery
- StyleLibrary
- TaxonomyHiddenList
- ThemeGallery
- UserInformationList
- WebPartGallery
- WebPartGalleryGroup
- WebPartGalleryRecommendationSettings

The second contains base views created with the JSON datasources that allow you to navigate through your SharePoint Online file system.

Please note: importing these scripts will create a database called `sharepoint` in your Virtual DataPort installation, and will replace any existing database previously existing with that exact name.

3 GETTING OAUTH 2.0 CREDENTIALS

In order to be able to configure the templates to connect Denodo to your Sharepoint app you must see the **Configuring the application in Azure** section from How to integrate Denodo with Sharepoint Online document.

3.1.1 Create OAuth 2.0 credentials for OData entities templates

In order to create OAuth 2.0 credentials for OData entities templates you must see the **Connecting to Sharepoint using OData /Obtain the OAuth tokens** section from How to integrate Denodo with Sharepoint Online document.

3.1.2 Create OAuth 2.0 credentials for REST API templates

You can use the credentials created in the previous step to get the access token and the refresh token through the OAuth 2.0 wizard of the VDP as explained in the **Get the OAuth tokens using the OAuth credentials wizard** section of the How to integrate Denodo with Sharepoint Online document.

4 SHAREPOINT REST API TEMPLATES

SharePoint includes a REST service that is comparable to the existing SharePoint client object models. Now, you can interact directly with SharePoint objects by using any technology that supports standard REST capabilities.

The VQL configures access to the SharePoint file system using the SharePoint REST API.

4.1 IMPORTING ARTIFACTS

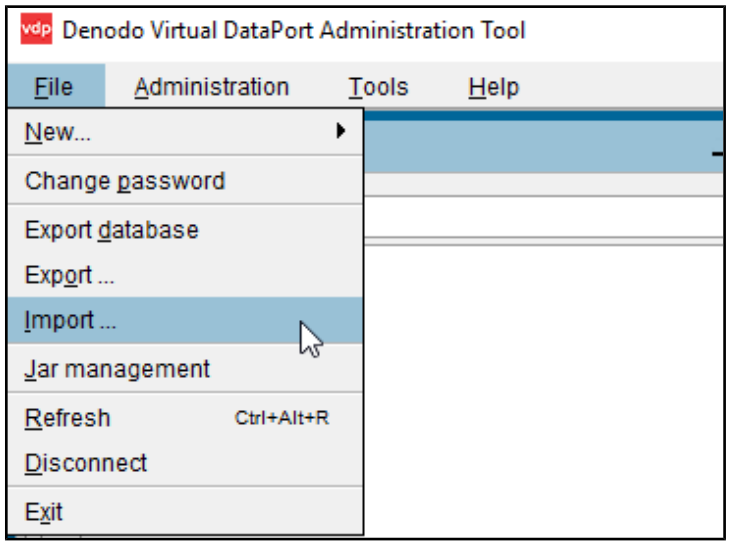
Before importing the VQL in Denodo, you have to set the following parameters defined in the `sharepoint_api_rest_templates_denodo.properties` file:

```
sharepoint.tenant.name=
sharepoint.realm=
sharepoint.client.id=
sharepoint.client.secret=
access.token=
refresh.token=
redirect.uri=
sharepoint.site.name=
view.prefix=
```

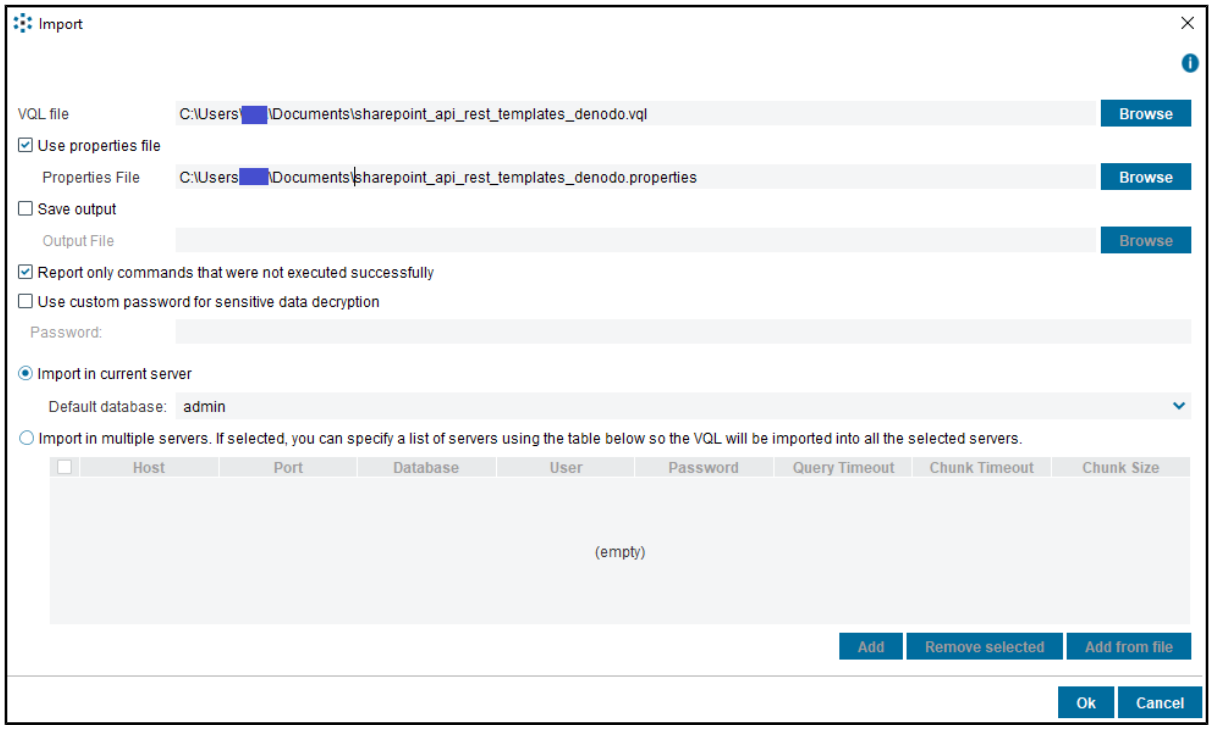
- `sharepoint.tenant.name`: Your SharePoint Online service name.
- `sharepoint.realm`: The `Directory tenant ID`.
- `sharepoint.client.id`: The client id generated in the Adobe Developer Console in the previous step.
- `sharepoint.client.secret`: The client secret generated in the Adobe Developer Console in the previous step.
- `redirect.uri`: The redirect uri you have set when you have registered the app in Azure.
- `access.token`: Provided by VDP Wizard for OAuth 2.0.
- `refresh.token`: Provided by VDP Wizard for OAuth 2.0.
- `sharepoint.site.name`: The site name of the specific SharePoint Online site you want to retrieve lists and folders content.
- `view.prefix`: You can configure the name prefix of every view created in the VDP in order to be able to relate VDP views to SharePoint Online sites. The max length of this parameter is 10 characters.

You can import as many sharepoint_api_rest_templates_denodo.vql scripts as you want for retrieving data from all your SharePoint Online sites. If a long time elapses between importing one script and another, you will have to regenerate the tokens again.

Note: We have used “site2” as the value of the `view.prefix` and “SampleSite” as the value of the `sharepoint.site.name` configuration parameters in the examples shown below.

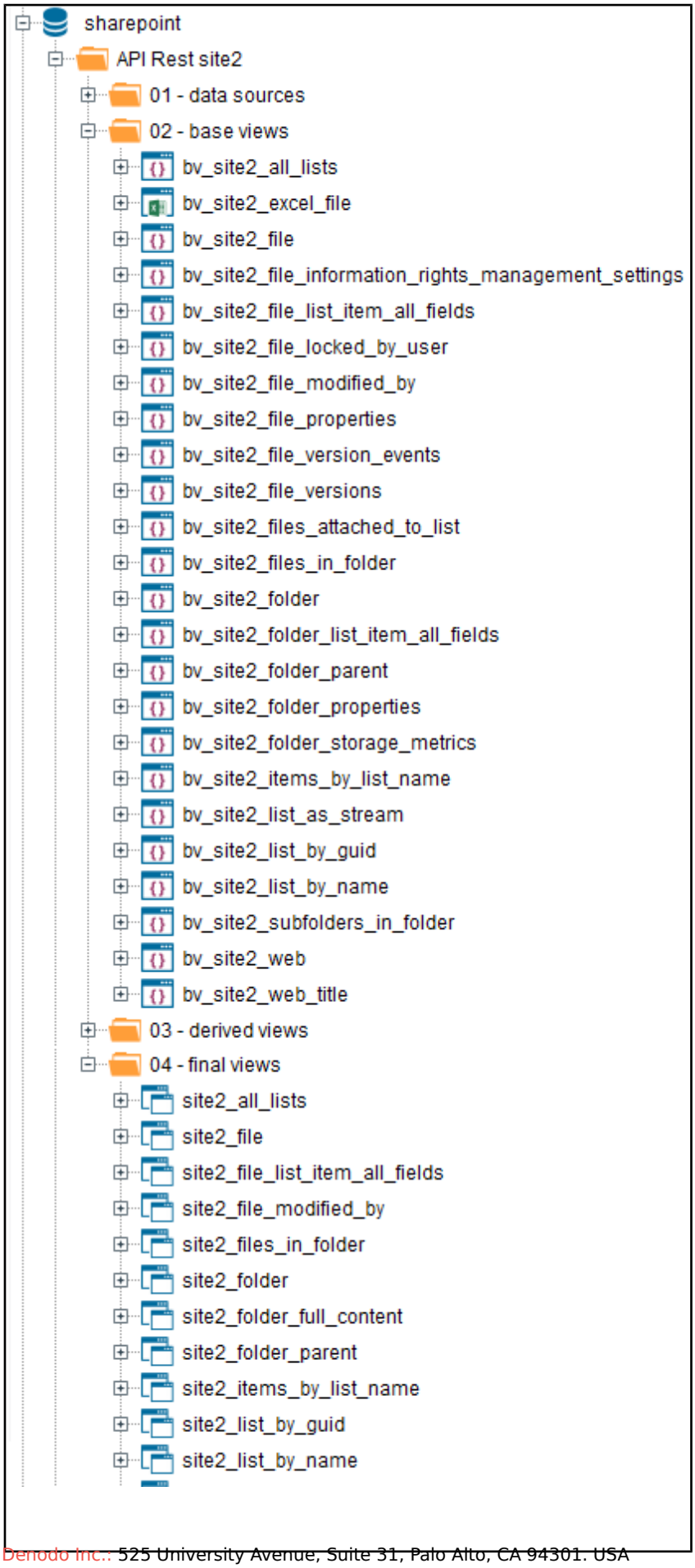


Once you have set the properties file, you only have to import both the properties and the `sharepoint_api_rest_templates_denodo.vql` file using the `Import` option of the VDP Administration Tool:



4.2 REFRESH

After the import operation finishes, refresh the `Server Explorer` by selecting `File > Refresh` and you will be able to see the data sources and views created to access the specified SharePoint Online site lists and folders content.


sharepoint
API Rest site2
01 - data sources
02 - base views
bv_site2_all_lists
bv_site2_excel_file
bv_site2_file
bv_site2_file_information_rights_management_settings
bv_site2_file_list_item_all_fields
bv_site2_file_locked_by_user
bv_site2_file_modified_by
bv_site2_file_properties
bv_site2_file_version_events
bv_site2_file_versions
bv_site2_files_attached_to_list
bv_site2_files_in_folder
bv_site2_folder
bv_site2_folder_list_item_all_fields
bv_site2_folder_parent
bv_site2_folder_properties
bv_site2_folder_storage_metrics
bv_site2_items_by_list_name
bv_site2_list_as_stream
bv_site2_list_by_guid
bv_site2_list_by_name
bv_site2_subfolders_in_folder
bv_site2_web
bv_site2_web_title
03 - derived views
04 - final views
site2_all_lists
site2_file
site2_file_list_item_all_fields
site2_file_modified_by
site2_files_in_folder
site2_folder
site2_folder_full_content
site2_folder_parent
site2_items_by_list_name
site2_list_by_guid
site2_list_by_name

- `${view.prefix}_all_lists`: Retrieving all the lists of the SharePoint site specified in the `sharepoint.site.name` property.

- `${view.prefix}_file`: Retrieving a file.
  - Required parameters:
    - `file_path`: The path to the file.

- `${view.prefix}_file_list_item_all_fields`: Retrieving the value of the ListItemAllFields property of the file.
  - Required parameters:
    - `file_path`: path to the file.

- `${view.prefix}_file_modified_by`: Retrieving the value of the ModifiedBy property of the file.
  - Required parameters:
    - `file_path`: path to the file.

- `bv_${view.prefix}_file_version_events`: Retrieving the value of the VersionEvents property of the file.
  - Required parameters:
    - `file_path`: path to the file.

- `bv_${view.prefix}_file_versions`: Retrieving the value of the Version property of the file.
  - Required parameters:
    - `file_path`: path to the file.

- `bv_${view.prefix}_files_attached_to_list`: Retrieving all the files that are attached to a list item.
  - Required parameters:
    - `list_name`: the name of the list.
    - `item_id`: the id of the item.

- `${view.prefix}_files_in_folder`: Retrieving the files in a folder.
  - Required parameters:
    - `folder_path`: the path of the folder..

- `${view.prefix}_folder`: Retrieving info about the folder.
  - Required parameters:
    - `folder_path`: the path to the folder.

- `${view.prefix}_folder_parent`: Retrieving the value of the ParentFolder property of the folder.
  - Required parameters:
    - `folder_path`: the path to the folder.
    - `property_name`: the name of the property.

- `bv_${view.prefix}_items_by_list_name`: Retrieving all items in a list.
  - Required parameters:
    - `list_name`: the name of the list.

- `bv_${view.prefix}_list_as_stream`: Retrieving items as a stream.
  - Required parameters:
    - `list_name`: the name of the list

- `${view.prefix}_list_by_guid`: Retrieving the details of a list by GUID.
  - Required parameters:
    - `guid`: The list guid.

- `${view.prefix}_list_by_name`: Retrieve a list by name.
  - Required parameters:
    - `list_name`: the name of the list

- `${view.prefix}_subfolders_in_folder`: Retrieving the folders in a folder.
  - Required parameters:
    - `folder_path`: the path to the folder.

- `${view.prefix}_web`: Retrieving the details of the site specified in the `sharepoint.site.name` property.

- `bv_${view.prefix}_web_title`: Retrieving the title of the site specified in the `sharepoint.site.name` property

- `bv_${view.prefix}_excel_file`: Retrieving an excel file.
  - Required parameters:
    - `file_path`: the path of the file to retrieve.

- `${view.prefix}_folder_full_content`: Retrieving both the files and the folders of the folder.
  - Required parameters:
    - `folder_path`: the path of the folder.

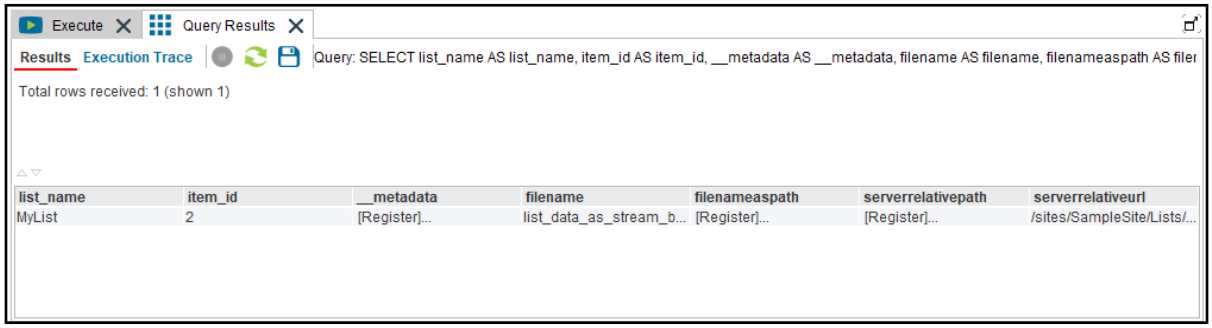
Please note: All paths are relative to `/sites/${sharepoint.site.name}/`.

4.3 QUERY EXAMPLE

Now, you can execute queries on the SharePoint Online views that have been created:

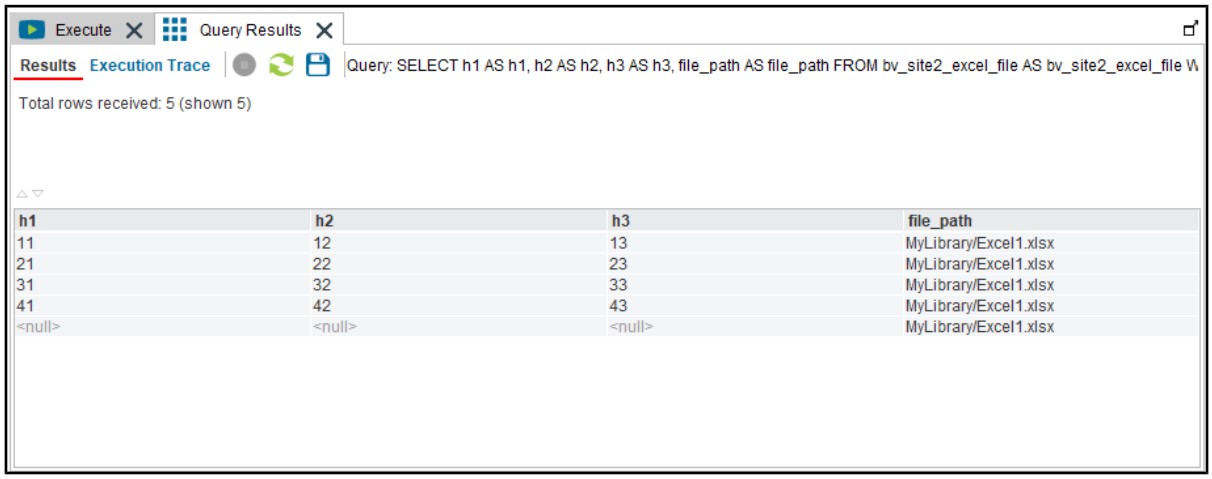
Query 1: Retrieving all the content of the folder 'MyLibrary':

Query 2: Retrieving the files attached to the item 2 attached to 'MyList' list:



Query 3: Retrieving an excel file:

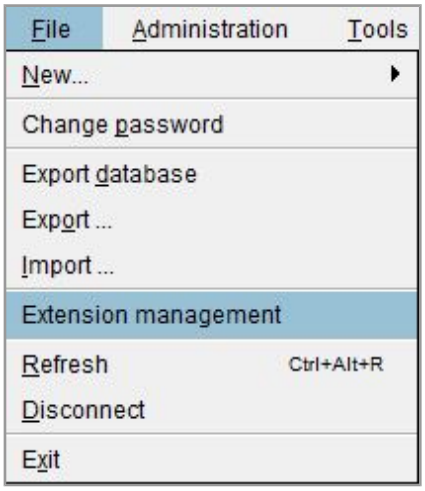

Execute
Query Results
Quick Query
Specify Where Expression
Execute
Query plan
Current sentence:
SELECT * FROM bv_site2_excel_file WHERE file_path = 'MyLibrary/Excel1.xlsx' CONTEXT ('i18n'='us_pst', 'cache_wait_for_load'='true')
Do not use cache
Invalidate existing results
Display rows: 150
Open results in new tab
Store results in cache
Replace rows with the same PK value
Do not use swap
Retrieve all rows
Conditions
file_path
=
'MyLibrary/Excel1.xlsx'


Execute
Query Results
Results
Execution Trace
Query: SELECT h1 AS h1, h2 AS h2, h3 AS h3, file_path AS file_path FROM bv_site2_excel_file AS bv_site2_excel_file W
Total rows received: 5 (shown 5)
h1 h2 h3 file_path
11 12 13 MyLibrary/Excel1.xlsx
21 22 23 MyLibrary/Excel1.xlsx
31 32 33 MyLibrary/Excel1.xlsx
41 42 43 MyLibrary/Excel1.xlsx
<null> <null> <null> MyLibrary/Excel1.xlsx

5 SHAREPOINT ODATA TEMPLATES

5.1 IMPORTING ARTIFACTS

Before importing the VQL into Denodo, you have to download the **Denodo OData 2 Custom Wrapper** and add the `denodo-odata2-wrapper-8.0-{version}-jar-with-dependencies.jar` using the `Extension management` option of the VDP Administration Tool:



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sharepoint.tenant.name=
sharepoint.realm=
sharepoint.audience.principal.id=
sharepoint.client.id=
sharepoint.client.secret=
access.token=
refresh.token=
sharepoint.site.name=
view.prefix=
```

- `sharepoint.tenant.name`: Your SharePoint Online service name.
- `sharepoint.realm`: The realm obtained in the **Get the Realm of the site** section from How to integrate Denodo with Sharepoint Online document.

- `sharepoint.audience.principal.id`: The value of the client id obtained in the **Get the Realm of the site** section from How to integrate Denodo with Sharepoint Online document.
- `sharepoint.client.id`: The client id generated in the Adobe Developer Console in the previous step.
- `sharepoint.client.secret`: The client secret generated in the Adobe Developer Console in the previous step.
- `access.token`: provided by VDP Wizard for OAuth 2.0.
- `refresh.token`: provided by VDP Wizard for OAuth 2.0.
- `sharepoint.site.name`: The site name of the specific SharePoint Online site you want to retrieve lists and folders content.
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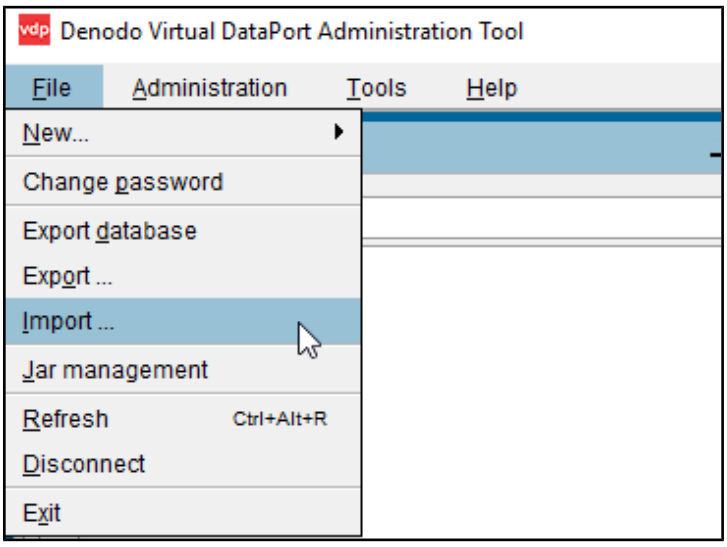
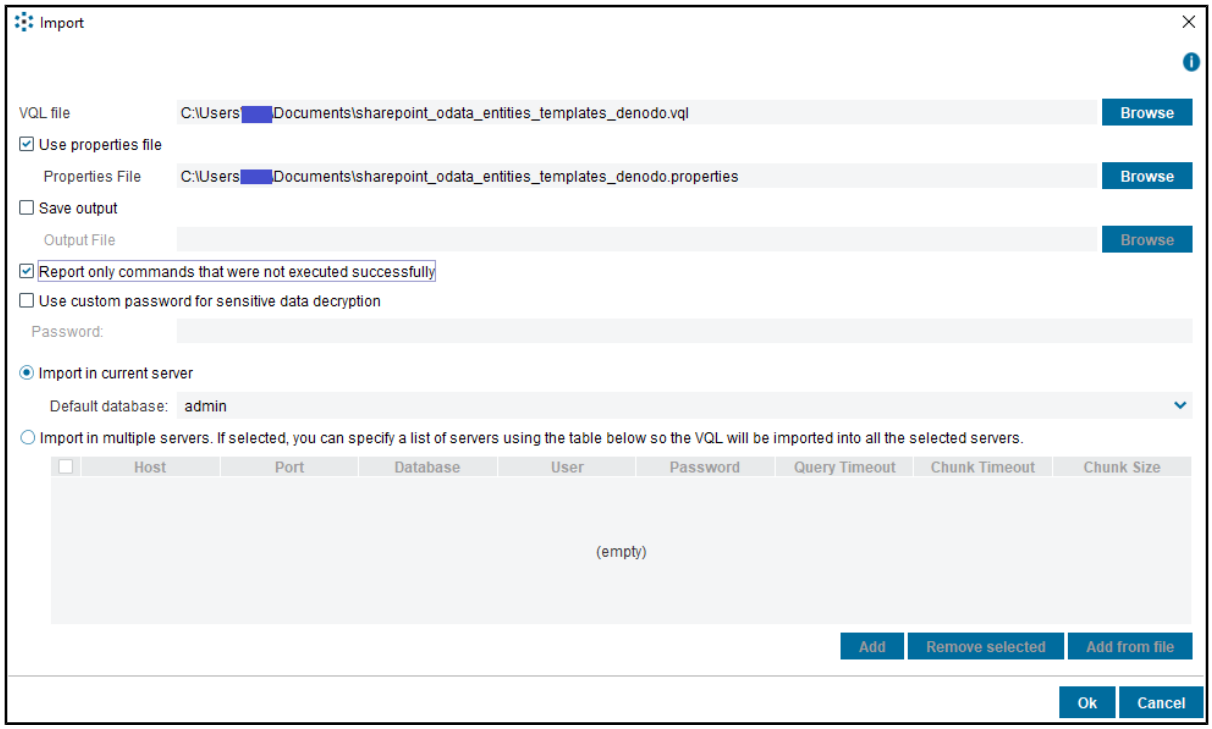
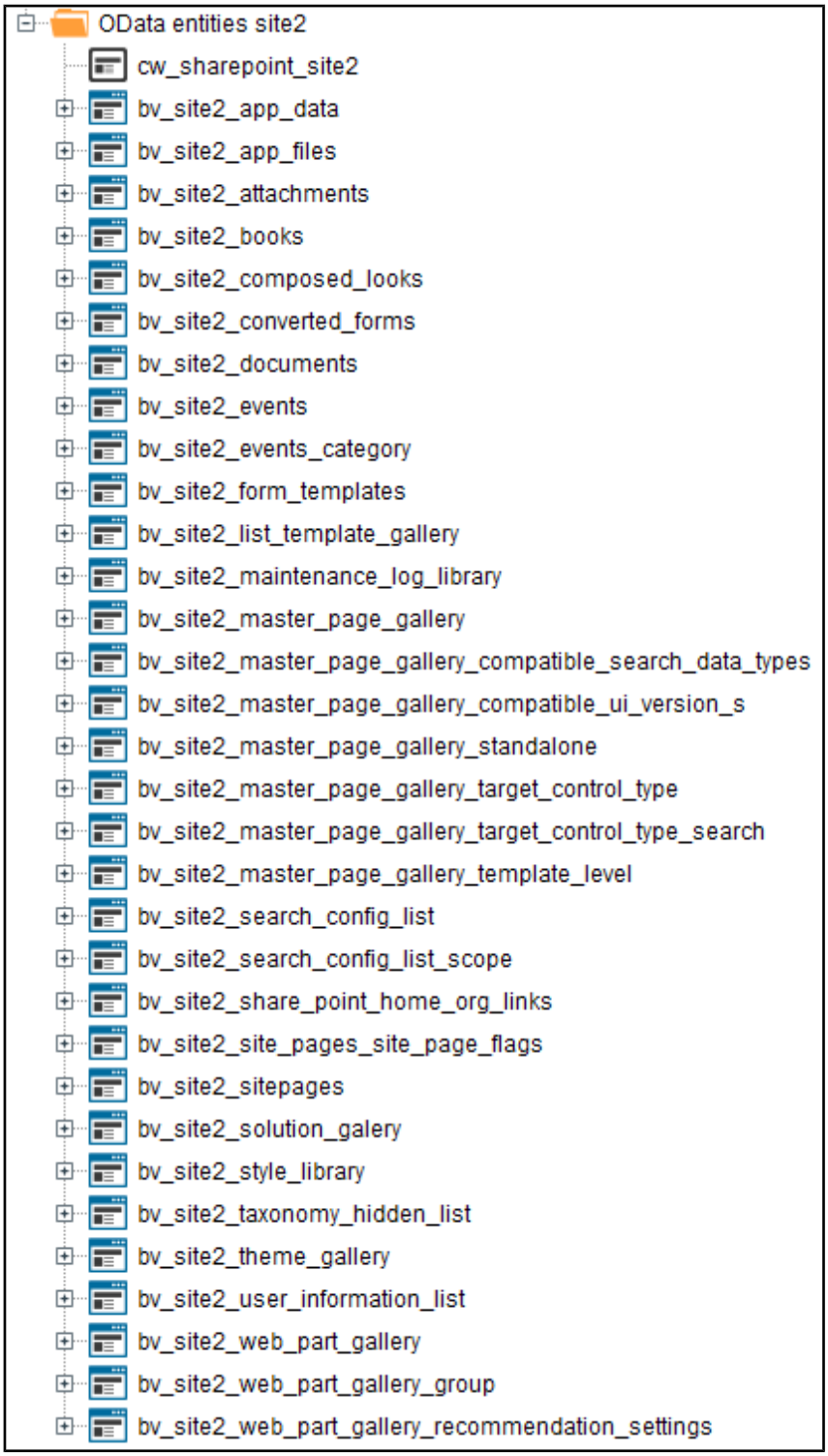


Once you have set the properties file, you only have to import both the properties and the `sharepoint_odata_entities_templates_denodo.vql` file using the `Import` option of the VDP Administration Tool:



5.2 REFRESH

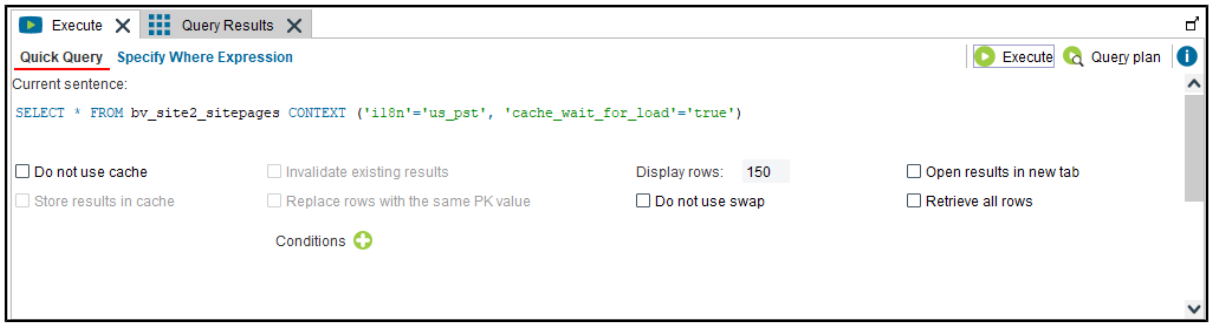
After the import operation finishes, refresh the `Server Explorer` by selecting `File > Refresh` and you will be able to see the data sources and views created to access the SharePoint OData entities.

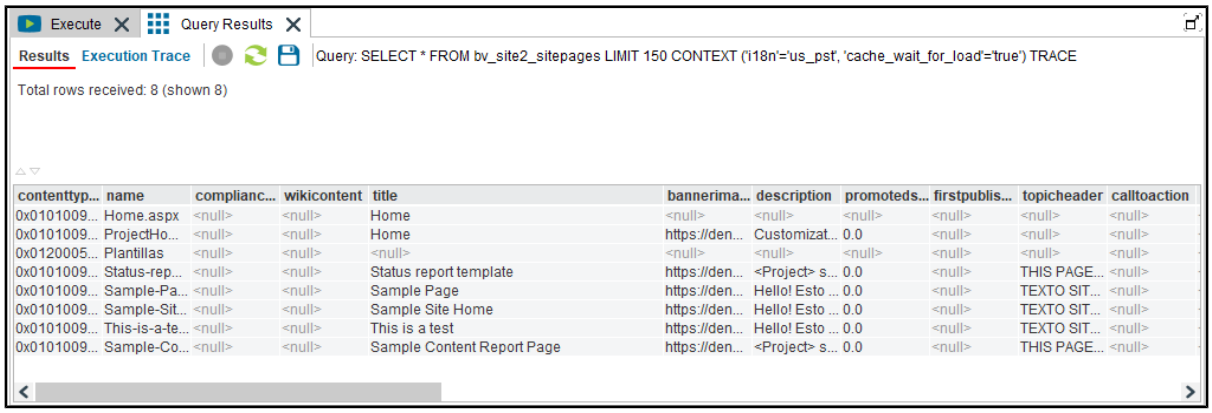


5.3 QUERY EXAMPLE

Now, you can execute queries on the SharePoint Online views that have been created.

Example, executing the `bv_${view.prefix}_sitepages` view:


Execute
Query Results
Quick Query
Specify Where Expression
Execute
Query plan
Current sentence:
SELECT * FROM bv_site2_sitepages CONTEXT ('i18n'='us_pst', 'cache_wait_for_load'='true')
Do not use cache
Invalidate existing results
Display rows: 150
Open results in new tab
Store results in cache
Replace rows with the same PK value
Do not use swap
Retrieve all rows
Conditions


Execute
Query Results
Results
Execution Trace
Query: SELECT * FROM bv_site2_sitepages LIMIT 150 CONTEXT ('i18n'='us_pst', 'cache_wait_for_load'='true') TRACE
Total rows received: 8 (shown 8)
contenttyp... name complianc... wikicontent title bannerima... description promoteds... firstpublis... topicheader calltoaction
0x0101009... Home.aspx <null> <null> Home <null> <null> <null> <null> <null> <null>
0x0101009... ProjectHo... <null> <null> Home https://den... Customizat... 0.0 <null> <null> <null>
0x0120005... Plantillas <null> <null> <null> <null> <null> <null> <null> <null> <null>
0x0101009... Status-rep... <null> <null> Status report template https://den... <Project> s... 0.0 <null> THIS PAGE... <null>
0x0101009... Sample-Pa... <null> <null> Sample Page https://den... Hello! Esto ... 0.0 <null> TEXTO SIT... <null>
0x0101009... Sample-Sit... <null> <null> Sample Site Home https://den... Hello! Esto ... 0.0 <null> TEXTO SIT... <null>
0x0101009... This-is-a-te... <null> <null> This is a test https://den... Hello! Esto ... 0.0 <null> TEXTO SIT... <null>
0x0101009... Sample-Co... <null> <null> Sample Content Report Page https://den... <Project> s... 0.0 <null> THIS PAGE... <null>

6 REFERENCES

How to integrate Denodo with Sharepoint Online