

Package: qiverse.powerbi (via r-universe)

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Title PowerBI Connectivity

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Description Defines functions needed to connect to PowerBI dataflows/datasets.

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BugReports <https://github.com/AUS-DOH-Safety-and-Quality/qiverse/issues>

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qiverse.powerbi-package
<i>The qiverse.powerbi package.</i>

Description

A collection of R functions for working with PowerBI Dataflows and Datasets

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See Also

Useful links:

- <https://github.com/AUS-DOH-Safety-and-Quality/qiverse/qiverse.powerbi>
- Report bugs at <https://github.com/AUS-DOH-Safety-and-Quality/qiverse/issues>

decompress_string	<i>Decode a PowerBI Compressed String</i>
-------------------	---

Description

For more efficient storage, PowerBI will store strings in a compressed binary format - compressed using the deflate algorithm and then represented as a base64 string.

This function takes the base64 string and decompresses it to return the original string.

Usage

```
decompress_string(compressed_string)
```

Arguments

compressed_string	The base64 string of the compressed data.
-------------------	---

Value

Original string after decompression.

Examples

```
table_str <- "i45W8lXSufJNzElVitWJVnIDctxSc2HcCCDXMS+/JC01SKEktSgXLBgKFazNy87LL88D8/2AfL/8EoXigtTkzLTM1BS12FgA"
decompress_string(table_str) |> cat()
# ["M", "Male"], ["F", "Female"], ["X", "Another term"], ["U", "Unknown"], ["N", "Not specified"]]
```

download_dataflow_table	<i>Download PowerBI Dataflow Table</i>
-------------------------	--

Description

This function provides the ability to download tables from within PowerBI dataflow themselves, rather than requiring that they first be exposed via a PowerBI dataset.

Usage

```
download_dataflow_table(
  workspace_name,
  dataflow_name,
  table_name,
  access_token = NULL,
  destfile = NULL,
  verbose = TRUE
)
```

Arguments

workspace_name	The PowerBI workspace name.
dataflow_name	The name of the PowerBI Dataflow within the workspace.
table_name	The name of the table within the PowerBI Dataflow to be accessed.
access_token	Token for authorising the connection to PowerBI. Valid options are: • NULL(default): Automatically generate via <code>qiverse.azure::get_az_tk('pbi_df')</code> • An AzureAuth object: Will be refreshed for the <code>https://analysis.windows.net/powerbi/api</code> resource • A single string specifying the access token
destfile	Optional output filepath to save raw dataflow CSV file to. If NULL (default) the CSV is read into an R <code>data.frame</code> . If non-null, the CSV file is downloaded to specified filepath and the function has no return.
verbose	Whether to print status messages while the function is running. Default is TRUE.

Value

A `data.frame` of the PowerBI table from the PowerBI dataflow if `destfile = NULL`, otherwise none

Examples

```
## Not run:
# Create PowerBI Dataflow azure token
tk <- get_az_tk('pbi_df')

# Load AD dummy file from PowerBI dataflow
ad_dummy <- download_dataflow_table(
  workspace_name = "My Workspace Name",
  dataflow_name = "My Dataflow Name",
  table_name = "My Table Name",
  access_token = tk$credentials$access_token
)

# Download AD dummy file from PowerBI dataflow to local .csv file
download_dataflow_table(
  workspace_name = "My Workspace Name",
  dataflow_name = "My Dataflow Name",
  table_name = "My Table Name",
  access_token = tk$credentials$access_token,
  destfile = "my_table_name.csv"
)

## End(Not run)
```

`download_dataset_table`

Download a specified dataset table into R using either the XMLA or REST API endpoints. This is a convenience wrapper around the `execute_xmla_query()` and `execute_rest_query()` functions.

Description

Download a specified dataset table into R using either the XMLA or REST API endpoints. This is a convenience wrapper around the `execute_xmla_query()` and `execute_rest_query()` functions.

Usage

```
download_dataset_table(  
  workspace,  
  dataset,  
  table,  
  method = "arrow",  
  access_token = NULL  
)
```

Arguments

<code>workspace</code>	Name of the workspace containing dataflow
<code>dataset</code>	Name of the dataset containing table
<code>table</code>	Name of the table to download
<code>method</code>	The API to use for downloading the table. Valid values are "arrow" (the default), XMLA" and "REST"
<code>access_token</code>	Token for authorising the connection to PowerBI. Valid options are: • <code>NULL</code> (default): Automatically generate via <code>qiverse.azure::get_az_tk('pbi_df')</code> • An <code>AzureAuth</code> object: Will be refreshed for the <code>https://analysis.windows.net/powerbi/api</code> resource • A single string specifying the access token

Value

DataFrame containing downloaded table

execute_arrow_query	<i>Execute a DAX query against a specified PowerBI Dataset using the REST Arrow API endpoint.</i>
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Description

This endpoint has no restrictions on the size of the result and will transfer data in a compressed format (Apache Arrow), and should be preferred.

Usage

```
execute_arrow_query(workspace, dataset, query, access_token = NULL)
```

Arguments

workspace	Name of the workspace containing dataflow
dataset	Name of the dataset to execute query against
query	DAX query to execute
access_token	Token for authorising the connection to PowerBI. Valid options are: • NULL (default): Automatically generate via <code>qiverse.azure::get_az_tk('pbi_df')</code> • An AzureAuth object: Will be refreshed for the <code>https://analysis.windows.net/powerbi/api</code> resource • A single string specifying the access token

Value

DataFrame containing results of query

execute_rest_query	<i>Execute a DAX query against a specified PowerBI Dataset using the REST API endpoint.</i>
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Description

Execute a DAX query against a specified PowerBI Dataset using the REST API endpoint.

Usage

```
execute_rest_query(workspace, dataset, query, access_token = NULL)
```

Arguments

workspace	Name of the workspace containing dataflow
dataset	Name of the dataset to execute query against
query	DAX query to execute
access_token	Token for authorising the connection to PowerBI. Valid options are: • NULL(default): Automatically generate via <code>qiverse.azure::get_az_tk('pbi_df')</code> • An AzureAuth object: Will be refreshed for the <code>https://analysis.windows.net/powerbi/api</code> resource • A single string specifying the access token

Value

DataFrame containing results of query

execute_xmla_query	<i>Execute a DAX query against a specified PowerBI Dataset using the XMLA API endpoint.</i>
--------------------	---

Description

Execute a DAX query against a specified PowerBI Dataset using the XMLA API endpoint.

Usage

```
execute_xmla_query(workspace, dataset, query, access_token = NULL)
```

Arguments

workspace	Name of the workspace containing dataflow
dataset	Name of the dataset to execute query against
query	DAX query to execute
access_token	Token for authorising the connection to PowerBI. Valid options are: • NULL(default): Automatically generate via <code>qiverse.azure::get_az_tk('pbi_df')</code> • An AzureAuth object: Will be refreshed for the <code>https://analysis.windows.net/powerbi/api</code> resource • A single string specifying the access token

Value

DataFrame containing results of query

list_dataflows	<i>Request metadata for all dataflows in specified workspace</i>
----------------	--

Description

Request metadata for all dataflows in specified workspace

Usage

```
list_dataflows(workspace, access_token = NULL)
```

Arguments

workspace	Name of the workspace containing dataflows
access_token	Token for authorising the connection to PowerBI. Valid options are: • NULL(default): Automatically generate via <code>qiverse.azure::get_az_tk('pbi_df')</code> • An <code>AzureAuth</code> object: Will be refreshed for the <code>https://analysis.windows.net/powerbi/api/resource</code> • A single string specifying the access token

Value

DataFrame containing the names, GUIDs, and descriptions for all dataflows in workspace

list_datasets	<i>Request metadata for all datasets in specified workspace</i>
---------------	---

Description

Request metadata for all datasets in specified workspace

Usage

```
list_datasets(workspace, access_token = NULL)
```

Arguments

workspace	Name of the workspace containing datasets
access_token	Token for authorising the connection to PowerBI. Valid options are: • NULL(default): Automatically generate via <code>qiverse.azure::get_az_tk('pbi_df')</code> • An <code>AzureAuth</code> object: Will be refreshed for the <code>https://analysis.windows.net/powerbi/api/resource</code> • A single string specifying the access token

Value

DataFrame containing the names, GUIDs, and descriptions for all datasets in workspace

list_workspaces	<i>Request metadata for all Workspaces in Tenant</i>
-----------------	--

Description

Request metadata for all Workspaces in Tenant

Usage

```
list_workspaces(access_token = NULL)
```

Arguments

access_token Token for authorising the connection to PowerBI. Valid options are:

- NULL(default): Automatically generate via `qiverse.azure::get_az_tk('pbi_df')`
- An AzureAuth object: Will be refreshed for the `https://analysis.windows.net/powerbi/api/resource`
- A single string specifying the access token

Value

DataFrame containing the names, GUIDs, and capacity GUIDs for all workspaces in tenant.

refresh_dataflow	<i>Refresh PowerBI Dataflow</i>
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Description

This function provides the ability to refresh PowerBI dataflows, via an R wrapper using the PowerBI REST API.

Usage

```
refresh_dataflow(  
  workspace_name,  
  dataflow_name,  
  access_token = NULL,  
  verbose = TRUE  
)
```

Arguments

workspace_name	The PowerBI workspace name.
dataflow_name	The name of the PowerBI Dataflow within the workspace.
access_token	Token for authorising the connection to PowerBI. Valid options are: • NULL(default): Automatically generate via <code>qiverse.azure::get_az_tk('pbi_df')</code> • An AzureAuth object: Will be refreshed for the <code>https://analysis.windows.net/powerbi/api</code> resource • A single string specifying the access token
verbose	Whether to print status messages while the function is running. Default is TRUE.

Value

A response object from the POST request.

Examples

```
## Not run:
# Create PowerBI Dataflow azure token
tk <- get_az_tk('pbi_df')

# Load AD dummy file from PowerBI dataflow
refresh_result <- refresh_dataflow(
  workspace_name = "My Workspace Name",
  dataflow_name = "My Dataflow Name",
  access_token = tk$credentials$access_token
)

## End(Not run)
```

update_dataflow_compute_engine

Update PowerBI Dataflow compute engine behaviour

Description

This function provides the ability to change the compute engine behaviour for a selected PowerBI dataflow, via an R wrapper using the PowerBI REST API.

Usage

```
update_dataflow_compute_engine(
  workspace_name,
  dataflow_name,
  compute_engine,
  access_token = NULL
)
```

Arguments

- workspace_name The PowerBI workspace name.
- dataflow_name The name of the PowerBI Dataflow within the workspace.
- compute_engine The compute engine behaviour setting to be applied. Must be one of "computeOptimized", "computeOn" or "computeDisabled".
- access_token Token for authorising the connection to PowerBI. Valid options are:
- NULL(default): Automatically generate via `qiverse.azure::get_az_tk('pbi_df')`
 - An AzureAuth object: Will be refreshed for the `https://analysis.windows.net/powerbi/api` resource
 - A single string specifying the access token

Details

You have to be the owner of the PowerBI dataflow to use this function, otherwise there will be an 401 unauthorised error.

Value

A response object from the PATCH request.

Examples

```
## Not run:
# Create PowerBI Dataflow azure token
tk <- get_az_tk('pbi_df')

# Load AD dummy file from PowerBI dataflow
response <- update_dataflow_compute_engine(
  workspace_name = "My Workspace Name",
  dataflow_name = "My Dataflow Name",
  compute_engine = "computeOptimized",
  access_token = tk$credentials$access_token
)

## End(Not run)
```

update_dataset_storage_mode

Update PowerBI Semantic Model (Dataset) storage mode

Description

This function provides the ability to change the storage mode for a selected PowerBI dataset, via an R wrapper using the PowerBI REST API.

Usage

```
update_dataset_storage_mode(
  workspace_name,
  dataset_name,
  storage_mode,
  access_token = NULL
)
```

Arguments

- | | |
|----------------|---|
| workspace_name | The PowerBI workspace name. |
| dataset_name | The name of the PowerBI Dataflow within the workspace. |
| storage_mode | The compute engine behaviour setting to be applied. Must be one of "Abf" (small semantic model format) or "PremiumFiles" (large semantic model format). |
| access_token | Token for authorising the connection to PowerBI. Valid options are: <ul style="list-style-type: none"> • NULL(default): Automatically generate via <code>qiverse.azure::get_az_tk('pbi_df')</code> • An AzureAuth object: Will be refreshed for the <code>https://analysis.windows.net/powerbi/api</code> resource • A single string specifying the access token |

Details

You do not have to be the owner of the semantic model to use this function.

Value

A response object from the PATCH request.

Examples

```
## Not run:
# Create PowerBI Dataflow azure token
tk <- get_az_tk('pbi_df')

response <- update_dataset_storage_mode(
  workspace_name = "My Workspace Name",
  dataset_name = "My Dataset Name",
  storage_mode = "PremiumFiles",
  access_token = tk$credentials$access_token
)

## End(Not run)
```

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