

OpenSpending Data Model

for use with Invantive SQL

24.0

invantive
the SQL company

Auteursrecht

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Ondanks alle aan de samenstelling van deze tekst bestede zorg, kan noch de schrijver noch de uitgever aansprakelijkheid aanvaarden voor eventuele schade, die zou kunnen voortvloeien uit enige fout, die in deze uitgave zou kunnen voorkomen.

Deze handleiding is een naslagwerk bedoeld om het gebruik te verduidelijken. Indien gegevens in de voorbeeldafbeeldingen overeenkomen met gegevens in uw systeem, dan is de overeenkomst toevallig.

Belangrijke Informatie over Veiligheid en Gebruik

Beoogd gebruik en beperkingen: Deze software, ontwikkeld door Invantive, is ontworpen om een verscheidenheid aan zakelijke en informatietechnologische gegevensverwerkingsfuncties te ondersteunen, zoals boekhouding, financiÃ«le rapportage en verkooprapportage. Het is belangrijk om op te merken dat deze software niet is ontworpen, getest of goedgekeurd voor gebruik in omgevingen waar een storing of defect kan leiden tot levensbedreigende situaties, ernstige fysieke schade of milieuschade. Dit omvat, maar is niet beperkt tot:

- Nucleaire faciliteiten: de software mag niet worden gebruikt voor operaties of functies die verband houden met de controle, het onderhoud of de werking van nucleaire faciliteiten.
- Defensie en militaire toepassingen: deze software is niet geschikt voor gebruik in defensiegerelateerde toepassingen, inclusief maar niet beperkt tot wapenbeheer, militaire strategieplanning of andere aspecten van nationale defensie.
- Luchtvaart: de software is niet bedoeld voor gebruik in de bediening, navigatie of communicatiesystemen van vliegtuigen of luchtverkeersleidingomgevingen.
- Gezondheidszorg en medicijnproductie: deze software mag niet worden gebruikt voor de werking van medische apparaten, de analyse van patiÃ«ntgegevens voor kritieke gezondheidsbeslissingen, farmaceutische productie of medisch onderzoek waarbij een storing of defect de gezondheid van de patiÃ«nt kan beÃ¯nvloeden.
- Verwerking van chemische en/of gevaarlijke stoffen: deze software is niet bedoeld voor het beheer, de controle of de operationele aspecten van chemische fabrieken of faciliteiten voor de verwerking van chemische en/of gevaarlijke stoffen. Elke storing in de software die in deze omgevingen wordt gebruikt kan leiden tot gevaarlijke chemische lozingen, explosies of milieurampen.
- Transport- en verkeerscontrolesystemen: de software mag niet worden gebruikt voor de besturing, bediening of het beheer van transportsystemen, waaronder de besturing van spoorwegsignalen, metrosystemen of verkeerslichten. Storingen in dergelijke kritieke systemen kunnen tot ernstige ongelukken leiden en de openbare veiligheid in gevaar brengen.
- Energienetwerk- en nutsbesturingssystemen: deze software is niet ontworpen voor de besturing of bediening van energienetwerksystemen, waaronder elektrische onderstations, besturingssystemen voor hernieuwbare energie of besturingssystemen van waternutsbedrijven. Het falen van software op deze gebieden kan leiden tot aanzienlijke stroomonderbrekingen, onderbrekingen in de watervoorziening of andere storingen in openbare voorzieningen, waardoor gemeenschappen in gevaar kunnen komen en grote schade kan worden aangericht.
- Andere omgevingen met een hoog risico: alle andere kritieke infrastructuren en omgevingen waar een storing in de software kan leiden tot aanzienlijke schade aan personen of het milieu.

Gebruikersverantwoordelijkheid: gebruikers moeten ervoor zorgen dat ze het beoogde gebruik van de software begrijpen en de software niet gebruiken in een omgeving die buiten het beoogde doel valt. Het is de verantwoordelijkheid van de gebruiker om de geschiktheid van de software voor de beoogde toepassing te beoordelen, vooral in scenario's die een risico kunnen vormen voor leven, gezondheid en/of milieu.
Afwijzing van aansprakelijkheid: Invantive wijst elke verantwoordelijkheid af voor schade, letsel of welke gevolgen die voortvloeien uit het gebruik of misbruik van deze software in verboden en/of onbedoelde toepassingen.

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1 SQL Driver for openspending.nl API

Invantive SQL is the fastest, easiest and most reliable way to exchange data with the openspending.nl API.

Use the "Search" option in the left menu to search for a specific term such as the table or column description. When you already know the term, please use the "Index" option. When you can't find the information needed, please click on the Chat button at the bottom or place your question in the user community. Other users or Invantive Support will try to help you to our best.

OpenSpending is an online web service on the budget and spending of governments in the Netherlands. It includes data from various sources, including IV3 of CBS.

The openspending.nl driver covers 8 tables and 178 columns.

openspending.nl API Clients

Invantive SQL is available on many user interfaces ("clients" in traditional server-client paradigma). All Invantive SQL statements can be exchanged with a close to 100% compatibility across all clients and operating systems (Windows, MacOS, Linux, iOS, Android).

The clients include Microsoft Excel, Microsoft Power BI, Microsoft Power Query, Microsoft Word and Microsoft Outlook. Web-based clients include Invantive Cloud, Invantive Bridge Online as OData proxy, Invantive App Online for interactive apps, Online SQL Editor for query execution and Invantive Data Access Point as extended proxy.

For technical users there are command-line editions of Invantive Data Hub running on iOS, Android, Windows, MacOS and Linux. Invantive Data Hub is also often used for enterprise server applications such as ETL. High-volume replication of data taken from the openspending.nl API into traditional databases such as SQL Server (on-premise and Azure), MySQL, PostgreSQL and Oracle is possible using Invantive Data Replicator. Invantive Data Replicator automatically creates and maintains openspending.nl datawarehouses, possibly in combination with data from over 70 other (cloud) platforms. Data Replicator supports data volumes up to over 1 TB and over 5.000 companies. The on-premise edition of Invantive Bridge offers an openspending.nl ADO.net provider.

Monitor API Calls

When a query or DML-statement has been executed on Invantive SQL a developer can evaluate the actual calls made to the openspending.nl API using a query on sessionios@DataDictionary. As an alternative, extensive request and response logging can be enabled by setting log-native-calls-to-disk to true. In the %USERPROFILE% \Invantive\NativeLog folder Invantive SQL will create log files per API request and response.

Specifications

The SQL driver for openspending.nl does not support partitioning. Define one data container in a database for each company in openspending.nl to enable parallel access for data from multiple companies.

An introduction into the concepts of Invantive SQL such as databases, data containers and partitioning can be found in the Invantive SQL grammar.

The configuration can be changed using various attributes during log on and use. A full list of configuration options is listed in the driver attributes 2.

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The catalog name is used to compose the full qualified name of an object like a table or view. The schema name is used to compose the full qualified name of an object like a table or view. On openspending.nl the comparison of two texts is case sensitive by default.

Changes and bug fixes on the openspending.nl SQL driver can be found in the release notes. There is currently no specific section on the Invantive forums for openspending.nl. Please reach out to other users of openspending.nl by leaving a question or contact request.

Driver code for use in settings.xml: `OpenSpendingNl`

Alias: `osnl`

Recommended alias: `osl`

More technical documentation as provided by the supplier of the openspending.nl API on the native APIconnection used can be found at http://openspending.nl/api/v1/doc.

General documentation on openspending.nl is available at http://openspending.nl/pagina/data

Updated: 29-05-2022 01:01 using Invantive SQL version 22.0.196-PROD+3400.

2 SQL Driver Attributes for openspending.nl API

The SQL driver for openspending.nl has many attributes that can be finetuned to improve handling in scenarios with unreliable network connections to the API server of openspending.nl or high-volumes of data. Also, many drivers have driver-specific attributes to finetune actual behaviour or handle data not matching specifications.

The openspending.nl driver attributes are assigned a default value which seldom requires change. However, changes can be applied when needed on four levels, which are reflected in the table below by separate checkmarks:

- Connection string: the connection string from the settings*.xml file and applied during log on.
- Set SQL statement: a set SQL-statement to be executed once connection has been established.
- Drivers file: the providers.xml file (obsolete starting release 17.32).
- Log on: value to be specified interactively by user during log on in a user interface.

The connection string for openspending.nl can be found in the settings*.xml file used for the database. Settings*.xml files are typically located in the `%USERPROFILE%\invantive` folder in most deployment scenarios. The reference manuals contain instructions how to relocate the settings*.xml files. Each data container of a database in the connection string can have a `connectionString` element specifying the name and values of attributes. Both name and value must be properly escaped according to XML-semantics. Actual application of the value is solely done during log on. A new connection must be established to change the value of a driver attribute using a connection string.

The set SQL statement can be executed after log on. The syntax is: `set NAME VALUE`, or for a distributed database: `set NAME@ALIAS VALUE`. In some scenarios you may need to enclose the driver attribute name in square brackets to escape it from parsing, for instance when a reserved SQL keyword is part of the name. The new value takes effect straight after execution of the set-statement. The set-statement can be executed as often as needed during a session.

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Driver attributes that can be interactively set to a value are typically presented in the log on window. Depending on the platform and design decisions of the user interface designer, some or all of the available driver attributes can have been made available.

The openspending.nl driver can be configured using the following attributes:

Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
add-odata-mandatory-filters	Whether to automatically add OData filters deemed necessary by the platform.	OData	False	✓	✓	✓	
analysis-enforce-row-uniqueness	Use for analysis only! Enforce rows to be unique.	Shared	False	✓	✓	✓	
api-url	URL to access the API.	OData		✓		✓	
bulk-delete-page-size-rows	Number of rows to delete per batch when bulk deleting	Shared	10000	✓	✓	✓	
bulk-insert-page-size-bytes	Approximate maximum size in bytes of batch when bulk inserting	Shared	10000000	✓	✓	✓	
bulk-insert-page-size-rows	Number of rows to insert per batch when bulk inserting	Shared	250	✓	✓	✓	
download-error-400-bad-request-max-tries	Maximum number of tries when OData server reports bad format during retrieval of data.		30	✓	✓	✓	
download-error-400-bad-request-sleep-initial-ms	Initial sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.		10000	✓	✓	✓	
download-error-400-bad-request-sleep-max-ms	Maximum sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.		300000	✓	✓	✓	
download-error-400-bad-request-sleep-multiplicator	Multiplication factor for sleep between retries OData server reports that the API server is unavailable during retrieval of data.		2	✓	✓	✓	
download-error-408-request-timeout-max-tries	Maximum number of tries when the website reports a HTTP status 408.		10	✓	✓	✓	
download-error-408-request-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a HTTP status 408.		10000	✓	✓	✓	
download-error-408-request-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports a HTTP status 408.		300000	✓	✓	✓	
download-error-408-request-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a HTTP status 408.		2	✓	✓	✓	
download-error-422-bad-request-max-tries	Maximum number of tries when OData server reports unprocessable entity during retrieval of data.		30	✓	✓	✓	
download-error-422-bad-request-	Initial sleep in milliseconds between retries when OData server reports		10000	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
sleep-initial-ms	unprocessable entity during retrieval of data.						
download-error-422-bad-request-sleep-max-ms	Maximum sleep in milliseconds between retries when OData server reports unprocessable entity during retrieval of data.		300000	✓	✓	✓	
download-error-422-bad-request-sleep-multiplicator	Multiplication factor for sleep between retries OData server reports unprocessable entity during retrieval of data.		2	✓	✓	✓	
download-error-429-too-many-requests-max-tries	Maximum number of tries when the website reports that too many requests have been made during a timeslot of one minute or one day.		10	✓	✓	✓	
download-error-429-too-many-requests-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports that too many requests have been made during a timeslot of one minute or one day.		10000	✓	✓	✓	
download-error-429-too-many-requests-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports that too many requests have been made during a timeslot of one minute or one day.		300000	✓	✓	✓	
download-error-429-too-many-requests-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports that too many requests have been made during a timeslot of one minute or one day.		2	✓	✓	✓	
download-error-502-server-unavailable-max-tries	Maximum number of tries when OData server reports a bad gateway during retrieval of data.		30	✓	✓	✓	
download-error-502-server-unavailable-sleep-initial-ms	Initial sleep in milliseconds between retries when OData server reports a bad gateway during retrieval of data.		10000	✓	✓	✓	
download-error-502-server-unavailable-sleep-max-ms	Maximum sleep in milliseconds between retries when OData server reports that a bad gateway during retrieval of data.		300000	✓	✓	✓	
download-error-502-server-unavailable-sleep-multiplicator	Multiplication factor for sleep between retries OData server reports a bad gateway during retrieval of data.		2	✓	✓	✓	
download-error-503-server-unavailable-max-tries	Maximum number of tries when OData server reports that the API server is unavailable during retrieval of data.		30	✓	✓	✓	
download-error-503-server-	Initial sleep in milliseconds between retries when OData server reports		10000	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
unavailable-sleep-initial-ms	that the API server is unavailable during retrieval of data.						
download-error-503-server-unavailable-sleep-max-ms	Maximum sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.		300000	✓	✓	✓	
download-error-503-server-unavailable-sleep-multiplicator	Multiplication factor for sleep between retries OData server reports that the API server is unavailable during retrieval of data.		2	✓	✓	✓	
download-error-504-gateway-timeout-max-tries	Maximum number of tries when the website reports a gateway timeout.		10	✓	✓	✓	
download-error-504-gateway-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a gateway timeout.		10000	✓	✓	✓	
download-error-504-gateway-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports a gateway timeout.		300000	✓	✓	✓	
download-error-504-gateway-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a gateway timeout.		2	✓	✓	✓	
download-error-590-network-connect-timeout-max-tries	Maximum number of tries when the website reports a HTTP status 590.		10	✓	✓	✓	
download-error-590-network-connect-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a HTTP status 590.		10000	✓	✓	✓	
download-error-590-network-connect-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the website reports a HTTP status 590.		300000	✓	✓	✓	
download-error-590-network-connect-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a HTTP status 590.		2	✓	✓	✓	
download-error-599-network-connect-timeout-max-tries	Maximum number of tries when the website reports a HTTP status 599.		10	✓	✓	✓	
download-error-599-network-connect-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the website reports a HTTP status 599.		10000	✓	✓	✓	
download-error-599-network-	Maximum sleep in milliseconds between retries when the website		300000	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
connect-timeout-sleep-max-ms	reports a HTTP status 599.						
download-error-599-network-connect-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the website reports a HTTP status 599.		2	✓	✓	✓	
download-error-argument-exception-max-tries	Maximum number of tries when an argument exception is returned when downloading a blob.		10	✓	✓	✓	
download-error-argument-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when an argument exception is returned when downloading a blob.		10000	✓	✓	✓	
download-error-argument-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when an argument exception is returned when downloading a blob.		300000	✓	✓	✓	
download-error-argument-exception-sleep-multiplicator	Multiplication factor for sleep between retries when an argument exception is returned when downloading a blob.		2	✓	✓	✓	
download-error-internet-down-max-tries	Maximum number of tries when the Internet connection seems down during retrieval of data.		10	✓	✓	✓	
download-error-internet-down-sleep-initial-ms	Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.		10000	✓	✓	✓	
download-error-internet-down-sleep-max-ms	Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.		300000	✓	✓	✓	
download-error-internet-down-sleep-multiplicator	Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.		2	✓	✓	✓	
download-error-io-exception-max-tries	Maximum number of tries when a network I/O connection failure occurs during retrieval of data.		10	✓	✓	✓	
download-error-io-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when a network I/O connection failure occurs during retrieval of data.		10000	✓	✓	✓	
download-error-io-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when a network I/O connection failure occurs during retrieval of data.		300000	✓	✓	✓	
download-error-io-exception-sleep-multiplicator	Multiplication factor for sleep between retries when a network I/O connection failure occurs during retrieval of data.		2	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
download-error-json-exception-max-tries	Maximum number of tries when an invalid JSON body is returned.		3	✓	✓	✓	
download-error-json-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when an invalid JSON body is returned.		1000	✓	✓	✓	
download-error-json-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when an invalid JSON body is returned.		10000	✓	✓	✓	
download-error-json-exception-sleep-multiplicator	Multiplication factor for sleep between retries when an invalid JSON body is returned.		2	✓	✓	✓	
download-error-other-exception-max-tries	Maximum number of tries when an unqualified error occurs during retrieval of data.		3	✓	✓	✓	
download-error-other-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when an unqualified error ocurrs during retrieval of data.		10000	✓	✓	✓	
download-error-other-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when an unqualified error ocurrs during retrieval of data.		300000	✓	✓	✓	
download-error-other-exception-sleep-multiplicator	Multiplication factor for sleep between retries when an unqualified error ocurrs during retrieval of data.		2	✓	✓	✓	
download-error-socket-exception-max-tries	Maximum number of tries when the network connection is forcible dropped during retrieval of data.		10	✓	✓	✓	
download-error-socket-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when the network connection is forcible dropped during retrieval of data.		10000	✓	✓	✓	
download-error-socket-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when the network connection is forcible dropped during retrieval of data.		300000	✓	✓	✓	
download-error-socket-exception-sleep-multiplicator	Multiplication factor for sleep between retries when the network connection is forcible dropped during retrieval of data.		2	✓	✓	✓	
download-error-web-exception-max-tries	Maximum number of tries when a web connection failure occurs during retrieval of data.		10	✓	✓	✓	
download-error-web-exception-sleep-initial-ms	Initial sleep in milliseconds between retries when a web connection failure occurs during retrieval of data.		10000	✓	✓	✓	
download-error-web-exception-sleep-max-ms	Maximum sleep in milliseconds between retries when a web connection failure occurs during retrieval of data.		300000	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
download-error-web-exception-sleep-multiplicator	Multiplication factor for sleep between retries when a web connection failure occurs during retrieval of data.		2	✓	✓	✓	
download-error-web-not-implemented-max-tries	Maximum number of tries when the connection reports not implemented.		1	✓	✓	✓	
download-error-web-not-implemented-sleep-initial-ms	Initial sleep in milliseconds between retries when the connection reports not implemented.		10000	✓	✓	✓	
download-error-web-not-implemented-sleep-max-ms	Maximum sleep in milliseconds between retries when the connection reports not implemented.		300000	✓	✓	✓	
download-error-web-not-implemented-sleep-multiplicator	Multiplication factor for sleep between retries when the connection reports not implemented.		2	✓	✓	✓	
download-error-web-timeout-max-tries	Maximum number of tries when the connection reports a timeout.		10	✓	✓	✓	
download-error-web-timeout-sleep-initial-ms	Initial sleep in milliseconds between retries when the connection reports a timeout.		10000	✓	✓	✓	
download-error-web-timeout-sleep-max-ms	Maximum sleep in milliseconds between retries when the connection reports a timeout.		300000	✓	✓	✓	
download-error-web-timeout-sleep-multiplicator	Multiplication factor for sleep between retries when the connection reports a timeout.		2	✓	✓	✓	
download-error-web-unauthorized-max-tries	Maximum number of tries when the connection reports an unauthorized error.		1	✓	✓	✓	
download-error-web-unauthorized-sleep-initial-ms	Initial sleep in milliseconds between retries when the connection reports an unauthorized error.		10000	✓	✓	✓	
download-error-web-unauthorized-sleep-max-ms	Maximum sleep in milliseconds between retries when the connection reports an unauthorized error.		300000	✓	✓	✓	
download-error-web-unauthorized-sleep-multiplicator	Multiplication factor for sleep between retries when the connection reports an unauthorized error.		2	✓	✓	✓	
force-case-sensitive-identifiers	Consider identifiers as case-sensitive independent of the platform capabilities.	Shared	False	✓	✓	✓	
forced-casing-identifiers	Forced casing of identifiers. Choose from Unset, Lower, Upper and	Shared		✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
	Mixed.						
http-disk-cache-compression-level	Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.	Shared	5	✓	✓	✓	
http-disk-cache-directory	Directory where HTTP cache is stored.	Shared	C:\Users\gle3.WS212\Invantive\Cache\http\gle3\shared	✓	✓	✓	
http-disk-cache-ignore-write-errors	Whether to ignore write errors to disk cache.	Shared	False	✓	✓	✓	
http-disk-cache-max-age-sec	Maximum acceptable age in seconds for use of data in the HTTP disk cache.	Shared	2592000	✓	✓	✓	
http-get-timeout-ms	HTTP GET timeout (ms).		300000	✓	✓	✓	
http-memory-cache-compression-level	Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.	OData	5	✓	✓	✓	
http-memory-cache-max-age-sec	Maximum acceptable age in seconds for use of data in the HTTP memory cache.	OData	14400	✓	✓	✓	
http-post-timeout-ms	HTTP POST timeout (ms).		300000	✓	✓	✓	
ignore-http-400-errors	Ignore HTTP 400 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-401-errors	Ignore HTTP 401 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-402-errors	Ignore HTTP 402 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-403-errors	Ignore HTTP 403 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-404-errors	Ignore HTTP 404 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-422-errors	Ignore HTTP 422 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-429-errors	Ignore HTTP 429 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-500-errors	Ignore HTTP 500 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
ignore-http-502-errors	Ignore HTTP 502 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
ignore-http-503-errors	Ignore HTTP 503 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
invalid-json-on-get-max-tries	Maximum number of tries when the JSON received on GET is invalid.		10	✓	✓	✓	
invalid-json-on-get-sleep-initial-ms	Initial sleep in milliseconds between retries when the JSON received on GET is invalid.		10000	✓	✓	✓	
invalid-json-on-get-sleep-max-ms	Maximum sleep in milliseconds between retries when the JSON received on GET is invalid.		300000	✓	✓	✓	
invalid-json-on-get-sleep-multiplicator	Multiplication factor for sleep between retries when the JSON received on GET is invalid.		2	✓	✓	✓	
invalid-json-on-post-max-tries	Maximum number of tries when the JSON received on POST is invalid.		1	✓	✓	✓	
invalid-json-on-post-sleep-initial-ms	Initial sleep in milliseconds between retries when the JSON received on POST is invalid.		10000	✓	✓	✓	
invalid-json-on-post-sleep-max-ms	Maximum sleep in milliseconds between retries when the JSON received on POST is invalid.		300000	✓	✓	✓	
invalid-json-on-post-sleep-multiplicator	Multiplication factor for sleep between retries when the JSON received on POST is invalid.		2	✓	✓	✓	
invantive-sql-compress-sparse-arrays	Whether to compress sparse arrays in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-correct-invalid-date	Whether to correct dates considered invalid since they are before 01-01-1753. When nullable, they are removed. Otherwise they are replaced by 01-01-1753.	SQL Engine V1	False	✓	✓	✓	
invantive-sql-forward-filters-to-data-containers	Whether to forward filters to data containers.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-share-byte-arrays	Whether to share the memory used by identical byte arrays in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-share-strings	Whether to share the memory used by identical strings in result sets during compression.	SQL Engine V1	True	✓	✓	✓	
invantive-sql-shuffle-fetch-results-data-containers	Whether to shuffle results fetched from data containers.	SQL Engine V1	False	✓	✓	✓	
invantive-use-cache	Whether to cache the results of a query.	SQL Engine V1	True	✓	✓	✓	
join-set-points-per-request	Maximum number of values in a request when executing a join set.	OData	60	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
limit-partition-calls-left	Minimum number of remaining API calls on a partition towards a hard limit. When below, an error is raised.	OData	500	✓	✓	✓	
log-native-calls-to-disk-max-events	Maximum number of events to register from last activation.	Shared		✓	✓	✓	
log-native-calls-to-disk-max-seconds	Maximum number of seconds to register from last activation.	Shared		✓	✓	✓	
log-native-calls-to-disk-on-error	Registers native calls to data container backend as disk files when an error occurred.	Shared	False	✓	✓	✓	
log-native-calls-to-disk-on-success	Registers native calls to data container backend as disk files when successful.	Shared	False	✓	✓	✓	
log-native-calls-to-trace	Log native calls to data container backend on the trace.	Shared	False	✓	✓	✓	
maximum-length-identifiers	Non-default maximum length in characters of identifier names.	Shared		✓	✓	✓	
max-odata-filters	The maximum number of OData filter elements.	OData	100	✓	✓	✓	
max-url-length-accepted	The maximum accepted URL length before raising an error.	Shared	8000	✓	✓	✓	
max-url-length-desired	The maximum desired URL length.	Shared	8000	✓	✓	✓	
metadata-cache-max-age-sec	Maximum acceptable age in seconds for re-use of metadata.	OData		✓	✓	✓	
oauth-unauthorized-max-tries	Maximum number of tries when an OAuth exception occurs.	OData	2	✓	✓	✓	
oauth-unauthorized-sleep-initial-ms	Initial sleep in milliseconds between OAuth reauthentication tries when the OAuth authentication fails.	OData	10000	✓	✓	✓	
oauth-unauthorized-sleep-max-ms	Maximum sleep in milliseconds between OAuth reauthentication tries when the OAuth authentication fails.	OData	1000	✓	✓	✓	
oauth-unauthorized-sleep-multiplicator	Multiplication factor for sleep between OAuth reauthentication tries when the OAuth authentication fails.	OData	2	✓	✓	✓	
partition-slot-based-rate-limit-length-ms	Total length in ms across all slots of a partition-based rate limit.	Shared	60000	✓		✓	
partition-slot-based-rate-limit-slots	Number of slots per partition-based rate limit. Null means no slot-based rate limit	Shared		✓		✓	
pre-request-delay-ms	Pre-request delay in milliseconds per request.	Shared	0	✓	✓	✓	
requested-page-size	Preferred number of rows to exchange per round trip; only	Shared		✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
	effective on limited platforms such as AFAS Online						
requests-parallel-max	Maximum number of parallel data requests from individual partitions on the data container.	Shared	32	✓	✓	✓	
simulate-http-400-errors	Simulate HTTP 400 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-400-errors-percentage	Percentage of simulated HTTP 400 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-401-errors	Simulate HTTP 401 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-401-errors-percentage	Percentage of simulated HTTP 401 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-403-errors	Simulate HTTP 403 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-403-errors-percentage	Percentage of simulated HTTP 403 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-408-errors	Simulate HTTP 408 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-408-errors-percentage	Percentage of simulated HTTP 408 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-429-errors	Simulate HTTP 429 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-429-errors-percentage	Percentage of simulated HTTP 429 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-500-errors	Simulate HTTP 500 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-500-errors-percentage	Percentage of simulated HTTP 500 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-502-errors	Simulate HTTP 502 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-502-errors-percentage	Percentage of simulated HTTP 502 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-503-errors	Simulate HTTP 503 errors when exchanging results with the OData endpoint.		False	✓	✓	✓	

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Code	Description	Origin	Default Value	Set from Connection String	Set from Set SQL-Statement	Set from Drivers File	Set from Log On
simulate-http-503-errors-percentage	Percentage of simulated HTTP 503 errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-protocol-errors	Simulate HTTP protocol errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-protocol-errors-percentage	Percentage of simulated HTTP protocol errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
simulate-http-timeout-errors	Simulate HTTP timeout errors when exchanging results with the OData endpoint.		False	✓	✓	✓	
simulate-http-timeout-errors-percentage	Percentage of simulated HTTP timeout errors when exchanging results with the OData endpoint.		0	✓	✓	✓	
slot-based-rate-limit-length-ms	Total length in ms across all slots of a slot-based rate limit.	Shared	60000	✓		✓	
slot-based-rate-limit-slots	Number of slots of a slot-based rate limit. Null means no slot-based rate limit	Shared		✓		✓	
standardize-identifiers	Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.	Shared	True	✓	✓	✓	
standardize-identifiers-casing	Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.	Shared	True	✓	✓	✓	
use-batch-insert	Whether to use batch insert.	OData	True	✓	✓	✓	
use-http-disk-cache-read	Whether to use HTTP responses from previous queries stored on disk to answer the current query.	Shared	False	✓	✓	✓	
use-http-disk-cache-write	Whether to memorize HTTP responses on disk.	Shared	False	✓	✓	✓	
use-http-memory-cache-read	Whether to use HTTP responses from previous queries stored in memory that can answer the current query.	OData	True	✓	✓	✓	
use-http-memory-cache-write	Whether to memorize HTTP responses from previous queries for use by future queries.	OData	True	✓	✓	✓	

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3 Schema: Native

3.1 Tables

3.1.1 NATIVEPLATFORMSCALARREQUESTS

Direct access to native API.

Catalog: OpenSpendingNl

Schema: Native

Alias: `npt`

Documentation:

The NativePlatformScalarRequests table provides direct access to the native API protocol over an established connection to the openspending.nl API server. It will contain a new row for every row inserted with a native API request in PAYLOAD_TEXT with the results of unaltered forwarding of the payload to the openspending.nl API server.

Retrieve: true

Insert: true

Update: false

Delete: false

View Columns

The columns of the view `NATIVEPLATFORMSCALARREQUESTS` are shown below. Each column has an SQL data type. A new non-null value must be provided for every required column at all times during insert.

Name	Data Type	Label	Required	Documentation
BLOB_PREFERRED	boolean		☑	Indicator w hether a BLOB result is preferred over text.
BOL_RESPONSE_CACHE_MAX_AGE_SEC	int32		☐	Maximum age in seconds of Bridge Online response cache entries to be used.
CONTENT_TYPE	string(240)		☐	
DATE_ENDED	datetime		☑	
DATE_STARTED	datetime		☑	
DRY_RUN	boolean		☑	
DURATION_MS	int32		☑	
ERROR_MESSAGE_CODE	string(30)		☐	
ERROR_MESSAGE_TEXT	string(32000)		☐	
FAIL_ON_ERROR	boolean		☑	Whether to raise an exception w hen processing the native request triggered an error from the provider.
HTTP_DISK_CACHE_MAX_AGE_SEC	int32		☐	Maximum age in seconds of HTTP disk cache entries to be used.
HTTP_DISK_CACHE_SAVE	boolean		☐	Whether results can be stored in HTTP disk cache.

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Name	Data Type	Label	Required	Documentation
HTTP_DISK_CACHE_USE	boolean		☐	Whether results can be fetched from HTTP disk cache.
HTTP_MEMORY_CACHE_MAX_AGE_SEC	int32		☐	Maximum age in seconds of HTTP memory cache entries to be used.
HTTP_MEMORY_CACHE_SAVE	boolean		☐	Whether results can be stored in HTTP memory cache.
HTTP_MEMORY_CACHE_USE	boolean		☐	Whether results can be fetched from HTTP memory cache.
HTTP_METHOD	string(30)		☐	
HTTP_STATUS_CODE	int16		☐	
ORIG_SYSTEM_GROUP	string(4000)		☐	
ORIG_SYSTEM_REFERENCE	string(4000)		☐	
PAYLOAD_TEXT	string		☐	
RESULT_BLOB	byte[]		☐	
RESULT_DATE_TIME_UTC	datetime		☐	
RESULT_NUMBER	decimal		☐	
RESULT_TEXT	string		☐	
SUCCESSFUL	boolean		☑	
TIMEOUT_SEC	int32		☐	Timeout in seconds.
TRANSACTION_ID	int32		☑	Incrementing ID of the transaction.
URL	string(4000)		☐	

4 Schema: OpenSpendingNl

4.1 Tables

4.1.1 documents

Catalog: OpenSpendingNl

Schema: OpenSpendingNl

Primary Keys: id

This is a read-only table. The openspending.nl API may not support changing the data or the Invantive SQL driver for openspending.nl does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the openspending.nl API.

Select openspending.nl API URL: `/documents/?limit=1000`

Insert openspending.nl API URL: `/documents/?limit=1000`

Update openspending.nl API URL: `/documents/?limit=1000`

Delete openspending.nl API URL: `/documents/?limit=1000`

Field Selection Method: NotRequired

Table Columns

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The columns of the table `documents` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
calendar_year	int32		☐	
created_at	datetime		☐	
document	string		☐	
gov_code	string		☐	
gov_type	string		☐	
government_aggregation	string		☐	
government_code	string		☐	
government_country	string		☐	
government_created_at	datetime		☐	
government_display_kind	string		☐	
government_id	int32		☐	
government_intro	string		☐	
government_kind	string		☐	
government_latitude	double		☐	
government_location	string		☐	
government_longitude	double		☐	
government_metrics	string		☐	
government_name	string		☐	
government_resource_uri	string		☐	
government_slug	string		☐	
government_state	string		☐	
government_updated_at	string		☐	
government_w ebsite	string		☐	
id	int32		☐	
kind	string		☐	
parsed_at	datetime		☐	
period	int32		☐	
plan	string		☐	
resource_uri	string		☐	
updated_at	datetime		☐	
url	string		☐	

4.1.2 entries

Catalog: OpenSpendingNl

Schema: OpenSpendingNl

Primary Keys: document_id

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This is a read-only table. The openspending.nl API may not support changing the data or the Invantive SQL driver for openspending.nl does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the openspending.nl API.

Select openspending.nl API URL: `/entries/?limit=1000`

Insert openspending.nl API URL: `/entries/?limit=1000`

Update openspending.nl API URL: `/entries/?limit=1000`

Delete openspending.nl API URL: `/entries/?limit=1000`

Field Selection Method: NotRequired

Table Columns

The columns of the table `entries` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
calendar_year	int32		☐	
code_cat	string		☐	
code_main	string		☐	
code_sub	string		☐	
direction	string		☐	
document_id	int32		☐	
gov_code	string		☐	
gov_type	string		☐	
labels	string		☐	
period	int32		☐	
plaatsing	string		☐	
resource_uri	string		☐	
type	string		☐	
value	string		☐	

4.1.3 governments

Catalog: OpenSpendingNl

Schema: OpenSpendingNl

Primary Keys: id

This is a read-only table. The openspending.nl API may not support changing the data or the Invantive SQL driver for openspending.nl does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the openspending.nl API.

Select openspending.nl API URL: `/governments/?limit=1000`

Insert openspending.nl API URL: `/governments/?limit=1000`

Update openspending.nl API URL: `/governments/?limit=1000`

Delete openspending.nl API URL: `/governments/?limit=1000`

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Field Selection Method: NotRequired

Table Columns

The columns of the table `governments` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
aggregation	string		☐	
code	string		☐	
country	string		☐	
created_at	datetime		☐	
display_kind	string		☐	
id	int32		☐	
intro	string		☐	
kind	string		☐	
latitude	double		☐	
location	string		☐	
longitude	double		☐	
metrics	string		☐	
name	string		☐	
resource_uri	string		☐	
slug	string		☐	
state	string		☐	
updated_at	string		☐	
w ebsite	string		☐	

4.1.4 labels

Catalog: OpenSpendingNl

Schema: OpenSpendingNl

Primary Keys: code

This is a read-only table. The openspending.nl API may not support changing the data or the Invantive SQL driver for openspending.nl does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the openspending.nl API.

Select openspending.nl API URL: `/labels/?limit=1000`

Insert openspending.nl API URL: `/labels/?limit=1000`

Update openspending.nl API URL: `/labels/?limit=1000`

Delete openspending.nl API URL: `/labels/?limit=1000`

Field Selection Method: NotRequired

Table Columns

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The columns of the table `labels` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
code	string		☐	
direction	string		☐	
document_id	int32		☐	
label	string		☐	
resource_uri	string		☐	
slug	string		☐	
type	string		☐	

4.1.5 metrics

Catalog: OpenSpendingNl

Schema: OpenSpendingNl

Primary Keys: id

This is a read-only table. The openspending.nl API may not support changing the data or the Invantive SQL driver for openspending.nl does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the openspending.nl API.

Select openspending.nl API URL: `/metrics/?limit=1000`

Insert openspending.nl API URL: `/metrics/?limit=1000`

Update openspending.nl API URL: `/metrics/?limit=1000`

Delete openspending.nl API URL: `/metrics/?limit=1000`

Field Selection Method: NotRequired

Table Columns

The columns of the table `metrics` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
calendar_year	int32		☐	
factor	decimal		☐	
id	int32		☐	
metric	string		☐	
resource_uri	string		☐	

4.1.6 transaction_columns

Catalog: OpenSpendingNl

Schema: OpenSpendingNl

Primary Keys: id

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This is a read-only table. The openspending.nl API may not support changing the data or the Invantive SQL driver for openspending.nl does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the openspending.nl API.

Select openspending.nl API URL: `/transactions/columns/?limit=1000`

Insert openspending.nl API URL: `/transactions/columns/?limit=1000`

Update openspending.nl API URL: `/transactions/columns/?limit=1000`

Delete openspending.nl API URL: `/transactions/columns/?limit=1000`

Field Selection Method: NotRequired

Table Columns

The columns of the table `transaction_columns` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
created_at	datetime		☐	
document_byline	string		☐	
document_created_at	datetime		☐	
document_doc_type	string		☐	
document_document	string		☐	
document_government_aggregation	string		☐	
document_government_code	string		☐	
document_government_country	string		☐	
document_government_created_at	datetime		☐	
document_government_display_kind	string		☐	
document_government_id	int32		☐	
document_government_intro	string		☐	
document_government_kind	string		☐	
document_government_latitude	double		☐	
document_government_location	string		☐	
document_government_longitude	double		☐	
document_government_metrics	string		☐	
document_government_name	string		☐	
document_government_resource_uri	string		☐	
document_government_slug	string		☐	
document_government_state	string		☐	
document_government_updated_at	string		☐	
document_government_website	string		☐	
document_id	int32		☐	
document_index_name	string		☐	
document_kind	string		☐	

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Name	Data Type	Label	Required	Documentation
document_parsed_at	datetime		☐	
document_resource_uri	string		☐	
document_title	string		☐	
document_updated_at	datetime		☐	
document_year	string		☐	
id	int32		☐	
key	string		☐	
label	string		☐	
resource_uri	string		☐	
updated_at	datetime		☐	

4.1.7 transaction_views

Catalog: OpenSpendingNl

Schema: OpenSpendingNl

Primary Keys: id

This is a read-only table. The openspending.nl API may not support changing the data or the Invantive SQL driver for openspending.nl does not cover it. In the latter case, please use the table `NativePlatformScalarRequests` to upload data to the openspending.nl API.

Select openspending.nl API URL: `/transactions/views/?limit=1000`

Insert openspending.nl API URL: `/transactions/views/?limit=1000`

Update openspending.nl API URL: `/transactions/views/?limit=1000`

Delete openspending.nl API URL: `/transactions/views/?limit=1000`

Field Selection Method: NotRequired

Table Columns

The columns of the table `transaction_views` are shown below. Each column has an SQL data type.

Name	Data Type	Label	Required	Documentation
created_at	datetime		☐	
document_byline	string		☐	
document_created_at	datetime		☐	
document_doc_type	string		☐	
document_document	string		☐	
document_government_aggregation	string		☐	
document_government_code	string		☐	
document_government_country	string		☐	
document_government_created_at	datetime		☐	

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Name	Data Type	Label	Required	Documentation
document_government_display_kind	string		☐	
document_government_id	int32		☐	
document_government_intro	string		☐	
document_government_kind	string		☐	
document_government_latitude	double		☐	
document_government_location	string		☐	
document_government_longitude	double		☐	
document_government_metrics	string		☐	
document_government_name	string		☐	
document_government_resource_uri	string		☐	
document_government_slug	string		☐	
document_government_state	string		☐	
document_government_updated_at	string		☐	
document_government_website	string		☐	
document_id	int32		☐	
document_index_name	string		☐	
document_kind	string		☐	
document_parsed_at	datetime		☐	
document_resource_uri	string		☐	
document_title	string		☐	
document_updated_at	datetime		☐	
document_year	string		☐	
id	int32		☐	
name	string		☐	
page_size	int32		☐	
paging	boolean		☐	
resource_uri	string		☐	
slug	string		☐	
updated_at	datetime		☐	

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