# Package 'ROhdsiWebApi'

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**Type** Package

**Title** R package to allow interactivity with a WebApi instance

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**Description** Includes R wrappers for calling WebAPI web services.

**License** Apache License 2.0

**Depends** R (>= 3.1.0),

**Imports** RJSONIO,
httr (>= 1.3.1),
openxlsx (>= 4.0.17),
jsonlite,
dplyr,
tibble,
SqlRender

**Suggests** testthat

**URL** https://github.com/OHDSI/ROhdsiWebApi

**BugReports** https://github.com/OHDSI/ROhdsiWebApi/issues

**NeedsCompilation** no

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`createConceptSetWorkbook` *Save a set of concept sets expressions, included concepts, and mapped concepts into a workbook*

---

## Description

Save a set of concept sets expressions, included concepts, and mapped concepts into a workbook

## Usage

```
createConceptSetWorkbook(
  conceptSetIds,
  workFolder = NULL,
  baseUrl,
  included = FALSE,
  mapped = FALSE
)
```

## Arguments

| | |
|---|---|
| `conceptSetIds` | A vector of concept set IDs. |
| `workFolder` | Directory location where the workbook will be saved, defaults to working directory. |
| `baseUrl` | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| `included` | Should included concepts be included in the workbook? |
| `mapped` | Should mapped concepts be included in the workbook? |

## Value

A xlsx workbook (conceptSetExpressions.xlsx) that includes a list of all concept set IDs and names and a worksheet for the concepts in each set. Options to include an included concepts and mapped concepts worksheet for each concept set are avaialble.

## getCdmSources *Get the data sources in the WebAPI instance*

### Description

Get the data sources in the WebAPI instance

### Usage

```
getCdmSources(baseUrl)
```

### Arguments

| | |
|---|---|
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |

### Details

Obtains the data sources configured in the WebAPI instance

### Value

A data frame of data source information

## getCohortCharacterizationResults *Get Cohort Characterization Results*

### Description

Get Cohort Characterization Results

### Usage

```
getCohortCharacterizationResults(
  baseUrl,
  characterizationId,
  generationId = NULL,
  sourceKey,
  cohortIds = c(),
  domains = c(),
  analysisNames = c()
)
```

### Arguments

| | |
|---|---|
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| characterizationId | The id of the cohort characterization in Atlas |
| generationId | Used to specify the id of a particular generation of a cohort characterization. By default, the latest execution is retrieved |
| sourceKey | The source key for a CDM instance in WebAPI, as defined in the Configuration page |
| cohortIds | (OPTIONAL) Which cohort definition ids would you like to retrieve? By default, all cohorts are retrieved. |
| domains | (OPTIONAL) Which feature domains would you like to retrieve? By default, all domains are retrieved. |
| analysisNames | (OPTIONAL) Which feature analysis names would you like to retrieve? By default, all analyses are retrieved. |

---

## getCohortDefinitionExpression *Get a cohort definition expression*

---

### Description

Get a cohort definition expression

### Usage

```
getCohortDefinitionExpression(definitionId, baseUrl)
```

### Arguments

| | |
|---|---|
| definitionId | The number indicating which cohort definition to fetch. |
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |

### Details

Obtain the JSON expression from WebAPI for a given cohort id

### Value

A JSON list object representing the cohort definition

### Examples

```
## Not run:
# This will obtain a cohort definition's JSON expression:

getCohortDefinitionExpression(definitionId = 282, baseUrl = "http://server.org:80/WebAPI")

## End(Not run)
```

`getCohortDefinitionName` *Get a cohort definition's name from WebAPI*

## Description

Get a cohort definition's name from WebAPI

## Usage

```
getCohortDefinitionName(baseUrl, definitionId, formatName = FALSE)
```

## Arguments

| | |
|---|---|
| `baseUrl` | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| `definitionId` | The cohort definition id in Atlas. |
| `formatName` | Should the name be formatted to remove prefixes and underscores? |

## Details

Obtains the name of a cohort.

## Value

The name of the cohort.

`getCohortDefinitionSql` *Get a cohort definition's SQL from WebAPI*

## Description

Get a cohort definition's SQL from WebAPI

## Usage

```
getCohortDefinitionSql(baseUrl, definitionId, generateStats = TRUE)
```

## Arguments

| | |
|---|---|
| `baseUrl` | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| `definitionId` | The cohort definition id in Atlas. |
| `generateStats` | Should the SQL include the code for generating inclusion rule statistics? Note that if TRUE, several additional tables are expected to exists as described in the details. By default this is TRUE. |

### Details

Obtains the template SQL of a cohort. When using generateStats = TRUE, the following tables are required to exist when executing the SQL: cohort_inclusion, cohort_inclusion_result, cohort_inclusion_stats, and cohort_summary_stats. Also note that the cohort_inclusion table should be populated with the names of the rules prior to executing the cohort definition SQL.

### Value

The templated SQL to generate the cohort

---

`getCohortGenerationStatuses` *Get Cohort Generation Statuses*

---

### Description

Get Cohort Generation Statuses

### Usage

```
getCohortGenerationStatuses(baseUrl, definitionIds, sourceKeys = NULL)
```

### Arguments

| | |
|---|---|
| `baseUrl` | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| `definitionIds` | A list of cohort definition Ids |
| `sourceKeys` | (OPTIONAL) A list of CDM source keys. These can be found in Atlas -> Configure. Otherwise, all CDM source keys will be used. |

### Details

Obtains cohort generation statuses for a collection of cohort definition Ids and CDM sources. Useful if running multiple cohort generation jobs that are long-running.

### Value

A data frame of cohort generation statuses, start times, and execution durations per definition id and source key.

`getCohortInclusionRulesAndCounts` *Get cohort inclusion rules and person counts*

## Description

Get cohort inclusion rules and person counts

## Usage

```
getCohortInclusionRulesAndCounts(baseUrl, cohortId, sourceKey)
```

## Arguments

| | |
|---|---|
| `baseUrl` | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| `cohortId` | The Atlas cohort definition id for the cohort |
| `sourceKey` | The source key for a CDM instance in WebAPI, as defined in the Configuration page |

## Details

Obtains the inclusion rules from a cohort definition and summarizes the person counts per rule

`getConceptSetConceptIds` *Get Concept Set Concept Ids*

## Description

Get Concept Set Concept Ids

## Usage

```
getConceptSetConceptIds(baseUrl, setId, vocabSourceKey = NULL)
```

## Arguments

| | |
|---|---|
| `baseUrl` | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| `setId` | The concept set id in Atlas. |
| `vocabSourceKey` | The source key of the Vocabulary. By default, the priority Vocabulary is used. |

## Details

Obtains the full list of concept Ids in a concept set.

## Value

A list of concept Ids.

## getConceptSetExpression *Get a concept set expression*

### Description

Get a concept set expression

### Usage

```
getConceptSetExpression(baseUrl, setId, asDataFrame = FALSE)
```

### Arguments

| | |
|---|---|
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| setId | The concept set id in Atlas. |
| asDataFrame | (OPTIONAL) Get expression as data frame |

### Details

Obtain the JSON expression from WebAPI for a given concept set

### Value

A JSON list object representing the concept set

### Examples

```
## Not run:
# This will obtain a concept set's JSON expression:

getConceptSetExpression(setId = 282, baseUrl = "http://server.org:80/WebAPI")

## End(Not run)
```

## getConceptSetName *Get a concept set's name from WebAPI*

### Description

Get a concept set's name from WebAPI

### Usage

```
getConceptSetName(baseUrl, setId, formatName = FALSE)
```

### Arguments

| | |
|---|---|
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| setId | The concept set id in Atlas. |
| formatName | Should the name be formatted to remove prefixes and underscores? |

### Details

Obtains the name of a concept set.

### Value

The name of the concept set.

---

## getConceptSetsAndConceptsFromCohort

*Get a list of concept sets and included/mapped concepts from a cohort definition*

---

### Description

Get a list of concept sets and included/mapped concepts from a cohort definition

### Usage

```
getConceptSetsAndConceptsFromCohort(
  baseUrl,
  definitionId,
  vocabSourceKey = NULL
)
```

### Arguments

| | |
|---|---|
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| definitionId | The cohort id to fetch concept sets and concepts from |
| vocabSourceKey | The vocabulary key to use. |

### Details

For a given cohort definition id, get all concept sets and resolve all concepts into an included concepts data frame and mapped concepts data frame from each

### Value

A list of concept sets, set names, and concept data frames

## Examples

```
## Not run:
# This will obtain a list of concept sets and concepts from a cohort id:

getConceptsFromCohortId(baseUrl = "http://server.org:80/WebAPI", definitionId = 123)

## End(Not run)
```

---

`getPriorityVocabKey` *Get Priority Vocab Source Key*

---

## Description

Get Priority Vocab Source Key

## Usage

```
getPriorityVocabKey(baseUrl)
```

## Arguments

| | |
|---|---|
| `baseUrl` | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |

## Details

Obtains the source key of the default OMOP Vocab in Atlas.

## Value

A string with the source key of the default OMOP Vocab in Atlas.

---

`getSetExpressionConceptIds`
*Get Concepts from a Concept Set Expression*

---

## Description

Get Concepts from a Concept Set Expression

## Usage

```
getSetExpressionConceptIds(baseUrl, expression, vocabSourceKey = NULL)
```

## Arguments

| | |
|---|---|
| `baseUrl` | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| `expression` | A JSON string that represents the concept set expression |
| `vocabSourceKey` | The source key of the Vocabulary. By default, the priority Vocabulary is used. |

### Value

A list of concept ids

### Examples

```
## Not run:
# This will obtain the concept ids from a concept set expression:

getSetExpressionConceptIds(baseUrl = "http://server.org:80/WebAPI",
                           expression = someJsonExpression)

## End(Not run)
```

---

## getWebApiVersion *Get the version of the WebAPI*

---

### Description

Get the version of the WebAPI

### Usage

```
getWebApiVersion(baseUrl)
```

### Arguments

| | |
|---|---|
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |

### Details

Obtains the WebAPI version number

### Value

The WebAPI version

---

## insertCohortDefinitionInPackage *Load a cohort definition and insert it into this package*

---

### Description

Load a cohort definition and insert it into this package

## Usage

```
insertCohortDefinitionInPackage(
  definitionId,
  name = NULL,
  jsonFolder = "inst/cohorts",
  sqlFolder = "inst/sql/sql_server",
  baseUrl,
  generateStats = FALSE
)
```

## Arguments

| | |
|---|---|
| definitionId | The number indicating which cohort definition to fetch. |
| name | The name that will be used for the json and SQL files. If not provided, the name in cohort will be used, but this may not lead to valid file names. |
| jsonFolder | Path to the folder where the JSON representation will be saved. |
| sqlFolder | Path to the folder where the SQL representation will be saved. |
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| generateStats | Should the SQL include the code for generating inclusion rule statistics? Note that if TRUE, several additional tables are expected to exists as described in the details. |

## Details

Load a cohort definition from a WebApi instance and insert it into this package. This will fetch the json object and store it in a folder (defaults to 'the inst/cohorts' folder), and fetch the template SQL and store it in another folder (defaults to the 'inst/sql/sql_server' folder). Both folders will be created if they don't exist. When using generateStats = TRUE, the following tables are required to exist when executing the SQL: cohort_inclusion, cohort_inclusion_result, cohort_inclusion_stats, and cohort_summary_stats. Also note that the cohort_inclusion table should be populated with the names of the rules prior to executing the cohort definition SQL.

## Examples

```
## Not run:
# This will create 'inst/cohorts/Angioedema.json' and 'inst/sql/sql_server/Angioedema.sql':

insertCohortDefinitionInPackage(definitionId = 282,
                                name = "Angioedema",
                                baseUrl = "http://server.org:80/WebAPI")

## End(Not run)
```

---

# insertCohortDefinitionSetInPackage

*Insert a set of cohort definitions into package*

---

## Description

Insert a set of cohort definitions into package

## Usage

```
insertCohortDefinitionSetInPackage(
  fileName = "inst/settings/CohortsToCreate.csv",
  baseUrl,
  jsonFolder = "inst/cohorts",
  sqlFolder = "inst/sql/sql_server",
  rFileName = "R/CreateCohorts.R",
  insertTableSql = TRUE,
  insertCohortCreationR = TRUE,
  generateStats = FALSE,
  packageName
)
```

## Arguments

| | |
|---|---|
| `fileName` | Name of a CSV file specifying the cohorts to insert. See details for the expected file format. |
| `baseUrl` | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| `jsonFolder` | Path to the folder where the JSON representations will be saved. |
| `sqlFolder` | Path to the folder where the SQL representations will be saved. |
| `rFileName` | Name of R file to generate when `insertCohortCreationR = TRUE`. |
| `insertTableSql` | Should the SQL for creating the cohort table be inserted into the package as well? This file will be called CreateCohortTable.sql. |
| `insertCohortCreationR` | Insert R code that will create the cohort table and instantiate the cohorts? This will create a file called R/CreateCohorts.R containing a function called `.createCohorts`. |
| `generateStats` | Should cohort inclusion rule statistics be created? |
| `packageName` | The name of the package (only needed when inserting the R code as well). |

## Details

The CSV file should have at least the following fields:

**atlasId** The cohort ID in ATLAS.

**cohortId** The cohort ID that will be used when instantiating the cohort (can be different from atlasId).

**name** The name to be used for the cohort. This name will be used to generate file names, so please use letters and numbers only (no spaces).

---

`insertConceptSetConceptIdsInPackage` *Insert a set of concept sets' concept ids into package*

---

## Description

Insert a set of concept sets' concept ids into package

### Usage

```
insertConceptSetConceptIdsInPackage(fileName, baseUrl)
```

### Arguments

| | |
|---|---|
| fileName | Name of a CSV file in the inst/settings folder of the package specifying the concept sets to insert. See details for the expected file format. |
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |

### Details

The CSV file should have:

**atlasId** The concept set Id in ATLAS.

---

## invokeCohortSetGeneration

*Invoke the generation of a set of cohort definitions*

---

### Description

Invoke the generation of a set of cohort definitions

### Usage

```
invokeCohortSetGeneration(baseUrl, sourceKeys, definitionIds)
```

### Arguments

| | |
|---|---|
| baseUrl | The base URL for the WebApi instance, for example: "http://server.org:80/WebAPI". |
| sourceKeys | A list of CDM source keys. These can be found in Atlas -> Configure. |
| definitionIds | A list of cohort definition Ids |

### Details

Invokes the generation of a set of cohort definitions across a set of CDMs set up in WebAPI. Use `getCohortGenerationStatuses` to check the progress of the set.

---

## ROhdsiWebApi *ROhdsiWebApi*

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ROhdsiWebApi

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