Contents

1 Invantive Basics 1
1.1 Configuration .................................................................................................................. 1
   1.1.1 Customer Service .................................................................................................. 1
   1.1.2 OS Platform ......................................................................................................... 1
   1.1.3 Startup Checks .................................................................................................... 1
   1.1.4 Cryptography ...................................................................................................... 1
   1.1.5 UI Language ........................................................................................................ 2
   1.1.6 Folders .................................................................................................................. 2
2 Invantive SQL 3
2.1 Language ......................................................................................................................... 4
   2.1.1 Compatibility ......................................................................................................... 4
   2.1.2 Distributed SQL, Databases and Data Containers ............................................... 4
   2.1.3 Service Providers ................................................................................................ 4
   2.1.4 Partitioning .......................................................................................................... 4
   2.1.5 Identifiers .............................................................................................................. 5
   2.1.6 Procedural SQL .................................................................................................... 5
   2.1.7 Licensing .............................................................................................................. 5
   2.1.8 Settings.xml .......................................................................................................... 5
   2.1.9 Group Functions .................................................................................................. 5
   2.1.10 Locking ............................................................................................................... 6
   2.1.11 Transactions ...................................................................................................... 6
   2.1.12 Grammar ............................................................................................................ 6
2.2 Providers .......................................................................................................................... 96
   2.2.1 Provider Atom10 ................................................................................................ 96
   2.2.2 Provider AutoTask ............................................................................................... 96
   2.2.3 Provider CbsNl ................................................................................................... 96
   2.2.4 Provider Conversion ........................................................................................... 98
   2.2.5 Provider DataCache ........................................................................................... 103
   2.2.6 Provider DataDictionary .................................................................................... 108
   2.2.7 Provider DocumentCloud .................................................................................. 111
   2.2.8 Provider Dropbox .............................................................................................. 112
   2.2.9 Provider Dummy .................................................................................................. 113
   2.2.10 Provider DynamicsCrm .................................................................................... 114
   2.2.11 Provider EzbExchangeRates ............................................................................ 114
   2.2.12 Provider Edifact ............................................................................................... 114
   2.2.13 Provider ExactOnlineAll .................................................................................... 115
   2.2.14 Provider EzBase ............................................................................................... 124
   2.2.15 Provider Facebook ............................................................................................ 125
   2.2.16 Provider Freshdesk ........................................................................................... 127
   2.2.17 Provider Fp ......................................................................................................... 130
   2.2.18 Provider GitLab .................................................................................................. 132
   2.2.19 Provider bmdB2Udb .......................................................................................... 132
   2.2.20 Provider InMemoryStorage .............................................................................. 132
   2.2.21 Provider Invantive.Producer .......................................................................... 138
   2.2.22 Provider JIRA ................................................................................................... 140
   2.2.23 Provider Kadaster .............................................................................................. 142
   2.2.24 Provider KeePass ............................................................................................. 144
   2.2.25 Provider LastResort .......................................................................................... 146
   2.2.26 Provider Linkedin .............................................................................................. 151
   2.2.27 Provider LoketNl ............................................................................................... 152
   2.2.28 Provider Magento ............................................................................................. 154

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Index

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1 Invantive Basics
1.1 Configuration

1.1.1 Customer Service
All Invantive products exchanges messages with a central Customer Service node. These messages include:

- error messages for analysis,
- usage statistics for billing.

On Invantive-internal development workstations only, a non-standard Customer Service node can be selected by specifying a deviating URL in the environment variable `INVANTIVE_CS_BASE_URL`.

1.1.2 OS Platform
A variety of Invantive products is available on Windows, Linux and Mac OS X. The list of supported platforms varies per product, depending on the availability of the libraries such as Microsoft .NET Core.

The OS platform is automatically determined by Invantive software, but sometimes can raise bugs given the bleeding edge nature of Microsoft .NET Core. It is possible to overrule the automatic detection of the OS platform by assigning a value to the environment variable `INVANTIVE_FORCED_OS`. The following values are supported:

- windows: Microsoft Windows,
- linux: Linux,
- osx: Mac OS X.

1.1.3 Startup Checks
The Invantive products execute a number of checks at application start to ensure that the environment running the software meets a number of pre-conditions as established by Invantive. These checks can be disabled for analysis purposes and out-of-the-ordinary deployment scenarios.

Support on products is only available when checks are not manually configured.

The following environment variables allow manual configuration of the checks by setting them to 'true' or 'false':

- `INVANTIVE_CHECK_SYSTEM_COMPATIBILITY`: validate system compatibility.
- `INVANTIVE_MAINTAIN_VSTO`: re-activate Invantive VSTO add-ins when disabled.
- `INVANTIVE_CHECK_OS_UPDATES`: validate OS updates have been applied sufficiently recent.

Configuration of checks is solely available on the Windows OS platform.

1.1.4 Cryptography
The Invantive products use cryptographic operations to protect:

- License key
- Invantive Keychain
By default, a key pair is used and stored in the profile of the user for encryption and decryption.

**Windows**

On Windows, the encryption is normally done using Windows-managed encryption protocols. The key elements are stored in the roaming profile of the current user.

In some deployment scenarios, a user has only a temporary Windows profile. In that case it is not possible to store a key pair. This is typically signaled by an itgenlic510 error code.

As an alternative, you can configure the environment variable `INVANTIVE_CRYPTOGRAPHY` to the value "MACHINE" to use a key pair that is stored solely on the device.

By setting the environment variable `INVANTIVE_RSA` to `INVANTIVE`, encryption on Windows is also managed as on other platforms by custom Invantive code at the expense of loss of some security features. Often Windows patches break the functionality of previously Windows-managed encryption keys, typically signaled by a error like "Key not valid for use in specified state". Switching to custom Invantive code will solve this problem.

**Linux, Mac OSX, Android, iPhone, Windows on Parallels**

On all other platforms, Invantive offers solely encryption using key elements stored in files in the RSA folder.

**1.1.5 UI Language**

The Invantive products supported approximately ten languages. On first startup, the language of the Windows version will be used when supported. Otherwise US-English is used.

The license decides which from the languages are supported.

Additionally, the user interface language chosen can further be restricted by setting the environment variable `INVANTIVE_ALLOWED_LANGUAGE_CODES` to a comma-separated list of two characters ISO 639-1 codes.

**1.1.6 Folders**

The Invantive products store configuration and runtime information in a folder hierarchy. This hierarchy is located within the Invantive folder of the user profile. It can be opened in Windows Explorer by entering `%USERPROFILE%\Invantive` in the location bar.

The location of the folder hierarchy can be changed using environment variables. The central location can be changed by setting the environment variable `INVANTIVE_CONFIGURATION_FOLDER` to a different folder.

A number of subfolders can be relocated too:

- `INVANTIVE_CONFIGURATION_BACKUP_FOLDER`: the folder with backups of settings files. Defaults to the master folder plus "Backup".
- `INVANTIVE_CONFIGURATION_CACHE_FOLDER`: the folder with disk cache files. Defaults to the master folder plus "Cache".
- `INVANTIVE_CONFIGURATION_HTTP_CACHE_FOLDER`: the folder with HTTP disk cache files. Defaults to the root cache folder plus "http" and the OS-user and front-end user.
• INVANTIVE_CONFIGURATION_DATA_CACHE_CACHE_FOLDER: the folder with Data Cache disk cache files. Defaults to the root cache folder plus "datacache". Disk cache files improve performance of HTTP downloads, but when necessary can be purged.

• INVANTIVE_CONFIGURATION_LOG_FOLDER: the folder with log files. Defaults to the master folder plus "Log".

• INVANTIVE_CONFIGURATION_DATABASES_FOLDER: the folder with databases files. Defaults to the master folder.

• INVANTIVE_CONFIGURATION_PLUGINS_FOLDER: the folder with plugin files. Defaults to the master folder plus "Plugins".

• INVANTIVE_CONFIGURATION_PROVIDERS_FOLDER: the folder with provider files. Defaults to the master folder plus "Providers".

• INVANTIVE_CONFIGURATION_RSA_FOLDER: the folder with RSA configuration files. Defaults to the master folder plus "RSA".

• INVANTIVE_CONFIGURATION_TEMPLATES_FOLDER: the folder with template files. Defaults to the master folder plus "Templates".

• INVANTIVE_CONFIGURATION_TRACE_FOLDER: the folder with trace files. Defaults to the master folder plus "Trace".

The values may contain any combination of the following placeholders which will be expanded:

• iid: Invantive Installation ID.

• sessionid: Invantiv session ID.

• frontenduser: name of front-end user (when available).

• osuser: name of operating system user.

A folder can be configured for custom translations which overrule all default translations using the environment variable INVANTIVE_I18N_FOLDER.

2 Invantive SQL

One of the most familiar questions at our support desk is "what functions are available" in Invantive SQL to query data in Exact Online.

This second-generation SQL parser is an extensive implementation of many commonly found SQL constructs from the ANSI SQL standard.

It includes in addition to the features of the first-generation SQL parser also:

• joins,

• outer joins,

• cross joins,

• group functions such as stddev, avg and listagg,

• value functions such as xmlescape and round.
There are two flavors shipped:

- Free version: second-generation SQL parser without joins and some upcoming non-ANSI standard advanced mapping functions for large volume financial analysis and reporting.
- Paid version: identical to the free version but with joins and advanced mapping functions.

The EBNF-grammar in Grammar depicts the possibilities.

2.1 Language

2.1.1 Compatibility

The Invantive implementation of SQL is based upon ANSI SQL, extended by aspects from popular SQL implementations such as PostgreSQL, MySQL, Oracle, Teradata and Microsoft SQL Server. It is topped with Invantive-specific extensions, especially for procedural SQL, distributed SQL and distributed transactions. The basis is to implement functions such that as little as possible changes are necessary to run a SQL statement originating from another SQL implementation on Invantive SQL. For instance, to retrieve the current time you can use 'sysdate', 'now', 'getdate()' and 'sysdatetime' to name a few. The same holds for the procedural extension Invantive Procedural SQL, which reflects SQL/PSM and makes it easy to port Oracle PL/SQL or PostgreSQL PL/pgSQL statements.

2.1.2 Distributed SQL, Databases and Data Containers

It is easy to exchange and/or combine data across the supported platforms with data. To each platform (such as Salesforce or Exact Online Belgium) multiple connections can be active with the same or different platform-specific connection settings. Each open connection to a platform is named a 'data container'.

All opened connections together are named a 'database'.

When multiple data containers have been opened, each one has an alias to refer it by in Invantive SQL statements. For instance, a connection can be open for two different customer accounts on Exact Online Netherlands aliased as 'eolinl_comp1' and 'eolinl_comp55') and one for an Exact Online Belgium custom, aliased as 'eolbe_my_new_company'. The aliases can be freely chosen as long as they are valid identifiers and defined in the databases configuration file 'settings.xml'.

2.1.3 Service Providers

A number of special connections are always made, each of which can occur at most once. These are the 'service providers' such as:

- 'datadictionary': metadata of the current database, such as list of tables and executed SQL statements performance.
- 'os': information on the operating system running the SQL engine, such as reading file contents.
- 'smtp': synchronously send mails through SMTP.

2.1.4 Partitioning

Especially online platforms have a multi-tenant structure, in which the data is partitioned per customer, company or person. When the data model is identical across tenants, Invantive SQL considers them 'partitions'. SQL statements can run across multiple or one partitions, often in parallel. This enables consolidation scenarios across partitions (such as Exact Online or Nmbrs companies) as well as high-performance in MPP environments.
The partitions to be used can be specified with the 'use' statement, either through an explicit list of partitions to be selected across data containers, or through a SQL select statement returning the list of partitions to use. Please note that although the 'use' statement resembles the 'use DATABASE' statement on Microsoft SQL Server or PostgreSQL you can on Invantive SQL have multiple partitions active at the same time in one user session.

2.1.5 Identifiers

For identifiers, the regular conventions hold for the set of allowed characters. Depending on the platform, the identifiers are case sensitive or not. In general, it is best to assume that the identifier are case insensitive. There is no length limit on an identifier imposed by Invantive SQL.

2.1.6 Procedural SQL

Invantive Procedural SQL (or "PSQL" for short) is a procedural extension on top of Invantive SQL. It is based on the ISO-standard 9075-4:2016 (SQL/PSM) and extends Invantive SQL with procedural options like blocks, variables, conditional execution and loops. The procedural code is - together with the Invantive SQL contained - as a whole into pseudo-code and then executed.

The procedural code does not lean on the procedural options of the platforms being used, so it is easy to retrieve and change data in all supported cloud, file and database platforms. The pre-compiled procedural code does not perform context switches between procedural and SQL logic.

2.1.7 Licensing

The available functionality of Invantive SQL features is based upon the license features. For instance the free implementation of Invantive SQL is limited to 1.000 rows and no access to group functions. Please consult the data dictionary contents for your license features.

2.1.8 Settings.xml

The file settings.xml defines for a user or program the list of defined databases. Databases are grouped in 'database groups' for visual display. Database groups have no further functionality. Each database consists of one or multiple data containers.

The file 'settings.xml' is most often found on Microsoft Windows in your "%USERPROFILE%\invantive' folder, such as 'c:\users\john.doe\invantive\settings.xml'. It is shared across all Invantive SQL product installations for the user.

There are many scenarios to share database specifications across a user community, such as WAN-scenarios with Invantive Web Service, large corporate scenarios using DNS-entries as well as file shares, included files as well as single user solutions. Please involve a consultant when you want to deploy across thousands of users or more.

For user communities of up to 10 users, we recommend that company-specific settings are grouped per role in a separate file named 'settings-ROLE.xml' and placed in the default folder. Invantive SQL will automatically merge these files in the main settings.xml file.

2.1.9 Group Functions

The Invantive implementation of SQL is based upon ANSI SQL, extended by aspects from popular SQL implementations such as PostgreSQL, MySQL, Oracle, Teradata and Microsoft SQL Server. It is topped of with Invantive-specific extensions, especially for distributed SQL and distributed transactions. The basis is to implement functions such that as little as possible changes are necessary to run a SQL statement originating from another SQL implementation on Invantive SQL. For instance, to retrieve the current time you can use 'sysdate', 'now', 'getdate()' and 'sysdatetime' to name a few.
Popular group functions such as 'stddev' are available. However, currently you can not combine in one un-nested SQL statement both group functions as well as expressions on the variables. In that case use an inner (nested) SQL statement to apply the expressions on the data, and execute the group functions in the outer SQL statement with the syntax 'select group() from ( select ... from ... )'.

2.1.10 Locking

An Invantive SQL statement can work with many traditional and online platforms. There are no locking features on data and objects, since few online and traditional platforms connected provide these and the typical use of distributed transactions leave even less opportunity for data and object locking.

2.1.11 Transactions

Invantive SQL has limited support for transactions. DML is forwarded to a platform and depending on the platform an error can cause part of the work to be registered or everything to be rolled back. Within the SQL engine, multiple changes can be collected and forwarded to the platform at once. For instance, when creating an EDIFACT message you need to combine an invoice header with invoice lines into one EDIFACT message. Collection of multiple changes is done using the 'identified by' and 'attach to' syntax, optionally preceded by 'begin transaction'.

2.1.12 Grammar

sqlBatch:

sqlOrPSqlStatement BATCHSEPARATOR BATCHSEPARATOR

sqlBatch ::= sqlOrPSqlStatement ( BATCHSEPARATOR sqlOrPSqlStatement])* BATCHSEPARATOR?

no references

sqlOrPSqlStatement:

sqlStatement pSqlStatement

sqlOrPSqlStatement ::= sqlStatement
| pSqlStatement

referenced by:

| sqlBatch

sqlStatement:

An Invantive SQL can retrieve data from many traditional and online platforms. Many platforms also support the use of DML (Data Manipulation Language) statements to change the data contained. On a few platforms you can execute DDL (Data Definition Language) statements to create new data structure or objects such as tables, procedures or sequences.

selectStatement insertStatement updateStatement deleteStatement ddlStatement setState-

ment useStatement transactionStatement executeFileStatement

selectStatement:
A SQL select statement retrieves data from one or multiple data containers. A select statement can be composed of multiple data sets retrieved from many platforms, combined by set operators such as 'union'.

Often the performance of cloud platforms is less than traditional database platforms. With the 'limit' clause a limited number of rows can be retrieved quickly from a table or view after applying sorting as specified by the possibly present 'order by'. An alternative for a 'limit' clause is to use the 'top' clause.

A sequence of Invantive SQL statements, separated by the semi-colon separator character. Each statement in the SQL batch will be executed consecutively. Execution will be stopped when an error occurs during execution of a statement.

uniqueSelectStatement setOperatorSelectStatement orderBy limitClause
selectStatement ::= uniqueSelectStatement setOperatorSelectStatement orderBy limitClause

inSelectStatement:
A SQL select statement retrieves data from one or multiple data containers. This variant makes this data available to a containing SQL select statement. This feature is also known as an 'inline view'.
SQL is based upon a solid mathematical foundation named 'set theory' with some exceptions. The set operators of Invantive SQL enable you to combine sets of data sets such as merging two sets of data. Please note that SQL actually uses 'bags', which opposed to 'sets', allow duplicates. To change bags of data into sets, either use 'distinct' or the 'union' set operator without 'all'. In general, the extensive use of 'distinct' signals bad database design.

The 'union' set operator returns the union of the data on the left and right side of the union while removing duplicate rows. The 'union all' set operator returns the union of the data on the left and right side of the union without removing duplicate rows. The 'minus' set operator returns all rows from the left side which do not occur in the right side. The 'intersect' set operator returns all rows that occur both in the left and right side.

```
UNION ALL MINUS_C INTERSECT uniqueSelectStatement
```

**uniqueSelectStatement:**

Retrieves a data set from one or more data containers.

```
```

**dataSource:**

A data source can be a table, a table with parameters or a nested select (an 'inline view').

```
dataSource ::= ( tableOrFunctionSpec | embeddedSelect | xmlTableSpec | csvTableSpec | jsonTableSpec ) aliased?
```

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select:
SELECT
  select ::= SELECT
referenced by:
  - uniqueSelectStatement

executionHints:
Execution hints allow you to control individually the execution of SQL statements. Whenever possible, the hints will be used. In contrary to other platforms, Invantive SQL requires a hint to be valid according to the grammar when specified. This reduces the engineering risk that hints become invalid by accident.

EXECUTION_HINT_START joinSet noJoinSet ods resultSetName lowCost httpDiskCache httpMemoryCache EXECUTION_HINT_END
  executionHints ::= EXECUTION_HINT_START ( joinSet | noJoinSet | ods | resultSetName | lowCost | httpDiskCache | httpMemoryCache )* EXECUTION_HINT_END
referenced by:
  - uniqueSelectStatement

httpDiskCache:
The http_disk_cache-hint specifies whether messages may be cached on disk when the provider uses HTTP to exchange data with the backing platform. This typically holds only for cloud-based platforms such as Exact Online, Teamleader or Salesforce. The default setting is false. The first parameter is a boolean whether data may be taken from the disk cache, the second parameter is a boolean whether data retrieved must be stored also in the disk cache and the third parameter is an integer that specifies the number of seconds before a disk cache hit found is to considered stale.

The use of the http_disk-cache-hint is recommended for data which is known to change seldom such as seeded or reference data. The contents of the disk cache are persistent across Invantive SQL sessions.

The disk cache is located in the Cache folder of the Invantive configuration folder.

HTTP_DISK_CACHE PARENTESIS_OPEN booleanConstant COMMA booleanConstant COMMA intervalConstant PARENTESIS_CLOSE
  httpDiskCache ::= HTTP_DISK_CACHE ( PARENTESIS_OPEN booleanConstant ( COMMA booleanConstant ( COMMA intervalConstant )? )? )? PARENTESIS_CLOSE
referenced by:
  - executionHints
httpMemoryCache:

The http_memory_cache-hint specifies whether messages may be cached in memory when the provider uses HTTP to exchange data with the backing platform. This typically holds only for cloud-based platforms such as Exact Online, Teamleader or Salesforce. The default setting is false. The first parameter is a boolean whether data may be taken from the memory cache, the second parameter is a boolean whether data retrieved must be stored also in the memory cache and the third parameter is an integer that specifies the number of seconds before a memory cache hit found is to considered stale.

The use of the http_memory-cache-hint is recommended for data which is known to change seldom such as seeded or reference data. The contents in the memory cache are forgotten across Invantive SQL sessions.

The memory cache is located in the Cache folder of the Invantive configuration folder.

```sql
httpMemoryCache ::= HTTP_MEMORY_CACHE ( PARENTHESIS_OPEN booleanConstant COMMA booleanConstant COMMA intervalConstant PARENTHESIS_CLOSE )?
```

referenced by:
- `executionHints`

ods:

The ods-hint controls the use of the Invantive Data Cache stored in a relational database. The Invantive Data Cache is also the basis of the Operational Data Store managed by Invantive Data Replicator and the data warehouses managed by Invantive Data Vault. The ods-hint specifies the maximum age data from the data cache eligible for use.

The boolean specifies whether the Data Cache may be used to answer a query. Set it to false to disable use of Data Cache for the duration of the query. Keep it on the default true to use Data Cache.

The interval specifies the period of time during which cached results are considered sufficiently fresh for use, such as '30 minutes'.

When no interval is present, the actual platform is consulted. The default with Invantive Data Cache enabled is to always use the data cache contents when not stale according to the metadata of the data cache. In general, that defaults to a maximum age of 7 days.

```sql
ods ::= ODS ( PARENTHESIS_OPEN booleanConstant COMMA intervalConstant PARENTHESIS_CLOSE )?
```

referenced by:
- `executionHints`

resultSetName:
RESULT_SET_NAME PARENTHESES_OPEN stringConstant PARENTHESES_CLOSE
resultSetName ::= RESULT_SET_NAME \(\text{stringConstant} \ PARENTHESES_CLOSE\) \?

referenced by:
- `executionHints`

joinSet:
Control join approach between two data sources. A column-indexed lookup will be used instead of a full table scan when the number of rows on the left-hand side does not exceed the maximum number of rows specified in the hint. When not specified, a hash lookup will only be used when the number of rows on the left-side does not exceed 5,000.

The actual implementation of a hash lookup depends on the platform on which the data container runs. For instance with OData, a number of requests will be made using an in-construct with a limited number of in-values. With a relation database platform, a native SQL 'in' will be used.

The first identifier is the alias of the table on the right-hand side of the join. The second identifier is the name of the column used to join upon in the right-hand side. The numeric constant specifies up to what number of rows on the left-hand side of the join will allow the join set hint to be used. When the number of rows exceeds the numeric constant, a full table join is made.

The following example takes for instances 5,000 sales invoices from an Exact Online environment with 100,000 sales invoices. Each sales invoice has 4..10 lines. The join does not retrieve all sales invoices nor all invoice lines, but instead fetches the 5,000 sales invoices using the where-clause, and then retrieves the related invoice lines using a column-indexed lookup by invoiceid. Since Exact Online is an OData source, the approximately 30,000 invoice lines will be retrieves in 300 session I/Os each having an in-construct for 100 lines on invoiceid.

```
select /*+ join_set(sil, invoiceid, 10000) */ * from ExactOnlineREST..SalesInvoices sik join ExactOnlineREST..SalesInvoiceLines sil on sil.invoiceid = sik.invoiceid where sik.status = 50 and sik.InvoiceDate between to_date( :P_RECEIPT_DATE_FROM , 'yyyymmdd') and to_date( :P_RECEIPT_DATE_TO, 'yyyymmdd')
```

joinSet ::= JOIN_SET PARENTHESES_OPEN identifier COMMA identifier COMMA numericConstant PARENTHESES_CLOSE

```
joinSet ::= JOIN_SET \(\text{identifier} \ PARENTHESES_CLOSE\) \?
```

noJoinSet:
The no_join_set hint disables the use of hash-joins. It can be enabled using the join_set hint.
noJoinSet ::= NO_JOIN_SET ( COMMA identifier )? PARENTHESIS_CLOSE

variableList::=
variableName COMMA variableName
(variableList ::= variableName ( COMMA variableName )?)?

lowCost:
The low_cost-hint specifies that the select with the hint must be considered a select with low execution costs. Low execution costs trigger early evaluation during parsing. By default, select statements using solely in memory storage, dummy and data dictionary are considered low cost and evaluated early. The evaluation of all others is delayed as long as possible.

The use of the low_cost-hint is recommended when the select is used with a 'in ( select ... )' syntax and the developer knows beforehand that it will evaluate fast to values and that the use of these values will allow the use of server-side filtering for the outer select.

lowCost ::= LOW_COST

distinct:
Addition of the 'distinct' keyword to a SQL select statement de-duplicates the rows returned. Rows are considered duplicates when the values in all selected columns are identical, with two null-values considered equal.

distinct ::= DISTINCT

topClause:
With the 'top' clause a limited number of rows can be retrieved quickly from a table or view after applying sorting as specified by the possibly present 'order by'.

topClause ::= TOP numericConstant
topClause
::= TOP numericConstant

referenced by:
  · uniqueSelectStatement

limitClause:
With the 'limit' clause a limited number of rows can be retrieved quickly from a table or view after applying sorting as specified by the possibly present 'order by'.

LIMIT numericConstant

limitClause
::= LIMIT numericConstant

referenced by:
  · selectStatement

embeddedSelect:
An embedded select, also known as an 'inline view', retrieves rows using the specified select statement. These rows are consumed by the outer select as were it the results of retrieving the rows from a table.

Invantive SQL does not allow grouping rows with expressions as columns. An embedded select is typically used to evaluate expressions to rows with solely constants. After applying the embedded select the group operators can be applied.

parenthesisOpen selectStatement parenthesisClose

embeddedSelect
::= parenthesisOpen selectStatement parenthesisClose

referenced by:
  · dataSource

tableSpec:
A table specification without parameters. The optional alias after the at-sign specifies a specific data source to be used, such as 'exactonlinerest..journals@eolbe' specifying the use of Exact Online Belgium when 'eolbe' is associated by the database definitions in settings.xml with Exact Online Belgium.

A number of special so-called 'service providers' are always present, such as 'datadictionary' for use by an alias.

fullTableIdentifier distributedAliasDirective
tableSpec
::= fullTableIdentifier distributedAliasDirective

referenced by:
  · alterPersistentCacheDropStatement
  · alterPersistentCacheSetTableOptions
  · alterPersistentCacheTableRefreshStatement
Invantive SQL

- `createTableStatement`:  
- `deleteStatement`:  
- `dropTableStatement`:  
- `insertStatement`:  
- `updateStatement`:  

**tableOrFunctionSpec:**

A table specification requiring a comma-separated list of parameters to determine the rows to be retrieved.

Traditional SQL syntax did not provide for parameterized queries, matching set theory. Modern variants such as pipelined table functions allow a stored procedure or other imperative language-based approaches to generate rows based upon parameter values. Many data containers support queries that return rows based upon parameter values. This holds especially for SOAP web services. Table specifications with parameters ease queries on such data containers.

The optional alias after the at-sign specifies a specific data source to be used, such as 'exactonlinerest..journals@eolbe' specifying the use of Exact Online Belgium when 'eolbe' is associated by the database definitions in settings.xml with Exact Online Belgium.

```latex
fullTableIdentifier tableFunctionSpec distributedAliasDirective 
  tableOrFunctionSpec := fullTableIdentifier tableFunctionSpec distributedAliasDirective
```

**tableFunctionSpec:**

A comma-separated list of parameters to determine the rows to be retrieved by a tableOrFunctionSpec.

```latex
tableFunctionSpec ::= parenthesisOpen expression COMMA parenthesisClose
```

**distributedAliasDirective:**

The distributed alias after the at-sign specifies a specific data source to be used, such as 'exactonlinerest..journals@eolbe' specifying the use of Exact Online Belgium when 'eolbe' is associated by the database definitions in settings.xml with Exact Online Belgium.

A number of special so-called 'service providers' are always present, such as 'datadictionary' for use by an alias.

AT dataContainerAlias

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**distributedAliasDirective**

::= AT dataContainerAlias

referenced by:
- partitionIdentifierWithAlias
- setIdentifier
- tableOrFunctionSpec
- tableSpec

**dataContainerAlias**

When multiple data containers have been defined in settings.xml for a database, each one is assigned an alias. An alias typically takes the form of a limited number of characters. The presence of an alias allows Invantive SQL to precisely determine to what data container forward a request for data.

identifier
dataContainerAlias := identifier

referenced by:
- alterPersistentCacheRefreshStatement
- distributedAliasDirective

**xmlTableSpec**

XMLTABLE parenthesisOpen stringConstant null xmlTablePassing xmlTableLiteral xmlTableColumns parenthesisClose

::= XMLTABLE parenthesisOpen ( stringConstant | null ) ( xmlTablePassing | xmlTableLiteral ) xmlTableColumns parenthesisClose

referenced by:
- dataSource

**xmlTablePassing**

PASSING expression

::= PASSING expression

referenced by:
- xmlTableSpec

**xmlTableLiteral**

LITERAL expression

::= LITERAL expression

referenced by:
• **xmlTableSpec**

**xmlTableColumns:**

```sql
COLUMNS xmlTableColumnSpec COMMA
```

**xmlTableColumnSpec:**

```sql
::= COLUMNS | xmlTableColumnSpec ( COMMA xmlTableColumnSpec ) *
```

**xmlTableColumns** referenced by:

• **xmlTableSpec**

**xmlTableColumnSpec** referenced by:

• **xmlTableColumns**

**jsonTableSpec:**

```sql
JSONTABLE parenthesisOpen stringConstant null jsonTablePassing jsonTableLiteral jsonTableColumns parenthesisClose
```

**jsonTableSpec** referenced by:

• **dataSource**

**jsonTablePassing:**

```sql
PASSING expression
```

**jsonTablePassing** referenced by:

• **jsonTableSpec**

**jsonTableLiteral:**

```sql
LITERAL expression
```

**jsonTableLiteral** referenced by:

• **jsonTableSpec**

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jsonDataColumns:

Columns jsonTableColumnSpec COMMA

jsonDataColumns ::=

jsonDataColumnSpec::=

jsonDataColumns referenced by:

- jsonDataSpec

jsonDataColumnSpec:

identifier dataType PATH stringConstant

jsonDataColumnSpec ::=

jsonDataColumns referenced by:

- jsonDataColumns

csvTableSpec:

CSVTABLE parenthesisOpen csvTablePassing csvTableLiteral csvTableOptions csvTableColumns parenthesisClose

csvTableSpec ::=

csvTableOptions referenced by:

- dataSource

csvTableOptions:

ROW DELIMITER stringConstant COLUMN DELIMITER stringConstant SKIP_LINES numericConstant

csvTableOptions ::=

csvTableColumns referenced by:

- csvTableSpec

csvTableLiteral:

LITERAL expression

csvTableLiteral ::=

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• `csvTableSpec`\[17\]

`csvTablePassing`:

PASSING expression

\[
\text{csvTablePassing} \[18\] ::= \text{PASSING} \[6\] \text{expression} \[39\]
\]

referenced by:

• `csvTableSpec`\[17\]

`csvTableColumns`:

COLUMNS `csvTableColumSpec` COMMA

\[
\text{csvTableColumns} \[18\] ::= \text{COLUMNS} \[5\] \text{csvTableColumSpec} \[18\] ( \text{COMMA} \[7\] \text{csvTableColumSpec} \[18\] )\]

referenced by:

• `csvTableSpec`\[17\]

`csvTableColumSpec`:

identifier `dataType` `POSITION` `numericConstant`

\[
\text{csvTableColumSpec} \[18\] ::= \text{identifier} \[82\] \text{dataType} \[18\] \text{POSITION} \[6\] \text{numericConstant}\]

referenced by:

• `csvTableColumns`\[18\]

`dataType`:

BFILE BIGINT BIGSERIAL BIT BLOB BOOL BOOLEAN BPCHAR BYTE BYTEA CHAR CHARACTER CLOB DATE DATETIME DATETIMEOFFSET DEC DECIMAL DOUBLE FLOAT FLOAT4 FLOAT8 GUID IMAGE INT INT16 INT2 INT32 INT4 INT8 INTEGER INTERVAL LONGBLOB LONGTEXT MEDIUMBLOB MEDIUMINT MEDIUMTEXT MONEY NAME NCHAR NUMBER NUMERIC NVARCHAR OID RAW REAL SERIAL SMALLDATETIME SMALLINT SMALLMONEY SMALLSERIAL TEXT TIME TIMESTAMP TIMESTAMPTZ TIMETZ TINYBLOB TINYINT TINYTEXT UINT16 UINT32 UINT64 UNIQUEIDENTIFIER UUID VARBINARY VARCHAR VARCHAR2 XML XMLTYPE YEAR
dataType ::= BFILE |
    BIGINT |
    BIGSERIAL |
    BIT |
    BLOB |
    BOOL |
    BOOLEAN |
    BPCHAR |
    BYTE |
    BYTEA |
    CHAR |
    CHARACTER |
    CLOB |
    DATE |
    DATETIME |
    DATETIMEOFFSET |
    DEC |
    DECIMAL |
    DOUBLE |
    FLOAT |
    FLOAT4 |
    FLOAT8 |
    GUID |
    IMAGE |
    INT |
    INT16 |
    INT2 |
    INT32 |
    INT4 |
    INT64 |
    INT8 |
    INTEGER |
    INTERVAL |
    LONGBLOB |
    LONGTEXT |
    MEDIUMBLOB |
    MEDIUMINT |
    MEDIUMTEXT |
    MONEY |
    NAME |
    NCHAR |
    NUMBER |
    NUMERIC |
    NVARCHAR |
    OID |
    RAW |
    REAL |
    SERIAL |
    SMALLDATETIME |
    SMALLINT |
    SMALLMONEY |
    SMALLSERIAL
referenced by:
- `csvTableColumnSpec`
- `jsonTableColumnSpec`
- `pSqlItemDeclaration`
- `xmlTableColumnSpec`

**groupBy:**

Grouping of multiple rows into groups is specified by the `groupBy`. A group will be introduced for each distinct combination of column values for the columns listed. The values of grouped columns can be used in the select clause. Columns not being grouped upon can only be used within the context of a group function listed as 'aggregateFunction'.

```
GROUP BY columnList
groupBy[20] ::= GROUP BY columnList[27]
```

referenced by:
- `uniqueSelectStatement`

**orderBy:**

Sort the rows returned as specified by the list of columns. Values are either sorted ascending (the default) or descending.

```
ORDER BY column sortDirection COMMA
```

referenced by:
- `aggregateFunction`
- `selectStatement`
sortDirection:
A sort direction can be either 'asc' for 'ascending' (the default) or 'desc' for 'descending'.

\[
\text{sortDirection} \ ::= \ \text{asc} | \ \text{desc}
\]

referenced by:
- \text{orderBy}

columnList:
A comma-separated list of columns.

\[
\text{columnList} \ ::= \ \text{column} \ ( \ \text{COMMA} \ \text{column} \ )^*
\]

referenced by:
- \text{groupBy}
- \text{insertFieldList}

column:
A column is identified by an identifier, possibly prefixed by the name of the table or the alias of the table from which the column is to be taken.

\[
\text{column} \ ::= \ \text{identifier} \ ( \ \text{DOT} \ \text{identifier} \ )^?\]

referenced by:
- \text{columnList}
- \text{orderBy}
- \text{updateValue}

whereClause:
The where-clause restricts the number of rows in a result set by applying one or more boolean conditions which rows must satisfy.

\[
\text{whereClause} \ ::= \ \text{WHERE} \ \text{booleanExpression}
\]

referenced by:
- \text{deleteStatement}
- \text{uniqueSelectStatement}
- \text{updateStatement}

joinStatements:
A list of join statement.

joinStatement

joinStatements[21]
 ::= joinStatement[22]+

referenced by:
  · uniqueSelectStatement[8]

joinStatement:

A join statement combines two result sets. Only combinations of rows taken from both result sets are returned when they meet the join conditions.

joinCategory join dataSource joinConditions

joinStatement[22]

referenced by:
  · joinStatements[21]

joinCategory:

The join category specifies what combinations of rows are considered. The following variants can be used:

  · inner join, as indicated by 'join' or 'inner join': an inner join returns all combinations of rows from both result sets that meet the join conditions.
  · left outer, as indicated by 'left outer join': a left outer join returns the same rows as an inner join, extended by one row for each row in the left result set having no matching rows in the right result set. Each column that originates from the right result set is assigned a null value.
  · right outer, as indicated by 'right outer join': a right outer join returns the same rows as an inner join, extended by one row for each row in the right result set having no matching rows in the left result set. Each column that originates from the left result set is assigned a null value.
  · full outer, as indicated by 'full outer join': a full outer join returns the same rows as an inner join, extended by one row for each row in the right result set having no matching rows in the left result set. Each column that originates from the left result set is assigned a null value. The results are also extended by one row for each row in the left result set having no matching rows in the right result set. Each column that originates from the right result set is assigned a null value.
  · cross join, as indicated by 'cross join': a cross join returns a Cartesian product of the rows from both result sets. A 'Cartesian product' is a term from set theory, which indicates that all combinations are returned.

inner joinSubCategory outer cross

joinCategory[22]

referenced by:
  · joinStatement[22]

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joinSubCategory:
The join sub-category refines the join category. Please see 'joinCategory' for an explanation.

left right full
joinSubCategory ::= left | right | full

referenced by:
  • joinCategory

join:
JOIN
join ::= JOIN

referenced by:
  • joinStatement

inner:
INNER
inner ::= INNER

referenced by:
  • joinCategory

outer:
OUTER
outer ::= OUTER

referenced by:
  • joinCategory

left:
LEFT
left ::= LEFT

referenced by:
  • functionExpression
  • joinSubCategory

right:
Extracts a substring from a value with the given length from the right side.
Parameters:
- Input: Text to extract substring from.
- Length: Maximum length of the substring.

Returns: Substring from the right side of the input. RIGHT
  \[
  \text{right}^{[23]} ::= \text{RIGHT}^{[23]}
  \]

full:
FULL
  \[
  \text{full}^{[24]} ::= \text{FULL}^{[24]}
  \]

cross:
CROSS
  \[
  \text{cross}^{[24]} ::= \text{CROSS}^{[24]}
  \]

sum:
Group function to sum together individual numerical values. Occurrences of null are considered 0, unless there are only null values. In that case the outcome is null.

PROD UCT
  \[
  \text{product}^{[24]} ::= \text{PRODUCT}^{[24]}
  \]

min:
Group function to find the minimum value from a group of numerical values.

\[
\text{MIN} \quad \text{min}^{24} \quad ::= \quad \text{MIN}^{24}
\]

referenced by:

- \text{aggregateFunction}^{27}

\text{max}:

Group function to find the maximum value from a group of numerical values.

\[
\text{MAX} \quad \text{max}^{25} \quad ::= \quad \text{MAX}^{25}
\]

referenced by:

- \text{aggregateFunction}^{27}

\text{avg}:

Group function to find the average value from a group of numerical values.

\[
\text{AVG} \quad \text{avg}^{25} \quad ::= \quad \text{AVG}^{25}
\]

referenced by:

- \text{aggregateFunction}^{27}

\text{stddev}:

Group function to find the standard deviation from a group of numerical values.

\[
\text{STDDEV} \quad \text{stddev}^{25} \quad ::= \quad \text{STDDEV}^{25}
\]

referenced by:

- \text{aggregateFunction}^{27}

\text{count}:

Group function to find the number of values from a group of values.

\[
\text{COUNT} \quad \text{count}^{25} \quad ::= \quad \text{COUNT}^{25}
\]

referenced by:

- \text{aggregateFunction}^{27}

\text{listagg}:

Group function which concatenates all individual values, separated by the separator when provided and comma plus space otherwise.
LISTAGG

\[ \text{listagg} ::= \text{LISTAGG} \]

referenced by:

- aggregateFunction

asc:

\[ \text{asc} ::= \text{ASC} \]

referenced by:

- sortDirection

desc:

\[ \text{desc} ::= \text{DESC} \]

referenced by:

- sortDirection

joinConditions:

\[ \text{ON booleanExpression} \]

\[ \text{joinConditions} ::= \text{ON} \ \text{booleanExpression} \]

referenced by:

- joinStatement

selectList:

\[ \text{selectPart \ COMMA} \]

\[ \text{selectList} ::= \text{selectPart} \ \text{(COMMA selectPart\*)} \]

referenced by:

- uniqueSelectStatement

selectPart:

\[ \text{part \ aliased \ labeled} \]

\[ \text{selectPart} ::= \text{part} \ \text{aliased? labeled?} \]

referenced by:

- selectList

aliased:
AS alias

\[
\text{aliased} ::= \text{AS} \ ? \ \text{alias}
\]

referenced by:
- \text{dataSource}
- \text{selectPart}

labeled:

\[
\text{labeled} ::= \text{LABEL} \ [\text{stringConstant}] \ ?
\]

referenced by:
- \text{selectPart}

part:

\[
\text{part} ::= \text{expression} \ | \ \text{aggregateFunction} \ | \ \text{allColumnsSpec}
\]

referenced by:
- \text{aggregateFunction}
- \text{selectPart}

aggregateFunction:

\[
\text{aggregateFunction} ::= ( ( \text{sum} \ | \ \text{product} \ | \ \text{avg} \ | \ \text{stddev} ) \ \text{parenthesisOpen} \ distinct \ ? | ( \text{min} \ | \ \text{max} ) \ \text{parenthesisOpen} \ distinct )? \ \text{arithmeticExpression} \ | \ \text{count} \ \text{parenthesisOpen} \ distinct )? \ \text{withIN} \ \text{GROUP} \ \text{orderBy}
\]

referenced by:
- \text{part}

allColumnsSpec:

\[
\text{allColumnsSpec} ::= \text{allColumnsSpecId} \ | \ \text{allColumnsSpecColumnNamePrefix} \ | \ \text{allColumnsSpecColumnNamePostfix} \ | \ \text{allColumnsSpecLabelPrefix} \ | \ \text{allColumnsSpecLabelPostfix}
\]

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allColumnsSpecId:

alias DOT ASTERIX

\[
\text{allColumnsSpecId} ::= ( \text{alias DOT} \text{? ASTERIX})
\]

allColumnsSpecColumnNamePrefix:

PREFIX WITH stringConstant

\[
\text{allColumnsSpecColumnNamePrefix} ::= \text{PREFIX WITH stringConstant}
\]

allColumnsSpecColumnNamePostfix:

POSTFIX WITH stringConstant

\[
\text{allColumnsSpecColumnNamePostfix} ::= \text{POSTFIX WITH stringConstant}
\]

allColumnsSpecLabelPrefix:

LABEL PREFIX WITH stringConstant

\[
\text{allColumnsSpecLabelPrefix} ::= \text{LABEL PREFIX WITH stringConstant}
\]

allColumnsSpecLabelPostfix:

LABEL POSTFIX WITH stringConstant

\[
\text{allColumnsSpecLabelPostfix} ::= \text{LABEL POSTFIX WITH stringConstant}
\]
alterPersistentCacheStatement:

Besides an in-memory cache valid during the duration of a session, Invantive SQL offers an integrated cache storing data persistently using an on-premise or cloud relation database such as SQL Server or PostgreSQL. When configured, Invantive SQL first tries to find sufficiently fresh data in the cache. This reduces the number of data loads from slow data containers such as some cloud platforms. In general, the performance increase when the rows can be fully retrieved from a cache is between a factor 25 and 2,500.

Invantive SQL itself manages the table structure and table contents in the relation database used as a data cache. On initial use just provide an empty database. Invantive SQL installs a repository consisting of a few tables. The repository tables have names starting with 'dc_'.

For each table partition version, a so-called facts table is created. A facts table contains a full copy of the rows retrieved from the data container. Facts tables have names starting with 'dcd_', followed by a unique hash signaling the table partition version. When necessary, additional database objects are maintained such as indexes to improve performance. As with facts table names, all column names are also hashed based on an algorithm including the original column name. These facts tables are not intended for direct use using native SQL.

Each facts table has a unique state from the following state, with Ready state signaling the now current version:

- Initializing ('I'): the facts table will be created.
- View creation ('V'): logical views will be created.
- Prepared ('P'): the facts table has been created, but contains yet no rows.
- Seeding ('S'): the facts table is being seeded with the contents of the previously current version.
- Loading ('L'): loading new facts from data container using watershed or another algorithm.
- Ready ('R'): the facts table is available and the current one to be used.
- Obsoleted ('O'): the facts table still exists, but the data has passed its conservation period. Often a newer version is now current.
- Dropped ('D'): the facts table now longer exist, but the metadata is still present in the repository tables.

The persistent cache in the database can be used with native SQL when extended by Invantive Data Replicator. Invantive Data Replicator can create and maintain a database view (a so-called 'partition view') for the now current version of table partition. Similarly, it can create an 'overall view', showing the rows across all partitions of the now current versions per partition.

The overall views are typically used for consolidation purposes, bringing together data across multiple companies or persons.
entCacheLoadStatement alterPersistentCacheTableRefreshStatement alterPersistentCachePartitionRefreshStatement alterPersistentCacheDropStatement

```
alterPersistentCacheStatement[30]
  ::= alterPersistentCacheSetStatement[37]
     | alterPersistentCacheDownloadStatement[30]
     | alterPersistentCachePurgeStatement[30]
     | alterPersistentCacheRefreshStatement[30]
     | alterPersistentCacheLoadStatement[31]
     | alterPersistentCacheTableRefreshStatement[31]
     | alterPersistentCachePartitionRefreshStatement[31]
     | alterPersistentCacheDropStatement[31]
```

referred by:
  - `ddlStatement[28]`

```
alterPersistentCachePurgeStatement:

ALTER PERSISTENT CACHE PURGE UNKNOWN OBSOLETE READY DROPPABLE ALL TABLE PARTITION VERSIONS

```
alterPersistentCachePurgeStatement[30]
```

referred by:
  - `alterPersistentCacheStatement[29]`

```
alterPersistentCacheDownloadStatement:

ALTER PERSISTENT CACHE DOWNLOAD FEED LICENSE CONTRACT CODE stringConstant DATA_CONTAINER stringConstant PARTITION partitionSimpleIdentifier LIMIT numericConstant

```
alterPersistentCacheDownloadStatement[30]
   ( LIMIT [6] numericConstant[90] )?
```

referred by:
  - `alterPersistentCacheStatement[29]`

```
alterPersistentCacheRefreshStatement:

ALTER PERSISTENT CACHE FORCE REFRESH DATA_CONTAINER dataContainerAlias PARALLEL numericConstant

```
alterPersistentCacheRefreshStatement[30]
   ( PARALLEL [6] numericConstant[90] )?
```

referred by:
• `alterPersistentCacheStatement`<sup>29</sup>

**alterPersistentCacheLoadStatement:**

ALTER PERSISTENT CACHE LOAD

`alterPersistentCacheLoadStatement`<sup>31</sup>

::= ALTER PERSISTENT CACHE LOAD

referenced by:

• `alterPersistentCacheStatement`<sup>29</sup>

**alterPersistentCacheTableRefreshStatement:**

ALTER PERSISTENT CACHE TABLE tableSpec FORCE REFRESH PARTITION partitionIdentifier PARALLEL numericConstant

`alterPersistentCacheTableRefreshStatement`<sup>31</sup>

::= ALTER PERSISTENT CACHE TABLE tableSpec FORCE REFRESH ( PARTITION partitionIdentifier )? ( PARALLEL numericConstant )?

referenced by:

• `alterPersistentCacheStatement`<sup>29</sup>

**alterPersistentCachePartitionRefreshStatement:**

ALTER PERSISTENT CACHE PARTITION partitionIdentifier FORCE REFRESH PARALLEL numericConstant

`alterPersistentCachePartitionRefreshStatement`<sup>31</sup>

::= ALTER PERSISTENT CACHE PARTITION partitionIdentifier FORCE REFRESH ( PARALLEL numericConstant )?

referenced by:

• `alterPersistentCacheStatement`<sup>29</sup>

**alterPersistentCacheDropStatement:**

ALTER PERSISTENT CACHE DROP TABLE tableSpec PARTITION partitionIdentifier PARTITION partitionIdentifier DATA_CONTAINER stringConstant

`alterPersistentCacheDropStatement`<sup>31</sup>

::= ALTER PERSISTENT CACHE DROP ( TABLE tableSpec ) ( PARTITION partitionIdentifier )? | PARTITION partitionIdentifier | DATA_CONTAINER stringConstant

referenced by:

• `alterPersistentCacheStatement`<sup>29</sup>

**alterPersistentCacheSetStatement:**
ALTER PERSISTENT CACHE SET FRESH RETENTION FORWARDED INCOMING MESSAGES METADATA RECYCLEBIN DATA MODEL VERSION numericConstant TOKEN stringConstant LOGICAL OVERALL PARTITION VIEW NAME PREFIX POSTFIX stringConstant MAINTAIN booleanConstant LOAD MY MESSAGES booleanConstant AUTO UPGRADE ONCE alterPersistentCacheSetTableOptions

```
alterPersistentCacheSetTableOptions := ALTER \[ 6 \] PERSISTENT \[ 6 \] CACHE \[ 6 \] SET \[ 6 \] ( ( FRESH \[ 6 \] | RETENTION \[ 6 \] | FORWARDED \[ 6 \] | INCOMING \[ 6 \] | MESSAGES \[ 6 \] | METADATA \[ 6 \] | RECYCLEBIN \[ 6 \] | DATA \[ 6 \] | MODEL \[ 6 \] | VERSION \[ 6 \] ) numericConstant \[ 9d \] | TOKEN \[ 6 \] ) stringConstant \[ 8a \] | LOGICAL \[ 6 \] ( OVERALL \[ 6 \] | PARTITION \[ 6 \] ) VIEW \[ 6 \] ( NAME \[ 6 \] ( PREFIX \[ 6 \] | POSTFIX \[ 6 \] ) stringConstant \[ 8a \] | MAINTAIN \[ 6 \] booleanConstant \[ 9d \] | LOAD \[ 6 \] MY \[ 6 \] MESSAGES \[ 6 \] booleanConstant \[ 9d \] | AUTO \[ 6 \] UPGRADE \[ 6 \] ONCE \[ 6 \] | alterPersistentCacheSetTableOptions \[ 32 \] )
```

referenced by:
- `alterPersistentCacheStatement` [29]

### alterPersistentCacheSetTableOptions:

TABLE tableSpec LOGICAL OVERALL VIEW MAINTAIN booleanConstant NAME stringConstant PARTITION VIEW MAINTAIN booleanConstant NAME PREFIX POSTFIX stringConstant STATE OBSOLETE DROPPED PARTITION partitionIdentifier APPROACH COPY TRICKLE SAMPLE

```
alterPersistentCacheSetTableOptions := TABLE \[ 6 \] tableSpec \[ 13 \] ( LOGICAL \[ 6 \] VIEW \[ 6 \] ( MAINTAIN \[ 6 \] booleanConstant \[ 9d \] | NAME \[ 6 \] stringConstant \[ 8a \] ) | PARTITION \[ 6 \] VIEW \[ 6 \] ( MAINTAIN \[ 6 \] booleanConstant \[ 9d \] | NAME \[ 6 \] ( PREFIX \[ 6 \] | POSTFIX \[ 6 \] ) stringConstant \[ 8a \] ) ) | STATE \[ 6 \] ( OBSOLETE \[ 6 \] | DROPPED \[ 6 \] ) ) ( PARTITION \[ 6 \] partitionIdentifier \[ 30 \] )? APPROACH \[ 6 \] ( COPY \[ 6 \] | TRICKLE \[ 6 \] | SAMPLE \[ 6 \] )
```

referenced by:
- `alterPersistentCacheSetStatement` [31]

### createTableStatement:

CREATE orReplace TABLE tableSpec AS selectStatement

```
createTableStatement := CREATE \[ 6 \] orReplace \[ 33 \] TABLE \[ 6 \] tableSpec \[ 13 \] AS \[ 6 \] selectStatement \[ 7 \]
```

referenced by:
- `ddlStatement` [28]

### dropTableStatement:

DROP TABLE tableSpec

```
dropTableStatement := DROP \[ 6 \] TABLE \[ 6 \] tableSpec \[ 13 \]
```

referenced by:
orReplace:

OR REPLACE

orReplace ::= OR REPLACE

referenced by:
- createTableStatement

setStatement:

Replaces the value of a provider attribute by a new value.

SET setIdentifier expression

setStatement ::= SET setIdentifier expression

referenced by:
- sqlStatement

setIdentifier:

attributeIdentifier distributedAliasDirective

setIdentifier ::= attributeIdentifier distributedAliasDirective?

referenced by:
- setStatement

transactionStatement:

beginTransactionStatement rollbackTransactionStatement commitTransactionStatement

transactionStatement ::= beginTransactionStatement | rollbackTransactionStatement | commitTransactionStatement

referenced by:
- sqlStatement

executeFileStatement:

FILE_PATH

executeFileStatement ::= FILE_PATH

referenced by:
- sqlStatement
beginTransactionStatement:

A begin transaction statement initiates a transaction. Invantive SQL typically provides no transaction logic given the distributed nature and the limitations of the possible platforms. Some platforms enable collection of transaction data, which are to be handed over to the backing platform all together.

BEGIN TRANSACTION

```
beginTransactionStatement ::= BEGIN TRANSACTION? 
```

referenced by:

- `transactionStatement`

rollbackTransactionStatement:

Forgets all collected transaction data not yet handed over to the backing platform.

ROLLBACK TRANSACTION

```
rollbackTransactionStatement ::= ROLLBACK TRANSACTION? 
```

referenced by:

- `transactionStatement`

commitTransactionStatement:

Hand over all collected transaction to the backing platform for registration.

COMMIT TRANSACTION

```
commitTransactionStatement ::= COMMIT TRANSACTION? 
```

referenced by:

- `transactionStatement`

useStatement:

The use statement enables you to specify which partitions should be accessed by subsequent select, insert, update and delete statements. You can specify one or multiple partitions as a comma-separated list, possibly for a specific data container by appending an at-sign plus data container alias to the partition code. The value 'default' has a special meaning; it specifies to use the partition(s) originally selected when you logged on. The value 'all' also has a special meaning: it selects all partitions available.

For instance, to select partition '35' in the data container with alias 'eolnl' and partition '57345' in the data container with alias 'nmbrsnl', you can execute: 'use 35@eolnl, 57345@nmbrsnl'.

For complex scenarios, you can specify any valid Invantive SQL select statement which returns one or two columns. Each row from the query specifies one partition to select. The first column specifies the partition code, whereas the optional second column specifies a specific data container alias.
For instance, to select partition '35' in the data container with alias 'eolnl' and partition '57345' in the data container with alias 'nmbrsnl', you can execute: 'use select '35', 'eolnl' from dual@datadictionary union all select '57345', 'nmbrsnl' from dual@datadictionary'.

```
USE partitionIdentifiersList selectStatement
   ::= USE ( partitionIdentifiersList | selectStatement )
```

referenced by:
- sqlStatement

```
partitionIdentifiersList:
partitionIdentifierWithAlias COMMA partitionIdentifiersList
   ::= partitionIdentifierWithAlias ( COMMA partitionIdentifierWithAlias )*
```

referenced by:
- useStatement

```
partitionIdentifier:
parameterExpression numericConstant identifier ALL DEFAULT
partitionIdentifier
   ::= parameterExpression | numericConstant | identifier | ALL | DEFAULT
```

referenced by:
- alterPersistentCacheDropStatement
- alterPersistentCachePartitionRefreshStatement
- alterPersistentCacheSetTableOptions
- alterPersistentCacheTableRefreshStatement
- partitionIdentifierWithAlias

```
partitionIdentifierWithAlias:
partitionIdentifier distributedAliasDirective
partitionIdentifierWithAlias
   ::= partitionIdentifier distributedAliasDirective
```

referenced by:
- partitionIdentifiersList

```
partitionSimpleIdentifier:
numericConstant identifier
```

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partitionSimpleIdentifier ::= numericConstant | identifier

referred by:
  • alterPersistentCacheDownloadStatement

insertStatement:
bulk insert into tableSpec insertFieldList valuesExpression insertFieldList selectStatement identifiedByClause attachToClause

insertStatement ::= bulk? insert into tableSpec ( insertFieldList valuesExpression | insertFieldList? selectStatement? ) identifiedByClause? attachToClause?

referred by:
  • sqlStatement

valuesExpression:
values_insertValues

valuesExpression ::= values insertValues

referred by:
  • insertStatement

bulk:

BULK

bulk ::= BULK

referred by:
  • insertStatement

into:

INTO

into ::= INTO

referred by:
  • insertStatement

insert:

INSERT

insert ::= INSERT

referred by:
  • insertStatement
values_
VALUES
values_ ::= VALUES
referenced by:
  • valuesExpression

insertFieldList:
parenthesisOpen columnList parenthesisClose
insertFieldList ::= parenthesisOpen columnList parenthesisClose
referenced by:
  • insertStatement

insertValues:
parenthesisOpen insertValuesList parenthesisClose
insertValues ::= parenthesisOpen insertValuesList parenthesisClose
referenced by:
  • valuesExpression

insertValuesList:
arithmeticExpression COMMA
insertValuesList ::= arithmeticExpression ( COMMA arithmeticExpression )*
referenced by:
  • insertValues

identifiedByClause:
IDENTIFIED BY arithmeticExpression
identifiedByClause ::= IDENTIFIED BY arithmeticExpression
referenced by:
  • insertStatement

attachToClause:
ATTACH TO arithmeticExpression
attachToClause := ATTACH TO arithmeticExpression

referenced by:
  • insertStatement

updateStatement := UPDATE FROM tableSpec SET updateValuesList whereClause

referenced by:
  • sqlStatement

updateValuesList := updateValue COMMA updateValuesList

referenced by:
  • updateStatement

updateValue := column EQ arithmeticExpression

referenced by:
  • updateValuesList

deleteStatement := delete FROM tableSpec whereClause

referenced by:
  • sqlStatement

delete := DELETE

referenced by:
  • deleteStatement
expression:

booleanExpression arithmeticExpression

::= booleanExpression | arithmeticExpression

referenced by:

- caseElseExpression
- caseWhenThenExpression
- csvTableLiteral
- csvTablePassing
- jsonTableLiteral
- jsonTablePassing
- pSqlAssignmentStatement
- pSqlExecuteImmediateStatement
- part
- setStatement
- tableFunctionSpec
- xmTableLiteral
- xmTablePassing

booleanExpression:

not booleanExpression and or booleanExpression parenthesisOpen booleanExpression parenthesisClose predicateExpression true false

::= ( not | booleanExpression ) ( and | or ) ) booleanExpression | parenthesisOpen booleanExpression parenthesisClose | predicateExpression | true | false

referenced by:

- booleanExpression
- expression
- joinConditions
- pSqlElseIfExpression
- pSqlIfStatement
- pSqlWhileLoopStatement
- whereClause

caseExpression:

case caseWhenThenExpression caseElseExpression end
caseExpression ::= case caseWhenThenExpression+ caseElseExpression end

referenced by:
  - arithmeticExpression

caseWhenThenExpression:
when expression then arithmeticExpression
  ::= when expression then arithmeticExpression

referenced by:
  - caseExpression

caseElseExpression:
else expression
  ::= else expression

referenced by:
  - caseExpression

parenthesisOpen:
PARENTHESES_OPEN
  ::= PARENTHESES_OPEN

referenced by:
  - aggregateFunction
  - arithmeticExpression
  - booleanExpression
  - csvTableSpec
  - embeddedSelect
  - functionExpression
  - insertFieldList
  - insertValues
  - jsonTableSpec
  - now
  - predicateExpression
  - tableFunctionSpec
  - utc
  - xmlTableSpec

parenthesisClose:
PARENTHESES_CLOSE
parenthesisClose ::= PARENTHESIS_CLOSE

referenced by:
- aggregateFunction
- arithmeticExpression
- booleanExpression
- csvTableSpec
- embeddedSelect
- functionExpression
- insertFieldList
- insertValues
- jsonTableSpec
- now
- predicateExpression
- tableFunctionSpec
- utc
- xmlTableSpec

case:
CASE
case ::= CASE

referenced by:
- caseExpression

when:
WHEN
when ::= WHEN

referenced by:
- caseWhenThenExpression

then:
THEN
then ::= THEN

referenced by:
- caseWhenThenExpression

else:
ELSE
else ::= ELSE

referenced by:
- caseElseExpression
end:
END
   end ::= END

referenced by:
   • caseExpression

not:
NOT
   not ::= NOT

referenced by:
   • booleanExpression
   • isLikeComparingExpression
   • isNullComparingExpression
   • predicateExpression

is:
IS
   is ::= IS

referenced by:
   • isNullComparingExpression

are:
ARE
   are ::= ARE

referenced by:
   • isEqualComparingExpression

and:
AND
   and ::= AND

referenced by:
   • booleanExpression
   • predicateExpression

or:
OR
   or ::= OR
true:

TRUE

true \texttt{[43]} := \texttt{TRUE} \texttt{[43]}

false:

FALSE

false \texttt{[43]} := \texttt{FALSE} \texttt{[43]}

predicateExpression:

arithmeticExpression not in\_parenthesisOpen arithmeticExpression COMMA inSelectStatement parenthesisClose between arithmeticExpression and arithmeticExpression gt ge lt le eq neq arithmeticExpression isNullComparingExpression isLikeComparingExpression isEqualComparingExpression

predicateExpression \texttt{[43]} ::= arithmeticExpression \texttt{[46]} ( ( gt \texttt{[44]} | ge \texttt{[44]} | lt \texttt{[44]} | le \texttt{[44]} | eq \texttt{[44]} | neq \texttt{[45]} ) arithmeticExpression \texttt{[46]} | not? \texttt{[42]}? ( between \texttt{[42]} arithmeticExpression \texttt{[46]} and \texttt{[42]} arithmeticExpression \texttt{[46]} | in \texttt{[45]} parenthesisOpen \texttt{[46]} ( arithmeticExpression \texttt{[46]} ( COMMA \texttt{[6]} arithmeticExpression \texttt{[46]} )* | inSelectStatement \texttt{[7]} ) parenthesisClose \texttt{[46]} ) | isNullComparingExpression \texttt{[45]} | isLikeComparingExpression \texttt{[45]} | isEqualComparingExpression \texttt{[45]} )

parameterExpression:

COLON identifier

parameterExpression \texttt{[43]} ::= COLON \texttt{[6]} identifier \texttt{[82]}
gt:
Greater then is a binary operator which returns true when the left value is greater than the right value. When one of both values is null, the outcome is null. Otherwise it is false.

GT
\[ gt \ ::= \ GT \]

referenced by:
- `predicateExpression`

ge:
Greater or equal is a binary operator which returns true when the left value is greater than or equal to the right value. When one of both values is null, the outcome is null. Otherwise it is false.

GE
\[ ge \ ::= \ GE \]

referenced by:
- `predicateExpression`

lt:
Less then is a binary operator which returns true when the left value is less than the right value. When one of both values is null, the outcome is null. Otherwise it is false.

LT
\[ lt \ ::= \ LT \]

referenced by:
- `predicateExpression`

le:
Less or equal is a binary operator which returns true when the left value is less than or equal to the right value. When one of both values is null, the outcome is null. Otherwise it is false.

LE
\[ le \ ::= \ LE \]

referenced by:
- `predicateExpression`

eq:

EQ
\[ eq \ ::= \ EQ \]

referenced by:
- `predicateExpression`
neq:

NEQ

\texttt{neq}^{45} ::= \texttt{NEQ}^{45}

referenced by:

\begin{itemize}
  \item predicateExpression^{43}
\end{itemize}

like:

LIKE

\texttt{like}^{45} ::= \texttt{LIKE}^{45}

referenced by:

\begin{itemize}
  \item isLikeComparingExpression^{46}
\end{itemize}

between:

BETWEEN

\texttt{between}^{45} ::= \texttt{BETWEEN}^{45}

referenced by:

\begin{itemize}
  \item predicateExpression^{43}
\end{itemize}

in_:

IN

\texttt{in}^{45} ::= \texttt{IN}^{6}

referenced by:

\begin{itemize}
  \item predicateExpression^{43}
\end{itemize}

isNullComparingExpression:

is not NULL

\texttt{isNullComparingExpression}^{45} ::= \texttt{is}^{42} \texttt{not}^{42} \texttt{? NULL}^{91}

referenced by:

\begin{itemize}
  \item predicateExpression^{43}
\end{itemize}

isEqualComparingExpression:

are EQUAL

\texttt{isEqualComparingExpression}^{45} ::= \texttt{are}^{42} \texttt{? EQUAL}^{6}

referenced by:

\begin{itemize}
  \item predicateExpression^{43}
\end{itemize}
isLikeComparingExpression:

not like arithmeticExpression

\[
\text{isLikeComparingExpression} \ ::= \ \text{not} \ 46 \ [ \text{like} \ 45 \ \text{arithmeticExpression} \ 48 ]
\]

referenced by:

- \text{predicateExpression} 43

arithmeticExpression:

minus plus arithmeticExpression times divide plus minus concat arithmeticExpression parenthesisOpen arithmeticExpression selectStatement parenthesisClose functionExpression parameterExpression caseExpression fieldIdentifier constant

\[
\text{arithmeticExpression} \ ::= \ ( \ \text{minus} \ 62 \ | \ \text{plus} \ 63 \ | \ \text{arithmeticExpression} \ 46 ) \\
\quad \text{times} \ 67 \ | \ \text{divide} \ 67 \ | \ \text{plus} \ 63 \ | \ \text{minus} \ 62 \ | \ \text{concat} \ 63 \ ) \ \text{arithmeticExpression} 46 \\
\quad \text{parenthesisOpen} \ 46 \ ( \ \text{arithmeticExpression} \ 46 \ | \ \text{selectStatement} \ 71 ) \ \text{parenthesisClose} 46 \\
\quad \text{functionExpression} 47 \\
\quad \text{parameterExpression} 43 \\
\quad \text{caseExpression} 39 \\
\quad \text{fieldIdentifier} 81 \\
\quad \text{constant} 88
\]

referenced by:

- \text{aggregateFunction} 27
- \text{arithmeticExpression} 46
- \text{arithmeticExpressionList} 46
- \text{attachToClause} 37
- \text{caseWhenThenExpression} 47
- \text{expression} 30
- \text{identifiedByClause} 37
- \text{insertValuesList} 37
- \text{isLikeComparingExpression} 46
- \text{predicateExpression} 43
- \text{updateValue} 30

arithmeticExpressionList:

arithmeticExpression list

\[
\text{arithmeticExpressionList} \ 46 \\
\ ::= \ \text{arithmeticExpression} \ 46 \ ( \ \text{list} \ 59 \ \text{arithmeticExpressionList} \ 46 ) ^* \n\]

referenced by:

- \text{aggregateFunction} 27
- \text{functionExpression} 47
functionExpression:

abs acos anonymize ascii asin atan atan2 base64_decode base64_encode bit_length octet_length camel ceil chr coalesce concat_func cos covefify compress uncompress dateadd datepart date_floor date_round date_trunc day dayofweek dayofyear dense_rank double_metaphone double_metaphone_alt exp_func floor from_unixtime hour httpget httpget_text httppost initcap instr jsondecode jsonencode left length levenshtein ln log lower lpad ltrim md5 metaphone3 metaphone3_alt microsecond millisecond minute mod month newid number_to_speech normalize nvl power quarter quote_ident quote_literal quote_nullable raise_error random random_blob rand rank regexp_instr regexp_replace regexp_substr remainder replace reverse right round row_number rpad rtrim second sin soundex sqrt substr sys_context tan to_binary to_char to_date to_number to_guid to_hex translate translate_resources trim trunc unix_timestamp upper urlencode user unzip zip xmlcomment xmldecode xmlencode xmlelement xmlformat xmltransform year add_months zero_blob parenthesisOpen arithmeticExpressionList parenthesisClose random rand row_number now utc user

functionExpression [47]


referenced by:

- arithmeticExpression [46]
abs:
Returns the absolute value of a double-precision floating-point number.

Parameters:

- Input: A number that is greater than or equal to System.Double.MinValue, but less than or equal to System.Double.MaxValue.

Returns: A double-precision floating-point number. \( \text{ABS} \)

\[ \text{abs} \quad \text{: := ABS} \]

 acos:
Returns the angle of the provided cosine.

Parameters:

- Input: the cosine to get the angle of.

Returns: A number which represents the angle of the provided cosine. \( \text{ACOS} \)

\[ \text{acos} \quad \text{: := ACOS} \]

anonymize:
Anonymize a text or number. Anonymization is executed such that when the same original value is anonymized within the same session, the anonymized value will be identical. The anonymized value also uniquely matches the original value. With no access to the anonymization map however, the original value can however not be calculated from the anonymized value.

In mathematics, the anonymization function is a bijection: each element of the original set is paired with exactly one element of the anonymized set, and each element of the anonymized set is paired with exactly one element of the original set.

Parameters:

- Value: A text or number to be obfuscated.
- Maximum length (optional): Maximum length in digits for numbers or characters for text of anonymized value. Null means no restriction on maximum length.
- Mapping (optional): algorithm to use. The default algorithm is 'DEFAULT' which maps text values to a range of hexadecimal characters and numbers to a range of numbers. Alternative mappings are described below.

The following anonymization maps are available on installation:

- DEFAULT: the default algorithm.
- IVE-GL-JOURNAL-DESCRIPTION: general ledger journal descriptions: no preferred anonymizations, leave familiar and non-confidential descriptions in original state.
- IVE-GL-ACCOUNT-DESCRIPTION: general ledger account descriptions: no preferred anonymizations, leave familiar and non-confidential descriptions in original state.
- IVE-PSN-FIRST-NAME: person first names: prefer readable alternative first names, anonymize all.
- IVE-PSN-LAST-NAME: person last names: prefer readable alternative last names, anonymize all.
- IVE-ADS-CITY-NAME: address city names: prefer readable alternative city names, anonymize all.
- IVE-ADS-STREET-NAME: address street names: prefer readable alternative street names, anonymize all.

The data dictionary contains the anonymization maps used sofar in the session and their corresponding values:

```
select * from SystemAnonymizationMaps@DataDictionary
select * from SystemAnonymizationMapValues@DataDictionary
select * from SystemAnonymizationPredefinedMaps@DataDictionary
```

Returns: Anonymized value. ANONYMIZE

```
anonymize ::= ANONYMIZE
```

referenced by:
- functionExpression

ascii:
Get the position of a character on database character set.

Parameters:
- Input: character to get position from.

Returns: The position of the character on database character set. ASCII

```
ascii ::= ASCII
```

referenced by:
- functionExpression

asin:
Returns the angle of the provided sine.

Parameters:
- Input: the sine to get the angle of.

Returns: A number which represents the angle of the provided sine. ASIN

```
asin ::= ASIN
```

referenced by:
- functionExpression

atan:
Returns the angle of the provided tangent.
Parameters:
  - Input: the tangent to get the angle of.

Returns: A number which represents the angle of the provided tangent. ATAN

\[
\text{atan} \quad ::= \quad \text{ATAN}
\]

referenced by:
  - functionExpression

atan2:

Returns the angle of the provided tangent.

Parameters:
  - First number: the first number to get the angle of.
  - Second number: the second to get the angle of.

Returns: A number which represents the angle of the provided tangent. ATAN2

\[
\text{atan2} \quad ::= \quad \text{ATAN2}
\]

referenced by:
  - functionExpression

add_months:

Add an amount of months to a datetime.

Parameters:
  - Date: datetime to ass the months to.
  - Months: the amount of months to add.

Returns: A new datetime with the amount of months added. ADD_MONTHS

\[
\text{add\_months} \quad ::= \quad \text{ADD\_MONTHS}
\]

referenced by:
  - functionExpression

base64_decode:

Converts the base64_encoded value back to the binary value as defined on Wikipedia.

Parameters:
  - Input: value to convert back to the original.

Returns: The input decoded back to the binary value. BASE64_DECODE

\[
\text{base64\_decode} \quad ::= \quad \text{BASE64\_DECODE}
\]

referenced by:
  - functionExpression

base64_encode:
Converts a binary value to base64_encoded characters as defined on Wikipedia.

Parameters:
- Input: value to convert to base64 characters.

Returns: The input encoded to base64 characters. BASE64_ENCODE

```
base64_encode ::= BASE64_ENCODE
```

Referenced by:
- functionExpression

camel:

Converts provided string to Camel case.

Parameters:
- Input: the string that will be converted to Camel case.

Returns: A string converted to Camel case. CAMEL

```
camel ::= CAMEL
```

Referenced by:
- functionExpression

ceil:

Rounds the input to the largest following integer. Unless an amount of decimals is defined, in which case it rounds to the largest integer number with the amount of decimals or date with the amount of positions.

Parameters:
- Input: A number or datetime to ceil.
- Decimals [optional]: A number to specify how many decimals it may ceil to in case of a number. In case of a datetime, it reflects the number of time positions, ranging from -2 for years to 2 for minutes.

Returns: The ceiling of the input. CEIL

```
ceil ::= CEIL
```

Referenced by:
- functionExpression

chr:

Get a character from database character set.

Parameters:
- Input: a numeric value of a character.

Returns: A character from the database character set. CHR CHAR

```
chr ::= CHR | CHAR
```

Referenced by:
bit_length:
Get the number of bits needed to represent a value. For a blob, this is the number of bits for
the bytes of the blob. For all other data types, the value is first converted to a string and then
the number of bits of the UTF8 representation is determined.
Parameters:
  • Value: value to determine length in bits for.
Returns: number of bits needed to represent the value. BIT_LENGTH
  \texttt{bit\_length} ::= \texttt{BIT\_LENGTH}

octet_length:
Get the number of bytes needed to represent a value. For a blob, this is the number of bytes
of the blob. For all other data types, the value is first converted to a string and then the num-
ber of bytes of the UTF8 representation is determined.
Parameters:
  • Value: value to determine length in bytes for.
Returns: number of bytes needed to represent the value. OCTET_LENGTH
  \texttt{octet\_length} ::= \texttt{OCTET\_LENGTH}

repeat:
Get a concatenation of the text by a number of times.
Parameters:
  • Text: text to repeat.
  • Times: number of time to repeat the text.
Returns: the text repeated a number of times. REPEAT
  \texttt{repeat} ::= \texttt{REPEAT}

raise_error:
RAISE_ERROR
  \texttt{raise\_error} ::= \texttt{RAISE\_ERROR}
coalesce:
Performs a coalescing operation.
Parameters:
  - Left: an object.
  - Right: an object.
Returns: the left value if right is empty, otherwise the right value. COALESCE

\[
\text{coalesce} \ ::= \text{COALESCE}
\]

concat:
Concatenate the left and right values together as a text.

\[
\text{concat} \ ::= \text{CONCAT_OP}
\]

concat_func:
Concatenate a list of values together as a text.

\[
\text{concat_func} \ ::= \text{CONCAT}
\]

cos:
Returns the cosine of the provided angle.
Parameters:
  - Input: the angle to get the cosine of.
Returns: A number which represents the cosine of the provided angle. COS

\[
\text{cos} \ ::= \text{COS}
\]
COVFEFIFY

\texttt{covfefify} \[53\]
\[53\]
\texttt{::= COVFEFIFY} \[53\]

referenced by:
- \textit{functionExpression} \[47\]

compress:

\texttt{COMPRESS}

\texttt{compress} \[54\]
\[54\]
\texttt{::= COMPRESS} \[54\]

referenced by:
- \textit{functionExpression} \[47\]

uncompress:

\texttt{UNCOMPRESS}

\texttt{uncompress} \[54\]
\[54\]
\texttt{::= UNCOMPRESS} \[54\]

referenced by:
- \textit{functionExpression} \[47\]

dateadd:

Adds an amount of time to a date.

Parameters:
- \texttt{Interval}: the date interval to be added.
- \texttt{Number}: the number of intervals to add.
- \texttt{Date}: the date to which the interval should be added.

Returns: The original date with the number of intervals added. DATEADD

\texttt{dateadd} \[54\]
\[54\]
\texttt{::= DATEADD} \[54\]

referenced by:
- \textit{functionExpression} \[47\]

datepart:

Get the specified datepart from a datetime.

Parameters:
- \texttt{datepart}: a part of a date.
- \texttt{date}: a datetime to get the datepart from.

Returns: a part of a datetime. DATEPART

\texttt{datepart} \[54\]
\[54\]
\texttt{::= DATEPART} \[54\]

referenced by:
- \textit{functionExpression} \[47\]

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date_ceil:
DATE_CEIL
date_ceil  ::=  DATE_CEIL
referenced by:
  •  functionExpression

date_floor:
DATE_FLOOR
date_floor  ::=  DATE_FLOOR
referenced by:
  •  functionExpression

date_round:
DATE_ROUND
date_round  ::=  DATE_ROUND
referenced by:
  •  functionExpression

date_trunc:
DATE_TRUNC
date_trunc  ::=  DATE_TRUNC
referenced by:
  •  functionExpression

day:
Collect the day from a date.
Parameters:
  •  Input: A dateTime.
Returns: The day as an integer, DAY
day  ::=  DAY
referenced by:
  •  functionExpression

dayofweek:
Collect the day of a week from a date.

Parameters:
- Input: A date Time.

Returns: The day of a week as an integer. DAYOFWEEK

\[
\text{dayofweek} \ ::= \ \text{DAYOFWEEK}
\]

referenced by:
- functionExpression

\[
\text{dayofyear} 
\]

Collect the day of a year from a date.

Parameters:
- Input: A date Time.

Returns: The day of a year as an integer. DAYOFYEAR

\[
\text{dayofyear} \ ::= \ \text{DAYOFYEAR}
\]

referenced by:
- functionExpression

\[
\text{dense_rank} 
\]

DENSE_RANK

\[
\text{dense_rank} \ ::= \ \text{DENSE_RANK}
\]

referenced by:
- functionExpression

\[
\text{double_metaphone} 
\]

double_metaphone:

\[
\text{DOUBLE_METAPHONE} \ ::= \ \text{DOUBLE_METAPHONE}
\]

referenced by:
- functionExpression

\[
\text{double_metaphone_alt} 
\]

double_metaphone_alt:

\[
\text{DOUBLE_METAPHONE_ALT} \ ::= \ \text{DOUBLE_METAPHONE_ALT}
\]

referenced by:
- functionExpression

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divide:
Divide one number by the second number.
Parameters:
  • first: a number to divide.
  • second: a number to divide with.
Returns: the divided output. DIVIDE

\[
\text{divide} ::= \text{DIVIDE} \]

referred by:
  • arithmeticExpression

exp:
Returns the provided number raised to the specified power.
Parameters:
  • Input: the number to raise by the specified power.
Returns: A number which is the provided number raised to the specified power. EXP_OP

\[
\text{exp} ::= \text{EXP} \]

no references

exp_func:

\[
\text{EXP} \]

referred by:
  • functionExpression

floor:
Rounds the input to the smallest following integer. Unless an amount of decimals is defined, in which case it rounds to the smallest integer with the amount of decimals or date with the amount of positions.
Parameters:
  • Input: A number or datetime to floor.
  • Decimals [optional]: A number to specify how many decimals it may floor to in case of a number. In case of a datetime, it reflects the number of time positions, ranging from -2 for years to 2 for minutes.
Returns: The floor of the input. FLOOR

\[
\text{floor} ::= \text{FLOOR} \]

referred by:
  • functionExpression
from_unixtime:
Get the date/time from an integer representing a UNIX epoch time.

Parameters:
- Input: An integer.

Returns: The date/time which the UNIX epoch time represents. FROM_UNIXTIME

```
from_unixtime ::= FROM_UNIXTIME
```

hour:
Collect the hour from a date.

Parameters:
- Input: A dateTime.

Returns: The hour as an integer. HOUR

```
hour ::= HOUR
```

initcap:
Changes the first letter of each word in uppercase, all other letters in lowercase.

Parameters:
- Input: Text to convert.

Returns: The input with the first letter of each word in uppercase. INITCAP

```
initcap ::= INITCAP
```

instr:
Get a number which is a position of the first occurrence of substring in the string.

Parameters:
- String: String to be searched.
- Substring: Text to search for.
- StartPosition [optional]: Position of string to start searching.
- occurrence [optional]: Return the position of the occurrence.

Returns: The position of the substring inside the original string. INSTR

```
instr ::= INSTR
```
jsondecode:

JSONDECODE

  jsondecode ::= JSONDECODE

referenced by:
  · functionExpression

jsonencode:

JSONENCODE

  jsonencode ::= JSONENCODE

referenced by:
  · functionExpression

length:

Gets the number of characters in provided string.

Parameters:
  · Input: the string to get the length of.

Returns: A number which represents the number of characters in the provided string.

LENGTH

  length ::= LENGTH

referenced by:
  · functionExpression

levenshtein:

Determine the Levenshtein distance between two values as defined on Wikipedia.

LEVENSHTEIN

  levenshtein ::= LEVENSHTEIN

referenced by:
  · functionExpression

list:

COMMA

  list ::= COMMA

referenced by:
  · arithmeticExpressionList
In:
Get the natural logarithm of a number.

Parameters:
- Input: a number to get the natural logarithm from.

Returns: The natural logarithm of the input. LN
\[ \text{LN} \]

Referenced by:
- functionExpression

log:
Get the natural logarithm of a number in a specified base.

Parameters:
- Input: a number to get the natural logarithm from.
- Base [optional]: the base to get the natural logarithm from.

Returns: The natural logarithm of the input in the specified base. LOG
\[ \text{LOG} \]

Referenced by:
- functionExpression

lower:
Converts provided string to lowercase.

Parameters:
- Input: the string that will be converted to lowercase.

Returns: A string converted to lowercase. LOWER
\[ \text{LOWER} \]

Referenced by:
- functionExpression

lpad:
Pad a string to the left to make it a specified length.

Parameters:
- Input: string to be padded.
- Length: the length the string should be padded to.
- Characters [optional]: Characters to pad with.

Returns: A string padded to the left to a given length with the optional specified characters. LPAD
\[ \text{LPAD} \]

Referenced by:
- functionExpression
**ltrim:**
Trims characters from the left side of a string.
Parameters:
- Input: the string from to trim characters from the left side.
- (Optional) Chars to trim: the character to trim. Default is " ".
Returns: A string with chars trimmed from the left. LTRIM

```
ltrim ::= LTRIM
```

referenced by:
- `functionExpression`

**md5:**
Converts a value to a 128-bit hash value as defined on Wikipedia.
Parameters:
- Input: Text to convert with MD5.
Returns: The input converted with MD5. MD5

```
md5 ::= MD5
```

referenced by:
- `functionExpression`

**metaphone:**
Converts a value to the Metaphone code as defined on Wikipedia.
Parameters:
- Input: value to convert to metaphone.
- Length: maximum output length of the given input.
Returns: The input converted to metaphone, with a given output length. METAPHONE

```
metaphone ::= METAPHONE
```

referenced by:
- `functionExpression`

**metaphone3:**
METAPHONE3

```
metaphone3 ::= METAPHONE3
```

referenced by:
- `functionExpression`
metaphone3_alt:

```
METAPHONE3_ALT
metaphone3_alt ::=
METAPHONE3_ALT
```

referenced by:
- `functionExpression`

mod:

Get the remainder of a divide calculation.

Parameters:
- dividend: a number.
- divider: a number.

Returns: The remainder. MOD
```
mod ::= MOD
```

referenced by:
- `functionExpression`

minus:

Subtracts a value from another.

Parameters:
- Value: a number or datetime.
- Subtract: a number or datetime.

Returns: The value minus the subtraction. MINUS
```
minus ::= MINUS
```

referenced by:
- `arithmeticExpression`

minute:

Collect the minute from a date.

Parameters:
- Input: A dateTime.

Returns: The minute as an integer. MINUTE
```
minute ::= MINUTE
```

referenced by:
- `functionExpression`

month:

Collect the month from a date.
Parameters:
- Input: A dateTime.

Returns: The month as an integer, MONTH

\[ \text{month} ::= \text{MONTH} \]

newid:

Creates a new Guid id.

Returns: The new Guid id.

\[ \text{newid} ::= \text{NEWID} \]

nvl:

Coalesce all values together.

Returns: All values coalesced together.

\[ \text{nvl} ::= \text{NVL} \]

plus:

Adding a value to another.

Parameters:
- Value: a number or datetime.
- add: a number or datetime.

Returns: A new value with both values added to each other, PLUS

\[ \text{plus} ::= \text{PLUS} \]

power:

Gets a value of a number raised to another.

Parameters:
- Value: a number.
- exponent: a number.
Returns: The value of a number raised to another.  POWER

\[ \text{power} := \text{POWER} \]

referred by:
- functionExpression

random:
Generates a random number between 0 and 1.

Parameters:
- Seed: Produce a repeatable sequence of random numbers each time that seed value is provided.

Returns: A random number between 0 and 1.  RANDOM

\[ \text{random} := \text{RANDOM} \]

referred by:
- functionExpression

random_blob:
Generates a blob with pseudo-random values.

Parameters:
- Length: Produce a blob with this length in terms of bytes.

Returns: A blob with pseudo-random values.  RANDOM_BLOB

\[ \text{random_blob} := \text{RANDOM_BLOB} \]

referred by:
- functionExpression

rand:
RAND

\[ \text{rand} := \text{RAND} \]

referred by:
- functionExpression

rank:
RANK

\[ \text{rank} := \text{RANK} \]

referred by:
- functionExpression

regexp_substr:
Extracts a substring from the given value using regular expression.

Parameters:
- Input: The text to get the substring from.
- Pattern: Regular expression pattern.
- Start position [optional]: The start index from the input.
- Appearance [optional]: Indicating the appearance of the substr operation.
- Match_parameter [optional]: A text literal that lets you change the default matching behavior of the function.

Returns: The substring from the input. REGEXP_SUBSTR

\[
\text{regexp_substr}\ ::= \text{REGEXP_SUBSTR}
\]

referenced by:
- functionExpression

\text{regexp_instr}:

Determine the position of the regular expression in the given value. Returns 0 when the regular expression is not contained in the given value.

Parameters:
- Input: The text to get the regular expression position from.
- Pattern: Regular expression pattern.
- Start position [optional]: The start index from the input.
- Appearance [optional]: Indicating the appearance of the instr operation.
- ReturnOption [optional]: Select either the first character found or the first character after the occurrence of the pattern.
- Match_parameter [optional]: A text literal that lets you change the default matching behavior of the function.

Returns: The location of a regular expression pattern in the input. REGEXP_INSTR

\[
\text{regexp_instr}\ ::= \text{REGEXP_INSTR}
\]

referenced by:
- functionExpression

\text{regexp_replace}:

Replaces all occurrences matching the regular expression with the replacement value. The replacement value may contain references to matches in the regular expression by using the dollar-sign (\$) plus the reference number.

Parameters:
- Input: The text to get the substring from.
- Pattern: Regular expression pattern.
- Replacement [optional]: Text to replace with.
- Start position [optional]: The start index from the input.
- Appearance [optional]: Indicating the appearance of the replace operation.
- Match_parameter [optional]: A text literal that lets you change the default matching behavior of the function. The available options are 'c' for case-sensitive, 'i' for ignore case, 'n' for single-line, 'm' for multi-line and 'x' for ignore pattern white space.

Returns: The input with every occurrence of the regular expression pattern replaced with the replacement.

```
REGEXP_REPLACE
  regexp_replace[66]
  ::=  REGEXP_REPLACE[66]
```

referenced by:
- `functionExpression[47]`

**remainder:**

Get the remainder of a divide calculation.

The REMAINDER function uses the round function in its formula, whereas the MOD function uses the floor function in its formula.

Parameters:
- Number1: a number.
- Number2: a number.

Returns: The remainder. REMAINDER

```
remainder[66]
  ::=  REMAINDER[66]
```

referenced by:
- `functionExpression[47]`

**replace:**

Replaces a string with string in given string.

Parameters:
- Input: the string to replace a string in.
- Old text: the string to be replaced.
- New text: the string which 'Old text' will be replaced with.

Returns: A string with the replaced string. REPLACE

```
replace[66]  ::=  REPLACE[66]
```

referenced by:
- `functionExpression[47]`

**reverse:**

Flips the input around.

Parameters:
- Input: text to flip around.

Returns: The text with it's characters in reversed order. REVERSE
**reverse**  ::=  REVERSE

**round:**

Rounds the input to the closest following integer. Unless an amount of decimals is defined, in which case it rounds to the closest integer number with the amount of decimals or date with the amount of positions.

**Parameters:**
- Input: A number or datetime to round.
- Decimals [optional]: A number to specify how many decimals it may round to in case of a number. In case of a datetime, it reflects the number of time positions, ranging from -2 for years to 2 for minutes.

**Returns:** The rounded input.

**row_number:**

ROW_NUMBER

**rpad:**

Rightpad function pads the right-side of a string with a specific set of characters to the given length. When no set of characters given, it will pad with a whitespace.

**Parameters:**
- Input: Text to be padded.
- Length: The length to make the input to.
- Pad text [optional]: Text to add to the input if the length is larger then the input.

**Returns:** The padded text, or null if the string cannot be padded.

**rtrim:**

Trims characters from the right side of a string.

**Parameters:**
- Input: the string from which to trim characters from the right side.
- (Optional) Chars to trim: the character to trim. Default is " ".

Returns: A string with chars trimmed from the right. RTRIM

rtrim ::= RTRIM

referenced by:
- functionExpression

microsecond:
Collect the microsecond from a date.
Parameters:
- Input: A dateTime.

Returns: The microsecond as an integer. MICROSECOND

microsecond ::= MICROSECOND

referenced by:
- functionExpression

millisecond:
Collect the millisecond from a date.
Parameters:
- Input: A dateTime.

Returns: The millisecond as an integer. MILLISECOND

millisecond ::= MILLISECOND

referenced by:
- functionExpression

number_to_speech:
NUMBER_TO_SPEECH

number to speech ::= NUMBER_TO_SPEECH

referenced by:
- functionExpression

normalize:
Normalize a file path by replacing all invalid and non-ASCII characters for use in a file path by underscore. After that, the file path is made more readable by various operations such as removal of duplicate whitespace and underscore characters.
Parameters:
- Original file path: path of the file.
- Maximum file name length: length in characters into which the normalized file name must fit.
- Allow path separator: whether to allow the path separator '\' in the normalized file name. When not, occurrences are replaced.

Returns: a normalized file path. NORMALIZE

\[
\text{normalize} \quad ::= \quad \text{NORMALIZE}
\]

Referenced by:
- \text{functionExpression}

second:
Collect the second from a date.

Parameters:
- Input: A dateTime.

Returns: The second as an integer. SECOND

\[
\text{second} \quad ::= \quad \text{SECOND}
\]

Referenced by:
- \text{functionExpression}

soundex:
Converts a value to the Soundex code as defined on Wikipedia.

Parameters:
- Input: Text to that retrieve the soundex value from.

Returns: A text started with a number and followed by 3 digits. SOUNDEX

\[
\text{soundex} \quad ::= \quad \text{SOUNDEX}
\]

Referenced by:
- \text{functionExpression}

sin:
Returns the sine of the provided angle.

Parameters:
- Input: the angle to get the sine of.

Returns: A number which represents the sine of the provided angle. SIN

\[
\text{sin} \quad ::= \quad \text{SIN}
\]

Referenced by:
- \text{functionExpression}

sqrt:
Returns the square root of the provided number.
Parameters:
- Input: the number to get the square root of.

Returns: A number which represents the square root of the provided number. SQRT

\[
\text{sqrt} := \text{SQRT}
\]

referenced by:
- functionExpression

substr:

Gets a substring from the input.

Parameters:
- Input: text to gather the substring from.
- Start: start position.
- Length: maximum length of the substring.

Returns: The substring from the original input. SUBSTR

\[
\text{substr} := \text{SUBSTR}
\]

referenced by:
- functionExpression

sys_context:

Text value of a parameter associated with a context.

Parameters:
- context: a namespace.
- parameter: name of the parameter.

Solely the namespace USERENV is available with the following parameter names:
- APPLICATION_VERSION: version of the client application.
- APPLICATION_FULL: name and version of the client application.
- APPLICATION_BUILD_EXPIRATION_DATE: build expiration date of the client application.
- AUTHENTICATION_METHOD: current authentication method.
- CLIENT_IP_ADDRESS_INTERNAL: internal IP address of the client device.
- CLIENT_IP_ADDRESS_EXTERNAL: external IP address of the client device.
- CLIENT_LOGICAL_CORE_COUNT: number of logical processor cores in the client device.
- CLIENT_MACHINE_NAME: machine name of the client device.
- CLIENT_SYSTEM_64_BIT: whether the OS is 64-bit on the client device.
- CLIENT_SYSTEM_NAME: full OS name running on the client device.
- CLIENT_SYSTEM_DIRECTORY: system directory of the client device.
- CLIENT_SYSTEM_PAGE_SIZE: system page size of the client device.
- CLIENT_VIRTUAL_MACHINE: whether the client device is a virtual machine.
- CLR_VERSION_BUILD: build version of the Common Language Runtime.
- CLR_VERSION_MAJOR: major version of the Common Language Runtime.
- CLR_VERSION_MAJOR_REVISION: major revision of the Common Language Runtime.
- CLR_VERSION_MINOR: minor version of the Common Language Runtime.
- CLR_VERSION_MIN_REVISION: minor revision of the Common Language Runtime.
- COMPANY_ID: ID of the company of current user.
- COMPANY_NAME: name of the company of current user.
- COMPANY_PHONE: phone of the company of current user.
- COMPANY_WEB_SITE: web site of the company of current user.
- DATA_CONTAINER_ALIAS: alias of active data container.
- DATA_CONTAINER_ID: ID of active data container.
- DATABASE_DESCRIPTION: description of database.
- DATABASE_FULL_NAME: full name of database.
- DATABASE_VERSION: version of database.
- LANG: ISO abbreviation for the language name of the user. Alternative: USER_LANGUAGE_CODE.
- MODULE: name of the client application. Alternative: APPLICATION_NAME.
- PROCESS_64_BIT: whether the OS process on the client device runs as 64-bit.
- PROCESS_COMMAND_LINE: command line used to start the OS process.
- PROCESS_CURRENT_DIRECTORY: current directory of the OS process.
- PROCESS_STACK_TRACE: current stack trace of the OS process.
- PROCESS_WORKING_SET: working set of the OS process.
- PROVIDER_DESCRIPTION: description of active data container.
- PROVIDERDOCUMENTATION_URL: documentation (URL) of active data container.
- PROVIDERDOWNLOADIMPLEMENTATION_URL: download driver (URL) of active data container.
- PROVIDER_NAME: name of active data container.
- PROVIDER_SHORT_NAME: short name of active data container.
- PROVIDER_TECHNICALDOCUMENTATION_URL: technical documentation (URL) of active data container.
- SESSION_USER: log on code of the current user. Alternative: CURRENT_USER.
- SESSIONID: session ID of current session.
- USER_DOMAIN_NAME: Windows domain name of current user.
- USER_EMAIL_ADDRESS: email address of current user.
- USER_FIRST_NAME: first name of current user.
- USER_FULL_NAME: full name of current user.
- USER_GENDER: gender of current user.
- USER_HOME_DIRECTORY: home directory of current user on client device.
- USER_INTERACTIVE: whether the current user works interactive.
- USER_PICTURES_DIRECTORY: pictures directory of current user on client device.
- USER_FAVORITES_DIRECTORY: favorites directory of current user on client device.
- USER_DESKTOP_DIRECTORY: desktop directory of current user on client device.
- USER_DOCUMENTS_DIRECTORY: documents directory of current user on client device.
- USER_PROFILE_DIRECTORY: profile directory of current user on client device.
- USER_LAST_LOG_ON: time of last log on of current user.
- USER_LAST_NAME: last name of current user.
- USER_LINKED_IN: LinkedIn name of current user.
- USER_MIDDLE_NAME: middle name of current user.
- USER_MOBILE_NUMBER: mobile number of current user.
- USER_NATIONALITY: nationality of current user.
- USER_PHONE_NUMBER: phone number of current user.
- USER_PICTURE_URL: picture (URL) of current user.
- USER_SKYPE: Skype name of current user.
- USER_TITLE: title of current user.
- USER_TWITTER: Twitter name of current user.
- USER_WEB_SITE: personal website of current user.

Returns: Value of the parameter in the context namespace. SYS_CONTEXT
\[
\text{sys\_context} \ ::= \text{SYS\_CONTEXT}
\]

referenced by:
- \text{functionExpression}

\text{tan:}

Returns the tangent of the provided angle.

Parameters:
- Input: the angle to get the tangent of.

Returns: A number which represents the tangent of the provided angle. TAN
\[
\text{tan} \ ::= \text{TAN}
\]

referenced by:
- \text{functionExpression}

\text{times:}

Multiplies one number by the second number.

Parameters:
- First: a number to multiply.
- Second: a number to multiply with.

Returns: The first number multiplied by the second number. ASTERIX
\[
\text{times} \ ::= \text{ASTERIX}
\]

referenced by:
- \text{arithmeticExpression}

\text{translate:}

Translate replaces all occurrences of each character in from_string to its corresponding character in to_string.

Parameters:
- input: The string to replace a sequence of characters with another set of characters.
- from_string: The string that will be searched for in the input.
- to_string: All characters in the from_string will be replaced with the corresponding character in the to_string.
Returns: the input with all occurrences of each character in from_string replaced by its corresponding character in to_string. TRANSLATE

\[
\text{translate} \ ::= \text{TRANSLATE}
\]

referenced by:

- functionExpression

translate_resources:
Replace all Invantive-style resources (‘{res:...}’) by their translation in the current language.
Parameters:
- txt: The string to replace resources in.

Returns: the input with all resources replaced by their translation.

TRANSLATE_RESOURCES

\[
\text{translate\_resources} \ ::= \text{TRANSLATE\_RESOURCES}
\]

referenced by:

- functionExpression

trim:
Trims whitespaces from both sides of the provided string.
Parameters:
- Input: the string from which to trim characters.

Returns: A string trimmed from whitespaces from both sides. TRIM

\[
\text{trim} \ ::= \text{TRIM}
\]

referenced by:

- functionExpression

trunc:
Calculates the integral part of a number. Unless an amount of decimals is defined, in which case it calculates to the integer with the amount of decimals or date with the amount of positions.
Parameters:
- Input: A number or datetime to truncate.
- Decimals [optional]: A number to specify how many decimals it may truncate to in case of a number. In case of a datetime, it reflects the number of time positions, ranging from -2 for years to 2 for minutes.

Returns: The truncated input. TRUNC

\[
\text{trunc} \ ::= \text{TRUNC}
\]

referenced by:

- functionExpression
to_hex:
TO_HEX
\texttt{to\_hex} \ :\ = \ \texttt{TO\_HEX}

referenced by:
\begin{itemize}
  \item \texttt{functionExpression}
\end{itemize}

unistr:
Converts a text with unicodes to regular characters.

Parameters:
\begin{itemize}
  \item Input: text with unicodes.
\end{itemize}

Returns: The input converted to all regular characters. UNISTR
\texttt{unistr} \ :\ = \ \texttt{UNISTR}

referenced by:
\begin{itemize}
  \item \texttt{functionExpression}
\end{itemize}

upper:
Converts provided string to uppercase.

Parameters:
\begin{itemize}
  \item Input: the string that will be converted to uppercase.
\end{itemize}

Returns: A string converted to uppercase. UPPER
\texttt{upper} \ :\ = \ \texttt{UPPER}

referenced by:
\begin{itemize}
  \item \texttt{functionExpression}
\end{itemize}

urlencode:
Decodes a url.

Parameters:
\begin{itemize}
  \item Url: url to decode.
\end{itemize}

Returns: The decoded url. URLDECODE
\texttt{urlencode} \ :\ = \ \texttt{URLDECODE}

referenced by:
\begin{itemize}
  \item \texttt{functionExpression}
\end{itemize}

urllencode:
Encodes a url.

Parameters:
• Url: url to encode.

Returns: The encoded url. `URLENCODE`

```
urllencode ::= URLENCODE
```

referenced by:

• `functionExpression`

`urllencode` reference:

`functionExpression`

`urllencode` reference:

unix_timestamp:

Get the UNIX epoch time of a date/time.

Parameters:

• Input: A dateTime. Current date/time is used when no value is specified.

Returns: The UNIX epoch time. `UNIX_TIMESTAMP`

```
unix_timestamp ::= UNIX_TIMESTAMP
```

referenced by:

• `functionExpression`

`unix_timestamp` reference:

`functionExpression`

`unix_timestamp` reference:

unzip:

`UNZIP`

```
unzip ::= UNZIP
```

referenced by:

• `functionExpression`

`unzip` reference:

`functionExpression`

`unzip` reference:

zip:

`ZIP`

```
zip ::= ZIP
```

referenced by:

• `functionExpression`

`zip` reference:

`functionExpression`

`zip` reference:

xmlcomment:

Format a text as an XML comment.

Parameters:

• Input: the input which will be formatted as XML comment.

Returns: A text with the input as XML comment. `XMLCOMMENT`

```
xmlcomment ::= XMLCOMMENT
```

referenced by:

• `functionExpression`

`xmlcomment` reference:

`functionExpression`

`xmlcomment` reference:
xmldecode:
Returns the XML decoded input.
Parameters:
- Input: the input which will be decoded into XML.
Returns: An object which is the XML decoded input. XMLDECODE

```
xmldencode[76] ::= XMLDECODE[76]
```

referenced by:
- `functionExpression[47]`

xmlencode:
Returns the XML encoded input.
Parameters:
- Input: the input which will be encoded into XML.
Returns: An object which is the XML encoded input. XMLENCODE

```
xmlencode[76] ::= XMLENCODE[76]
```

referenced by:
- `functionExpression[47]`

xmlelement:

```
XMLELEMENT[76]
xmlelement[76] ::= XMLELEMENT[76]
```

referenced by:
- `functionExpression[47]`

xmltransform:
Applies an XSL style sheet to the XML instance.
Parameters:
- XML: XML type instance to be transformed with the XSL style sheet.
- Style sheet: The XSL style sheet to apply.
Returns: The XML instance with the style sheet applied to it. XMLTRANSFORM

```
xmltransform[76] ::= XMLTRANSFORM[76]
```

referenced by:
- `functionExpression[47]`

xmlformat:
Pretty-print xml text.

Parameters:
- Xml: xml to pretty-print.

Returns: The pretty-printed XML text. XMLFORMAT

```
xmlformat ::= XMLFORMAT
```

referenced by:
- functionExpression

`httpget`:

Collects all data from the URL as binary data.

The URL must be publicly accessible. Use the NativePlatformScalarRequest view on cloud applications to directly access their web APIs.

Parameters:
- URL: the URL to collect the data from.

Returns: The collected data as an byte array. HTTPGET

```
httpget ::= HTTPGET
```

referenced by:
- functionExpression

`httpget_text`:

Collects all data from the URL as text.

The URL must be publicly accessible. Use the NativePlatformScalarRequest view on cloud applications to directly access their web APIs.

Parameters:
- URL: the URL to collect the data from.
- Encoding: the encoding from the data to receive, which is by default UTF8.

Returns: The collected data as text. HTTPGET_TEXT

```
httpget_text ::= HTTPGET_TEXT
```

referenced by:
- functionExpression

`httppost`:

HTTPPOST

```
httppost ::= HTTPPOST
```

referenced by:
- functionExpression
quarter:
Collect the quarter from a date.
Parameters:
  - Input: A dateTime.
Returns: The quarter as an integer. QUARTER

```sql
QUARTER
```

referenced by:
  - functionExpression

quote_ident:
QUOTE_IDENT

```sql
QUOTE_IDENT
```

referenced by:
  - functionExpression

quote_literal:
QUOTE_LITERAL

```sql
QUOTE_LITERAL
```

referenced by:
  - functionExpression

quote_nullable:
QUOTE_NULLABLE

```sql
QUOTE_NULLABLE
```

referenced by:
  - functionExpression

user:
Gets the user log on code.
Returns: The user log on code.

```sql
USER
```

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year:
Collect the year from a date.
Parameters:
  • Input: A date Time.
Returns: The year as an integer. YEAR

    year ::= YEAR

referred by:
  • functionExpression

to_binary:
TO_BINARY

    to_binary ::= TO_BINARY

referred by:
  • functionExpression

to_char:
Converts a value into text.
Parameters:
  • Input: value to convert.
Returns: The input converted to text. TO_CHAR

    to_char ::= TO_CHAR

referred by:
  • functionExpression

to_date:
Converts a value into a datetime.
Parameters:
  • Input: value to convert.
Returns: The input converted to a datetime. TO_DATE

    to_date ::= TO_DATE

referred by:
  • functionExpression

to_guid:
Converts a value into a guid.
Parameters:
  • Input: value to convert.
Returns: The input converted to a guid.
Converts a value into a number.

Parameters:
  - Input: value to convert.

Returns: The input converted to a number. TO_GUID

```
to_guid() ::= TO_GUID
```

referenced by:
  - `functionExpression`

**to_number:**

```
to_number() ::= TO_NUMBER
```

referenced by:
  - `functionExpression`

**zero_blob:**

Generates a blob with 0-byte values.

Parameters:
  - Length: Produce a blob with this length in terms of bytes.

Returns: A blob with 0-byte values. ZERO_BLOB

```
zero_blob() ::= ZERO_BLOB
```

referenced by:
  - `functionExpression`

**now:**

The time of the system clock in local time at the device where Invantive SQL runs.

Returns: current date/time.

```
now() ::= (NOW | GETDATE | SYSDATETIME) parenthesisOpen parenthesisClose SYSDATE
```

referenced by:
  - `functionExpression`

**utc:**

```
utc() ::= (UTC_DATE parenthesisOpen parenthesisClose NOWUTC parenthesisOpen parenthesisClose SYSDATEUTC)
```

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utc \[\text{UTC DATE}\] ::= UTC_DATE ( parenthesisOpen parenthesisClose )?
| ( GETUTCDATE | NOWUTC ) parenthesisOpen parenthesisClose
| SYSDATEUTC

referenced by:
- functionExpression

fullTableIdentifier:
catalogIdentifier DOT schemaIdentifier DOT tableIdentifier

fullTableIdentifier ::= ( catalogIdentifier DOT ( schemaIdentifier? DOT )? tableIdentifier )?

referenced by:
- tableOrFunctionSpec
- tableSpec

catalogIdentifier:

identifier
catalogIdentifier ::= identifier

referenced by:
- fullTableIdentifier

schemaIdentifier:

identifier

schemaIdentifier ::= identifier

referenced by:
- fullTableIdentifier

tableIdentifier:

identifier
tableIdentifier ::= identifier

referenced by:
- fullTableIdentifier

fieldIdentifier:

alias DOT identifier

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fieldIdentifier \(\text{fieldIdentifier}^{81}\)  
\[::= (\text{alias}^{83} \text{DOT}^{86} )? \text{identifier}^{82}\]  

referenced by:  
- arithmeticExpression\(^{46}\)

attributeIdentifier:  
attributeWithMinus keywordsAsIdentifierOrAlias  
\(\text{attributeIdentifier}^{82}\)  
\[::= \text{identifierWithMinus}^{82}\]
\[| \text{keywordsAsIdentifierOrAlias}^{83}\]  

referenced by:  
- setIdentifier\(^{33}\)

identifierWithMinus:  
identifier MINUS identifier INT_OR_DECIMAL_C ESCAPED_IDENTIFIER  
\(\text{identifierWithMinus}^{82}\)  
\[::= \text{ESCAPED_IDENTIFIER}^{84}\]
\[| \text{identifier}^{82}\] (MINUS \(^{82}\) (identifier \(^{82}\) | INT_OR_DECIMAL_C \(^{83}\)) \(^{84}\)) \(^{85}\)*  

referenced by:  
- attributeIdentifier\(^{82}\)

identifier:  
ESCAPED_IDENTIFIER IDENTIFIER keywordsAsIdentifierOrAlias  
\(\text{identifier}^{82}\)  
\[::= \text{ESCAPED_IDENTIFIER}^{86}\]
\[| \text{IDENTIFIER}^{82}\]
\[| \text{keywordsAsIdentifierOrAlias}^{83}\]  

referenced by:  
- catalogIdentifier\(^{87}\)
- column\(^{21}\)
- csvTableColumnSpec\(^{16}\)
- dataContainerAlias\(^{75}\)
- fieldIdentifier\(^{87}\)
- identifierWithMinus\(^{82}\)
- joinSet\(^{17}\)
- jsonTableColumnSpec\(^{17}\)
- noJoinSet\(^{11}\)
- parameterExpression\(^{43}\)
- partitionIdentifier\(^{35}\)
- partitionSimpleIdentifier\(^{35}\)
- schemaIdentifier\(^{67}\)
- tableIdentifier\(^{87}\)
alias:

ESCAPED_IDENTIFIER IDENTIFIER keywordsAsIdentifierOrAlias

alias ::= ESCAPED_IDENTIFIER | IDENTIFIER | keywordsAsIdentifierOrAlias

referenced by:

- aliased
- aliased
- aliased

keywordsAsIdentifierOrAlias:

ABS ACOS ADD_MONTHS ANONYMIZE APPROACH ASC ASCII ASIN ADD_MONTHS ATAN ATAN2 AT笪 ATIV ATTACH AUTO AVERAGE BEGIN BIT BIT_LENGTH BY CACHE CASE CAST CHAR CHR COALESCE COMMIT COMPRESSION CODE COLUMN COLUMNS CONTRACT COPY COS COUNT COVFEFIFY CROSS CSVTABLE DATA DATE ADD DATEPART DATETIME DATETIMEOFFSET DATE_CEIL DATE_FLOOR DATE_ROUND DATE_TRUNC DEC DELIMITER DENSE_RANK DESC DOWNLOAD DOUBLE DROPPABLE DROPPED ELSE END EXP FEED FLOOR FORWARDED FRESH FROM_UNIXTIME FULL GETDATE GETUTCDATE GROUP HTTPGET HTTPGET_TEXT HTTPPOST IDENTIFIED IMAGE INITCAP INCOMING INTEGER INTERSECT INTERVAL JOIN_SET BASE64 DECODE BASE64_ENCODE JSONDECODE JSONENCODE LABEL LEFT LENGTH LEVENSHTEIN LICENSE LIMIT LINES LISTAGG LOAD LOGICAL LONGTEXT LOWER LOW_COST LPAD LTRIM MAINTAIN MAX MD5 MESSAGES METADATA MEDIUMTEXT MIN_MINUS _C.MOD MODEL MONEY MY_NAME NEWID NO_JOIN_SET NORMALIZE NOWUTC NUMBER NUMBER_TO_SPEECH NVL OBSOLETE OCTET_LENGTH ODS ONCE OUTER OVERALL PARALLEL PASSING PARTITION PATH PERSISTENT POSITION POSTFIX POWER PREFIX PRODUCT PURGE QUOTE_IDENT QUOTE_LITERAL QUOTE_NONNULL RAISE_ERROR RAND RANDOM RANDOM_BLOB READY RECYCLEBIN REFRESH REGEXP_INSTR REGEXP_REPLACE REGEXP_SUBSTR REMAINDER REPEAT RESULT_SET_NAME RETENTION REVERSE RIGHT ROLLBACK ROUND ROW ROW_NUMBER RPAD RTRIM SAMPLE SERIAL SIN SKIP_SOUND EX SQRT STATE STDDDEV SUM SYSDATETIME SYSDATEUTC SYS_CONTEXT TABLES TAN TEXT THEN TIME_TIMESTAMP TINYTEXT TO_TOKEN TOP TO_BINARY TO_CHAR TO_DATE TO_GUID TO_HEX_TO_NUMBER TRANSACTION TRANSLATE_RESOURCES TRICKLE TRIM TRUNC UNCOMPRESS UNION UNIQUEIDENTIFIER UNISTR UNIX_TIMESTAMP UNKNOWN UNZIP UPDATE UPGRADE UPPER URLDECODE URL ENCODE USE USER UTC_DATE.VERSION VERSIONS WHEN XMLCOMMENT XMLDECODE XML_ELEMENT_XMLENCODE XML_FORMAT XMLTABLE XML_TRANSFORM XML_TYPE YEAR ZERO_BLOB ZIP LOG LN MICROSECOND MILLISECOND SECOND MINUTE HOUR INSTR DAY DAYOFWEEK DAYOFYEAR MONTH QUARTER YEAR CONCAT WITH EQUAL SUBSTR
keywordsAsIdentifierOrAlias ::= ABS | ACOS | ADD_MONTHS | ANONYMIZE | APPROACH | ASC | ASCII | ASIN | ADD_MONTHS | ATAN | ATAN2 | ATTACH | AUTO | AVG | BEGIN | BIT | BIT_LENGTH | BY | CACHE | CAMEL | CASE | CEIL | CHAR | CHR | COALESCE | COMMIT | COMPRESS | CODE | COLUMN | COLUMNS | CONTRACT | COPY | COS | COUNT | COVFCEFIFY | CROSS | CSVTABLE | DATA | DATE | DATEADD | DATEPART | DATETIME | DATETIMEOFFSET | DATE_CEIL | DATE_FLOOR | DATE_ROUND | DATE_TRUNC | DEC | DELIMITER | DENSE_RANK | DESC
DOWNLOAD
DOUBLE
DROPPABLE
DROPPED
ELSE
END
EXP
FEED
FLOOR
FORCE
FORWARDED
FRESH
FROM_UNIXTIME
FULL
GETDATE
GETUTCDATE
GROUP
HTTPGET
HTTPGET_TEXT
HTTPPOST
IDENTIFIED
IMAGE
INITCAP
INCOMING
INTEGER
INTERSECT
INTERVAL
JOIN_SET
BASE64_DECODE
BASE64_ENCODE
JSONDECODE
JSONENCODE
LABEL
LEFT
LENGTH
LEVENSHTEIN
LICENSE
LIMIT
LINES
LISTAGG
LOAD
LOGICAL
LONGTEXT
LOWER
LOW_COST
LPAD
LTRIM
MAINTAIN
MAX
MD5
MESSAGES
METADATA
ROLLBACK
ROUND
ROW
ROW_NUMBER
RPAD
RTRIM
SAMPLE
SERIAL
SIN
SKIP
SOUNDEX
SQRT
STATE
STDDEV
SUM
SYSDATETIME
SYSDATEUTC
SYS_CONTEXT
TABLES
TAN
TEXT
THEN
TIME
TIMESTAMP
TINYTEXT
TO
TOKEN
TOP
TO_BINARY
TO_CHAR
TO_DATE
TO_GUID
TO_HEX
TO_NUMBER
TRANSACTION
TRANSLATE
TRANSLATE_RESOURCES
TRICKLE
TRIM
TRUNC
UNCOMPRESS
UNION
UNIQUEIDENTIFIER
UNISTR
UNIX_TIMESTAMP
UNKNOWN
UNZIP
UPDATE
UPGRADE
UPPER
URLDECODE
URLENCODE
referenced by:
  • alias
  • attributeIdentifier
  • identifier

constant:

A constant value with associated data type. The null value is typically associated with the null
data type.

stringConstant numericConstant booleanConstant intervalConstant null
constant ::= stringConstant | numericConstant | booleanConstant | intervalConstant | null

referenced by:
- arithmeticExpression
- pSqlItemDeclaration

stringConstant:
A constant text value with varchar2 data type.

STRING_C stringConstant ::= STRING_C

referenced by:
- allColumnsSpecColumnNamePostfix
- allColumnsSpecColumnNamePrefix
- allColumnsSpecLabelPostfix
- allColumnsSpecLabelPrefix
- alterPersistentCacheDownloadStatement
- alterPersistentCacheDropStatement
- alterPersistentCacheSetStatement
- alterPersistentCacheSetTableOptions
- constant
- csvTableOptions
- intervalConstant
- jsonTableColumnSpec
- jsonTableSpec
- labeled
- resultSetName
- xmlTableColumnSpec
- xmlTableSpec

intervalConstant:
A constant interval value, reflecting the time span between two dates. The string constant consists of an integer number and unit of time, taken from the following list:
- Millisecond,
- second,
- minute,
- hour,
- day,
- week, and
- year.

The units may be postfixed with an 's' without changing meaning, like 'years'.

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Valid interval values are for example: "5 seconds", "20 hours" and "1 year". There is no support for combined intervals such as "30 minutes and 30 seconds".

```sql
INTERVAL stringConstant
   intervalConstant ::= INTERVAL stringConstant
```

Referenced by:
- `constant`
- `httpDiskCache`
- `httpMemoryCache`
- `ods`

**numericConstant:**
A constant numeric value with numeric data type.

```sql
NUMERIC_CONSTANT ::= INT_OR_DECIMAL | E_NOTATION
```

Referenced by:
- `alterPersistentCacheDownloadStatement`
- `alterPersistentCachePartitionRefreshStatement`
- `alterPersistentCacheRefreshStatement`
- `alterPersistentCacheSetStatement`
- `alterPersistentCacheTableRefreshStatement`
- `constant`
- `csvTableColumnSpec`
- `csvTableOptions`
- `jointSet`
- `limitClause`
- `pSqlForNumberLoopStatement`
- `partitionIdentifier`
- `partitionSimpleIdentifier`
- `topClause`

**booleanConstant:**
true false

```sql
BOOLEAN_CONSTANT ::= true | false
```

Referenced by:
- `alterPersistentCacheSetStatement`
- `alterPersistentCacheSetTableOptions`
- `constant`
- `httpDiskCache`
null:
The "unknown" value null.

NULL

null ::= NULL

referenced by:
- constant
- jsonTableSpec
- xmlTableSpec

pSqlBlock:

A PSQL block is a structure to define procedural logic. It can contain both procedural logic as well as SQL statements like "select".

pSqlDeclareSection pSqlBody

pSqlBlock ::= pSqlDeclareSection? pSqlBody

referenced by:
- pSqlBlockOrStatement
- pSqlStatement

pSqlDeclareSection:

A PSQL declare section defines one or more local variables, which are available in the block and nested blocks.

DECLARE pSqlDeclaration

pSqlDeclareSection ::= DECLARE pSqlDeclaration+

referenced by:
- pSqlBlock

pSqlDeclaration:

pSqlItemDeclaration

pSqlDeclaration ::= pSqlItemDeclaration

referenced by:
- pSqlDeclareSection

pSqlItemDeclaration:
An item declaration defines one named variable, based upon data type. The initial value can be added as a constant.

```
variableName dataType ASSIGNMENT_OPERATOR constant BATCH SEPARATOR
```

```pSqlItemDeclaration```

referenced by:
- `pSqlDeclaration`

```pSqlBody```

A PSQL body contains the procedural logic as well as SQL statements. Variables must have been declared beforehand.

```
BEGIN pSqlStatement END BATCH SEPARATOR
```

```pSqlBody```

referenced by:
- `pSqlBlock`

```pSqlStatement```

A number of basic PSQL statements are available.

```
pSqlAssignmentStatement pSqlExecuteImmediateStatement pSqlIfStatement
pSqlLoopStatement pSqlNullStatement pSqlBlock sqlStatement BATCH SEPARATOR
```

```pSqlStatement```

referenced by:
- `pSqlBlockOrStatement`
- `pSqlBody`
- `sqlOrPSqlStatement`

```pSqlBlockOrStatement```

A PSQL block or statement defines a procedural step or a SQL statement to be executed.

```
pSqlBlock pSqlStatement
```

```pSqlBlockOrStatement```

referenced by:
- `pSqlBlockOrStatements`
pSqlBlockOrStatements:

\[
pSqlBlockOrStatement \rightarrow pSqlBlockOrStatements + \]

referenced by:
- pSqlElIfExpression
- pSqlForNumberLoopStatement
- pSqlForRecordLoopStatement
- pSqlIfStatement
- pSqlWhileLoopStatement

pSqlNullStatement:

The null-statement is a NOP-statement (No Operator). The use of the null-statement is necessary when a PSQL statement is needed, but no activity needs to be performed such as with an if statement. The null-statement also makes explicit that a developer has considered the actions needed and found that no action applies to a specific scenario. This leads to improved code documentation.

\[
\text{NULL BATCHSEPARATOR} \rightarrow pSqlNullStatement \rightarrow NULL BATCHSEPARATOR
\]

referenced by:
- pSqlStatement

pSqlAssignmentStatement:

The assignment statement assign a new value to a variable. To assign the results of a SQL query to a value, use a select ... into ... statement.

\[
\text{variableName ASSIGNMENT_OPERATOR expression BATCHSEPARATOR} \rightarrow pSqlAssignmentStatement \rightarrow \text{variableName ASSIGNMENT_OPERATOR expression BATCHSEPARATOR}
\]

referenced by:
- pSqlStatement

pSqlExecuteImmediateStatement:

The execute immediate PSQL statement enables the use of SQL statements that are compiled at runtime. For instance dynamic DDL statements can not always be executed on compiled time and the execute immediate enables these.

\[
\text{EXECUTE IMMEDIATE expression BATCHSEPARATOR} \rightarrow pSql ExecuteImmediateStatement \rightarrow \text{EXECUTE IMMEDIATE expression BATCHSEPARATOR}
\]
pSqlIfStatement:
The if-statement performs conditional logic. When the boolean expression after if holds, the PSQL block after the 'then' will be executed. Other branches can be specified using an elsif. Otherwise, and only when specified, the logic after the else is executed.

\[
\text{IF booleanExpression THEN pSqlBlockOrStatements pSqlElsIfExpression ELSE pSqlBlockOrStatements END IF BATCHSEPARATOR}
\]

referenced by:
- pSqlStatement

pSqlElsIfExpression:
ELSIF booleanExpression THEN pSqlBlockOrStatements

\[
\text{ELSIF booleanExpression THEN pSqlBlockOrStatements}
\]

referenced by:
- pSqlIfStatement

pSqlLoopStatement:
A variety of PSQL statements for loops are available.

\[
pSqlLoopStatement ::= pSqlForNumberLoopStatement | pSqlForRecordLoopStatement | pSqlWhileLoopStatement
\]

referenced by:
- pSqlStatement

pSqlForNumberLoopStatement:
This PSQL integer loop statement iterates over a range of integer values, executing PSQL statements for each iterated value. The iterations goes from the first value to the last value in increments of 1. The iterations go backward in decrements of 1 when 'reverse' is specified.

\[
\text{FOR variableName \textsc{IN REVERSE} numericConstant variableName DOT DOT numericConstant variableName LOOP pSqlBlockOrStatements END LOOP BATCHSEPARATOR}
\]
pSqlForNumberLoopStatement

::= FOR\[93\] variableName\[95\] IN\[6\] REVERSE\[66\] ? ( numericConstant\[90\] | variableName\[95\]) DOT\[6\] DOT\[6\] ( numericConstant\[90\] | variableName\[95\]) LOOP\[6\] pSqlBlockOrStatements\[93\] END\[42\] LOOP\[6\]

BATCHSEPARATOR\[6\]

referenced by:
- pSqlLoopStatement\[94\]

pSqlForRecordLoopStatement:

This PSQL result set loop statement iterates over a result set returned by an Invantive SQL query. The PSQL statements are executed for each record. The record's specific values can be retrieved using the variable.

FOR variableName IN PARENTHESIS_OPEN selectStatement PARENTHESIS_CLOSE LOOP pSqlBlockOrStatements END LOOP BATCHSEPARATOR

pSqlForRecordLoopStatement\[95\]

::= FOR\[6\] variableName\[95\] IN\[6\] PARENTHESIS_OPEN selectStatement PARENTHESIS_CLOSE variableName\[95\] PARENTHESIS_OPEN selectStatement\[7\] PARENTHESIS_CLOSE\[6\] LOOP\[6\] pSqlBlockOrStatements\[93\] END\[42\] LOOP\[6\] BATCHSEPARATOR\[6\]

referenced by:
- pSqlLoopStatement\[94\]

pSqlWhileLoopStatement:

This PSQL while loop statement executes PSQL statements as long as the specified boolean condition evaluates to true at loop end.

WHILE booleanExpression LOOP pSqlBlockOrStatements END LOOP BATCHSEPARATOR

pSqlWhileLoopStatement\[93\]

::= WHILE\[6\] booleanExpression\[80\] LOOP\[6\] pSqlBlockOrStatements\[93\] END\[42\] LOOP\[6\] BATCHSEPARATOR\[8\]

referenced by:
- pSqlLoopStatement\[94\]

variableName:

IDENTIFIER

variableName\[92\]

::= IDENTIFIER\[82\]

referenced by:
- pSqlAssignmentStatement\[93\]
- pSqlForNumberLoopStatement\[94\]
- pSqlForRecordLoopStatement\[95\]
- pSqlItemDeclaration\[91\]
- variableList\[12\]
2.2 Providers

The providers described here are available on all platforms.

2.2.1 Provider Atom10

Atom version 1.0.

Code for use in settings.xml: Atom10

Alias: atom

Status: Production

Available in Editions: Paid, Open Data, Community

2.2.2 Provider AutoTask

AutoTask service management.

Code for use in settings.xml: AutoTask

Alias: autotask

Status: Non-production

Available in Editions: Paid


Non-technical Documentation: http://severa.visma.com

2.2.3 Provider CbsNl

Centraal Bureau voor de Statistiek.

Code for use in settings.xml: CbsNl

Alias: cbsnl

Status: Production

Available in Editions: Paid, Open Data, Community


Provider Attributes

The following provider attributes are available for CbsNl:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from</td>
<td>Set from</td>
<td>Set from</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\In vantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Conversion Table Functions

#### Code for use in settings.xml: Conversion

**Alias:** conversion  
**Status:** Production  
**Available in Editions:** Paid

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
<td></td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>False</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>---------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>True</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- True
- ✓
- ✓
- ✓
<table>
<thead>
<tr>
<th>Code</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>pre-request-delay-ms</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-----------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 2.2.5 Provider DataCache

Persistent data cache, data replication or data vault.

Code for use in settings.xml: DataCache

Alias: cache
Provider Attributes

The following provider attributes are available for DataCache:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL Statement</th>
<th>Set from Providers File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>application-prefix-facts</td>
<td>A prefix applied after the environment prefix to every facts table, index and view.</td>
<td>dcd_</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>application-prefix-history</td>
<td>A prefix applied after the environment prefix to every history table, index and view.</td>
<td>dcs_</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>application-prefix-repository</td>
<td>A prefix applied after the environment prefix to every repository table, index and view.</td>
<td>dc_</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>backing-bulk-insert-page-size-bytes</td>
<td>Approximate maximum size in bytes of page when bulk inserting on backing database.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>backing-bulk-insert-page-size-rows</td>
<td>Number of rows to insert per page when bulk inserting on backing database.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>backing-bulk-insert-timeout-sec</td>
<td>Number of seconds after which a bulk insert on backing database times out.</td>
<td>3600</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>backing-command-timeout-sec</td>
<td>Number of seconds after which a command on backing database times out.</td>
<td>3600</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>backing-connection-string</td>
<td>The connection string for the backing database.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>backing-force-case-sensitive-identifiers</td>
<td>Consider identifiers on the backing database as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>backing-forced-casing-identifiers</td>
<td>Forced casing of identifiers on the backing database. Choose from Unset, Lower, Upper and Mixed.</td>
<td>Unset</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>backing-maximum-length-identifiers</td>
<td>Non-default maximum length on the backing database in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>backing-maximum-number-of-pooled-connec-</td>
<td>Maximum number of concurrent pooled connections on backing database.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
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<tr>
<td>------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
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<td>-----------------</td>
</tr>
<tr>
<td>backing-maximum-sleep-acquire-pooled-connection-ms</td>
<td>Maximum time in ms to wait for acquiring a free connection from a pool of connections on backing database.</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>backing-maximum-sleep-acquire-un-pooled-connection-ms</td>
<td>Maximum time in ms to wait for acquire a free connection when there is no connection pooling on backing database.</td>
<td>600000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>backing-minimum-connection-timeout-sec</td>
<td>Minimum number of seconds after which a newly requested connection on backing database times out.</td>
<td>300</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>backing-preferred-number-of-pooled-connections</td>
<td>Preferred number of concurrent pooled connections on backing database.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>backing-provider</td>
<td>Name of the Invantive connector for the backing database</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>backing-sql-server-connect-retry-count</td>
<td>Number of connect retries on connection failed on the backing SQL Server database (SQL Server only).</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>backing-sql-server-connect-retry-interval-sec</td>
<td>Interval between connect retries on connection failed on the backing SQL Server database (SQL Server only).</td>
<td>15</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>backing-standardize-identifiers</td>
<td>Rewrite all identifiers on the backing database to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>backing-standardize-identifiers-casing</td>
<td>Rewrite all identifiers on the backing database to the platform-specific recommended standard casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>beta-compress-facts-on-disk</td>
<td>Whether to compress facts in the disk cache.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>beta-encrypt-facts-on-disk</td>
<td>Whether to encrypt facts in the disk cache.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>beta-store-facts-in-database</td>
<td>Whether to store facts in the database containing the repository.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>beta-store-facts-on-disk</td>
<td>Whether to store facts in the disk cache.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>beta-use-facts-in-database</td>
<td>Whether to use facts in the database cache.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>beta-use-facts-on-disk</td>
<td>Whether to use facts in the disk cache.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-delete-page-size-rows</td>
<td>Number of rows to delete per batch when bulk deleting</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-bytes</td>
<td>Approximate maximum size in bytes of batch when bulk inserting</td>
<td>10000000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-rows</td>
<td>Number of rows to insert per batch when bulk inserting</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
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<td>Default Value</td>
<td>Set from Connection String</td>
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<tr>
<td>--------------------------</td>
<td>-------------------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>cache-folder</td>
<td>Folder to store Data Cache files in.</td>
<td>C: \Users\gle3.WS 212\Invantive\Cache\datacache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>default-skip-client-side-cacheable</td>
<td>Whether to skip client-side cacheable tables by default.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>default-use-ods</td>
<td>Whether to use the Operational Data Store when no hint is specified.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>delete-number-table-partition-versions-per-group</td>
<td>Maximum number of table partition versions selected in the IN-clause for a delete of facts.</td>
<td>50</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>development-use-http-disk-cache</td>
<td>Whether to allow use of the disk cache for platform HTTP requests.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>drop-backlog-factor</td>
<td>Maximum ratio between number of versions dropped and new versions loaded on refresh.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>environment-prefix-all</td>
<td>A prefix applied to repository, facts and history database tables, indexes and views.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>environment-prefix-facts</td>
<td>A prefix applied to every facts table, index and view.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>environment-prefix-history</td>
<td>A prefix applied to every history table, index and view.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>environment-prefix-logical-view</td>
<td>A prefix applied to every logical view.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>environment-prefix-repository</td>
<td>A prefix applied to every repository table, index and view.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>event-log-entries-delete-page-size-rows</td>
<td>Number of rows to delete per batch on maintaining facts.</td>
<td>1000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>event-log-memory-cache-flush-interval-sec</td>
<td>Maximum interval in seconds between flushes of in-memory cache of event log entries to database.</td>
<td>15</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>event-log-memory-cache-size</td>
<td>Size of in-memory cache of event log entries before they are written to the database.</td>
<td>100</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>facts-delete-page-size-characters</td>
<td>Number of characters to delete per batch on maintaining facts.</td>
<td>10000000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>facts-delete-page-size-rows</td>
<td>Number of rows to delete per batch on maintaining facts.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>facts-insert-page-size-rows</td>
<td>Number of rows to insert per batch on maintaining facts.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>forced-casing-logical-view-column-name</td>
<td>Forced casing of logical view column names. Choose from Unset, Lower, Up-</td>
<td>Unset</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
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</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>forced-casing-logical-view-name</td>
<td>Forced casing of logical view names. Choose from Unset, Lower, Upper and Mixed.</td>
<td>Unset</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>forw arded-incoming-messages-delete-max-runtime-sec</td>
<td>Maximum runtime of purge forw arded incoming messages in seconds.</td>
<td>3600</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>forw arded-incoming-messages-delete-page-size-rows</td>
<td>Number of rows to delete per batch on maintaining forw arded incoming messages.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>garbage-collection-physical-memory-load-threshold</td>
<td>Percentage of physical memory load above which a full garbage collection is run after replication.</td>
<td>80</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>garbage-collection-replication-interval-count</td>
<td>Number of replications after last garbage collection after which a full garbage collection is run.</td>
<td>100</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>garbage-collection-replication-minimum-interval-sec</td>
<td>Minimum interval in seconds between two full garbage collections.</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forw ard filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>log-native-calls-to-disk</td>
<td>Registers native calls to data container backend as disk files.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>log-native-calls-to-trace</td>
<td>Log native calls to data container backend on the trace.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>max-delete-facts-parallel</td>
<td>Maximum number of parallel deletes on facts tables.</td>
<td>8</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum-length-logical-view-column-name</td>
<td>Maximum length of logical view column names.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum-length-logical-view-name</td>
<td>Maximum length of logical view names.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>max-messages-per-customer-service-request</td>
<td>Maximum number of messages to download from Customer Service per request.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>max-refreshes-parallel</td>
<td>Maximum number of parallel refreshes.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>max-url-length-accepted</td>
<td>The maximum accepted URL length before raising an error.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>max-url-length-desired</td>
<td>The maximum desired URL length.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
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<td>----------------------------</td>
<td>------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>orphaned-facts-delete-page-size-rows</td>
<td>Number of rows to delete per batch on purging orphaned facts during repository upgrade or maintenance.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a partition-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>purge-interval-event-log-entries-minutes</td>
<td>Interval in minutes between completed purges of ancient event log entries.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requested-page-size</td>
<td>Preferred number of rows to exchange per round trip; only effective on limited platforms such as AFAS Online</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>retention-event-log-entries-days</td>
<td>Retention of event log entries in days.</td>
<td>35</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>update-number-table-partition-versions-per-group</td>
<td>Maximum number of table partition versions selected in the IN-clause for an update of metadata.</td>
<td>1000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>upgrade-force-execute</td>
<td>Whether to force execution of possible upgrade steps, even when there are no reasons to perform an upgrade.</td>
<td>False</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>upgrade-force-repository-version-start</td>
<td>Specifies the repository version to start upgrade from when specified.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>upgrade-force-specials</td>
<td>Execute special operations before the repository is opened.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**2.2.6 Provider DataDictionary**

Invantive SQL data dictionary.

Code for use in settings.xml: DataDictionary
**Connector Attributes**

The Data Dictionary connector can be configured using the following attributes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from</th>
<th>Set from</th>
<th>Set from</th>
<th>Set from</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Connection String</td>
<td>SQL Statement</td>
<td>Connectors File</td>
<td>Log On</td>
</tr>
<tr>
<td>bulk-delete-page-size-rows</td>
<td>Number of rows to delete per batch when bulk deleting</td>
<td>10000</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>bulk-insert-page-size-bytes</td>
<td>Approximate maximum size in bytes of batch when bulk inserting</td>
<td>10000000</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>bulk-insert-page-size-rows</td>
<td>Number of rows to insert per batch when bulk inserting</td>
<td>10000</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>connection-string</td>
<td>The connection string for the backing database</td>
<td></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-ignore-write-errors</td>
<td>Whether to ignore write errors to disk cache.</td>
<td>False</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>invantive-sql-correct-invalid-date</td>
<td>Whether to correct invalid dates.</td>
<td>False</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL Statement</td>
<td>Set from Connectors File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>inventivie-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>log-native-calls-to-disk</td>
<td>Registers native calls to data container backend as disk files.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>log-native-calls-to-trace</td>
<td>Log native calls to data container backend on the trace.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-accepted</td>
<td>The maximum accepted URL length before raising an error.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-desired</td>
<td>The maximum desired URL length.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a partition-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>provider</td>
<td>Name of the Invantive connector for the backing database</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requested-page-size</td>
<td>Preferred number of rows to exchange per round trip; only effective on limited platforms such as AFAS Online</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rew rite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rew rite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
2.2.7 Provider DocumentCloud

DocumentCloud.
Code for use in settings.xml: DocumentCloud
Alias: docc
Status: Production
Available in Editions: Paid, Open Data, Community
Technical Documentation: https://www.documentcloud.org/help/api
Non-technical Documentation: https://www.documentcloud.org/home

Provider Attributes

The following provider attributes are available for DocumentCloud:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Generated 11-01-2019 20:08 on version 17.30.0-PROD+1821.

### 2.2.8 Provider Dropbox

Dropbox information.

Code for use in settings.xml: Dropbox
Alias: dropbox
Status: Non-production
Available in Editions: Paid, Open Data, Community
Technical Documentation: https://www.dropbox.com/developers

2.2.9 Provider Dummy

Fixed memory provider with fixed data set for regression testing and demos.
Code for use in settings.xml: Dummy
Alias: dummy
Status: Production
Available in Editions: Paid
Updated: 08-02-2019 16:03 using Invantive SQL version 17.31.26-BETA+1898.

Provider Attributes

The following provider attributes are available for Dummy:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Length in ms of a partition-based rate limit across all slots.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit across all slots.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
2.2.10 Provider DynamicsCrm
Microsoft Dynamics CRM.
Code for use in settings.xml: DynamicsCrm
Alias: dyncrm
Status: Production
Available in Editions: Paid

2.2.11 Provider EcbExchangeRates
ECB Exchange Rates.
Code for use in settings.xml: EcbExchangeRates
Alias: ecbexref
Status: Production
Available in Editions: Paid, Open Data, Community

2.2.12 Provider Edifact
EDIFACT.
Code for use in settings.xml: Edifact
Alias: edi
Status: Production
Available in Editions: Paid
Technical Documentation: https://www.unece.org/cefact/edifact/welcome.html
Non-technical Documentation: http://www.unece.org/trade/untid/texts/d421_d.htm

Provider Attributes
The following provider attributes are available for Edifact:
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>edi-extension</td>
<td>{res:itgen_provider_attribute_edi_extension_description}</td>
<td><code>*.*</code></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>edi-input-directories</td>
<td>{res:itgen_provider_attribute_edi_input_directories_description}</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>edi-output-directory</td>
<td>{res:itgen_provider_attribute_edi_output_directories_description}</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Generated 11-01-2019 20:45 on version 17.30.0-PROD+1821.

### 2.2.13 Provider ExactOnlineAll

Exact Online (XML, REST and undocumented).

Code for use in settings.xml: ExactOnlineAll

Alias: eol

Abbreviation: eol

Status: Production

Available in Editions: Paid
String-comparison is Case-sensitive: true
Use Catalog in Full Name: true
Use Schema in Full Name: true
Partition Column: division

Updated: 02-12-2019 15:47 using Invantive SQL version 17.33.216-BETA+2512.
Technical Documentation: https://developers.exactonline.com

Provider Attributes

The following provider attributes are available for ExactOnlineAll:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL Statement</th>
<th>Set from Providers File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-client-id</td>
<td>The client ID is a unique identifier of your application. It is generated by registering an application.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-client-secret</td>
<td>The client secret is to be kept confidential. Such as a password for a login code, the client secret is the confidential part of an app identified by a client ID. It is needed during the OAuth2 Code Grant Flow together with the refresh token to get access.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-refresh-token</td>
<td>Refresh Token is a security token for the OAuth2 Code Grant Flow. With a Refresh Token and client secret you can retrieve a renewed access token to access protected resources. A Refresh Token and client secret must be stored securely since once compromised allows access to your protected resources.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-redirect-url</td>
<td>The redirect URI is the website a browser session is redirected to after the OAuth2 authentication process has been completed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>totp-secret</td>
<td>Shared secret key to generate one-time password using TOTP RFC 6238. For improved security, manually enter the one-time password asked during login.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-token-url</td>
<td>The token URI is the OAuth2 endpoint to exchange tokens.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bulk-delete-page-size-rows</td>
<td>Number of rows to delete per batch when bulk deleting</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-bytes</td>
<td>Approximate maximum size in bytes of batch when bulk inserting</td>
<td>10000000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-rows</td>
<td>Number of rows to insert per batch when bulk inserting</td>
<td>250</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-400-bad-request-max-tries</td>
<td>Maximum number of tries when Akamai reports that the API server is unavailable</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL Statement</td>
<td>Set from Providers File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>dow nload-error-400-bad-request-sleep-ini- tial-ms</td>
<td>Initial sleep in milliseconds between retries when Akamai reports that the API server is unavailable during retrieval of data.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-400-bad-request-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when Akamai reports that the API server is unavailable during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-400-bad-request-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries Akamai reports that the API server is unavailable during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-429-too-many-requests-max-tries</td>
<td>Maximum number of tries when the website reports that too many requests have been made during a timeslot of one minute or one day.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-429-too-many-requests-sleep-ini- tial-ms</td>
<td>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.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-429-too-many-requests-sleep-max-ms</td>
<td>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.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-429-too-many-requests-sleep-multiplicator</td>
<td>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.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-503-server-unavailable-max-tries</td>
<td>Maximum number of tries when Akamai reports that the API server is unavailable during retrieval of data.</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-503-server-unavailable-sleep-ini- tial-ms</td>
<td>Initial sleep in milliseconds between retries when Akamai reports that the API server is unavailable during retrieval of data.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-503-server-unavailable-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when Akamai reports that the API server is unavailable during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-503-server-unavailable-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries Akamai reports that the API server is unavailable during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-504-gatew ay-timeout-max-tries</td>
<td>Maximum number of tries when the website reports a gateway timeout.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-504-gatew ay-timeout-sleep-ini- tial-ms</td>
<td>Initial sleep in milliseconds between retries when the website reports a gateway timeout.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-504-gatew ay-timeout-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the website reports a gateway timeout.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>dow nload-error-504-gateway-timeout-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the website reports a gateway timeout.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-argument-exception-max-tries</td>
<td>Maximum number of tries when an argument exception is returned when downloading a blob.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-argument-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when an argument exception is returned when downloading a blob.</td>
<td>1000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-argument-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when an argument exception is returned when downloading a blob.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-argument-exception-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when an argument exception is returned when downloading a blob.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-io-exception-max-tries</td>
<td>Maximum number of tries when a network I/O connection failure occurs during retrieval of data.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-io-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when a network I/O connection failure occurs during retrieval of data.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-io-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when a network I/O connection failure occurs during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-io-exception-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when a network I/O connection failure occurs during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-json-exception-max-tries</td>
<td>Maximum number of tries when an invalid JSON body is returned.</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-json-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when an invalid JSON body is returned.</td>
<td>1000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-json-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when an invalid JSON body is returned.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-json-exception-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when an invalid JSON body is returned.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL Statement</td>
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<td>Set from Log On</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>dow nload-error-other-exception-max-tries</td>
<td>Maximum number of tries when an unqualified error occurs during retrieval of data.</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-other-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when an unqualified error occurs during retrieval of data.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-other-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when an unqualified error occurs during retrieval of data.</td>
<td>30000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-other-exception-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when an unqualified error occurs during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-socket-exception-max-tries</td>
<td>Maximum number of tries when the network connection is forcibly dropped during retrieval of data.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-socket-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the network connection is forcibly dropped during retrieval of data.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-socket-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the network connection is forcibly dropped during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-socket-exception-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the network connection is forcibly dropped during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-w eb-exception-max-tries</td>
<td>Maximum number of tries when a web connection failure occurs during retrieval of data.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-w eb-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when a web connection failure occurs during retrieval of data.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-w eb-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when a web connection failure occurs during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-w eb-exception-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when a web connection failure occurs during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-w eb-not-implemented-max-tries</td>
<td>Maximum number of tries when the connection reports not implemented.</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-w eb-not-implemented-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the connection reports not implemented.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-w eb-not-implemented-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the connection reports not implemented.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-w eb-not-implemented-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the connection reports not implemented.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>dow nload-error-w eb-timeout-max-tries</td>
<td>Maximum number of tries when the connection reports a timeout.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
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</tr>
<tr>
<td>dow nload-error-w eb-timeout-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the connection reports a timeout.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-w eb-timeout-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the connection reports a timeout.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-w eb-timeout-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the connection reports a timeout.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-w eb-unauthorized-max-tries</td>
<td>Maximum number of retries when the connection reports an unauthorized error.</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-w eb-unauthorized-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the connection reports an unauthorized error.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-w eb-unauthorized-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the connection reports an unauthorized error.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-w eb-unauthorized-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the connection reports an unauthorized error.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>encrypt-http-disk-cache</td>
<td>Whether to encrypt the contents of the disk cache when used. Disable only when performance is a premium above data security.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>exact-development-mode</td>
<td>True if we have to connect to the Exact development instance.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>exact-online-url</td>
<td>URL of Exact Online web service.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>hide-empty-columns</td>
<td>Whether to exclude columns without a value from a result set when using 'select *'. With this XML provider, often more than 95% of the columns are empty due to limitations of the XSD specification. Should be enabled in general.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache</td>
<td>Action: provide 'empty' to empty HTTP disk cache.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache\http\gle3\shared</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
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<td>-----------------</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache</td>
<td>Action: provide 'empty' to empty HTTP memory cache.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-document-download-errors</td>
<td>Ignore all errors when fetching the document contents from Exact Online.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-429-errors</td>
<td>Ignore HTTP 429 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-500-errors</td>
<td>Ignore HTTP 500 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-xml-errors</td>
<td>Ignore normal errors within the XML returned by the API.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-xml-fatal-errors</td>
<td>Ignore fatal errors within the XML returned by the API.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-xml-no-access-errors</td>
<td>Ignore no access errors within the XML returned by the API.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-xml-warnings</td>
<td>Ignore warnings within the XML returned by the API.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>insert-allowed</td>
<td>Allow use of the BETA functionality for inserts.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invalid-json-on-get-max-tries</td>
<td>Maximum number of tries when the JSON received on GET is invalid.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invalid-json-on-get-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the JSON received on GET is invalid.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invalid-json-on-get-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the JSON received on GET is invalid.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invalid-json-on-get-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the JSON received on GET is invalid.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invalid-json-on-post-max-tries</td>
<td>Maximum number of retries when the JSON received on POST is invalid.</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invalid-json-on-post-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the JSON received on POST is invalid.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invalid-json-on-post-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the JSON received on POST is invalid.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
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</tr>
<tr>
<td>invalid-json-on-post-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the JSON received on POST is invalid.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>limit-partition-calls-left</td>
<td>Minimum number of remaining API calls on a partition towards a hard limit. When below, an error is raised.</td>
<td>500</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-accepted</td>
<td>The maximum accepted URL length before raising an error.</td>
<td>2800</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-desired</td>
<td>The maximum desired URL length.</td>
<td>2500</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>metadata-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for re-use of metadata.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a partition-based rate limit.</td>
<td>66000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit</td>
<td>272</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>16</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>result-set-cache</td>
<td>Action: provide ‘empty’ to empty.</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>simulate-http-400-errors</td>
<td>Simulate HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-400-errors-percentage</td>
<td>Percentage of simulated HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-403-errors</td>
<td>Simulate HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-403-errors-percentage</td>
<td>Percentage of simulated HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-429-errors</td>
<td>Simulate HTTP 429 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-429-errors-percentage</td>
<td>Percentage of simulated HTTP 429 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
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<td>------------------</td>
</tr>
<tr>
<td>simulate-http-500-errors</td>
<td>Simulate HTTP 500 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-500-errors-percentage</td>
<td>Percentage of simulated HTTP 500 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-protocol-errors</td>
<td>Simulate HTTP protocol errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-protocol-errors-percentage</td>
<td>Percentage of simulated HTTP protocol errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-timeout-errors</td>
<td>Simulate HTTP timeout errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-timeout-errors-percentage</td>
<td>Percentage of simulated HTTP timeout errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>update-allowed</td>
<td>Allow use of the BETA functionality for updates.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-batch-insert</td>
<td>Whether to use batch insert.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

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2.2.14 Provider EzBase

EZ-Base

Code for use in settings.xml: EzBase
Alias: ezbase
Status: Production
Available in Editions: Paid

Provider Attributes

The following provider attributes are available for EzBase:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>result-set-cache</td>
<td>Action: provide 'empty' to empty.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 2.2.15 Provider Facebook

Facebook.

Code for use in settings.xml: Facebook

Alias: facebook

Status: Non-production

Available in Editions: Paid

Technical Documentation: [https://developers.facebook.com/](https://developers.facebook.com/)

### Provider Attributes

The following provider attributes are available for Facebook:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-client-id</td>
<td>The client ID is a unique identifier of your application. It is generated by registering an application.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>---------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>api-client-secret</td>
<td>The client secret is to be kept confidential. Such as a password for a logon code, the client secret is the confidential part of an app identified by a client ID. It is needed during the OAuth2 Code Grant Flow together with the refresh token to get access.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-redirect-url</td>
<td>The redirect URI is the website a browser session is redirected to after the OAuth2 authentication process has been completed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>api-refresh-token</td>
<td>Refresh Token is a security token for the OAuth2 Code Grant Flow. With a Refresh Token and client secret you can retrieve a renewed access token to access protected resources. A Refresh Token and client secret must be stored securely since once compromised allows access to your protected resources.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>download-error-internet-dow n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:sers\gle3\Invantive\Cache</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from</td>
<td>Set from</td>
<td>Set from</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


2.2.16 Provider Freshdesk

Freshdesk, customer happiness for exceptional customer service.
Code for use in settings.xml: Freshdesk
Alias: freshdesk
Authentication can be done using one of the following two alternatives:
1. Using the user log on code, password and company also used on the Freshdesk website.
2. Using an API key and company.

Authentication using user log on code and password is recommended for general use. The company is the name before '.freshdesk.com' in the URL used to log on to Freshdesk in a browser.

The API key can be found in the 'Edit Profile' page in Freshdesk, as described on https://support.freshdesk.com/support/solutions/articles/225435-where-can-i-find-my-api-key.

Usage Limits

Invantive SQL executes API calls to retrieve and upload data. The number of API calls allowed per hour depends on your Freshdesk plan. The default usage limits vary between 1,000 and 5,000 calls per hour. Invantive SQL ensures that within your session the number of calls allowed per hour is not exceeded.

To get an impression of how Invantive SQL translates into API calls, please query the data dictionary view 'sessionios', such as with 'select * from sessionios@datadictionary'.

Provider Attributes

The following provider attributes are available for Freshdesk:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>company</td>
<td>{res:itgen_freshdesk_company_description}</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>----------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:sers\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewire all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>----------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

2.2.17 Provider Ftp

FTP.

Code for use in settings.xml: Ftp

Alias: ftp

Abbreviation: ftp

Status: Production

Available in Editions: Paid

String-comparison is Case-sensitive: true

Use Catalog in Full Name: true

Use Schema in Full Name: true


Provider Attributes

The following provider attributes are available for Ftp:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>site</td>
<td>(res:itgen_ftp_site_description)</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>port</td>
<td>(res:itgen_ftp_port_description)</td>
<td>21</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-ssl</td>
<td>Use SSL for the connection (FTPS).</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-passive</td>
<td>Use passive FTP(S) instead of active.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-binary</td>
<td>Use binary mode (true) or ASCII mode (false) transfers by default.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>timeout-connection-sec</td>
<td>Seconds to wait for a connection attempt to succeed before giving up.</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>timeout-data-connection-sec</td>
<td>Seconds for a data connection to be established before giving up.</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>timeout-data-read-sec</td>
<td>Seconds the data channel should wait for the server to send data.</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>timeout-read-sec</td>
<td>Seconds for data to be read from the underlying stream.</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>socket-poll-interval-sec</td>
<td>Seconds between two poll intervals when enabled.</td>
<td>15</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>socket-keep-alive</td>
<td>Whether to keep the connection alive by polling.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>special-connection-type</td>
<td>Special connection types for specialized use.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ssth-protocols</td>
<td>Comma-separated list of SSL protocols; defaults to TLS 1.1 and TLS 1.2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>max-url-length-accepted</td>
<td>The maximum accepted URL length before raising an error.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-desired</td>
<td>The maximum desired URL length.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a partition-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
2.2.18 Provider GitLab

GitLab version control in the cloud or on-premises.

Code for use in settings.xml: GitLab

Alias: GitLab

Status: Production

Available in Editions: Paid

Technical Documentation: https://docs.gitlab.com/ee/api/

Non-technical Documentation: https://gitlab-apps.com

2.2.19 Provider IbmDb2Udb

IBM DB2/UDB.

Code for use in settings.xml: IbmDb2Udb

Alias: db2

Status: Production

Available in Editions: Paid

Additional Driver to install: https://support.invantive.com/download-driver-ibm-db2

2.2.20 Provider InMemoryStorage

Session-specific temporary storage of result sets.

Code for use in settings.xml: InMemoryStorage

Alias: inmem

Status: Production

Available in Editions: Paid

---

**Table:**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

---

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<table>
<thead>
<tr>
<th>Code</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>invantive-sql-forward-filters-to-data-containers</code></td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><code>invantive-sql-shuffle-fetch-results-data-containers</code></td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>---------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>---------------------------</td>
<td>------------------------</td>
</tr>
</tbody>
</table>

Please note that the table is incomplete and the contents are not visible in the image. The table likely contains information about code settings and their sources.
### 2.2.21 Provider Invantive.Producer

Invantive Producer repository.

Code for use in settings.xml: Invantive.Producer

Alias: producer

Status: Production

Available in Editions: Paid

<table>
<thead>
<tr>
<th>Code</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>models</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>templates</td>
<td>XML specification of folders with templates per product</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
2.2.22 Provider JIRA

JIRA, ticketing.

Code for use in settings.xml: JIRA

Alias: jira

Status: Non-production

Available in Editions: Paid


Non-technical Documentation: https://jira-apps.com

Provider Attributes

The following provider attributes are available for JIRA:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>---------------------------</td>
<td>---------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>server</td>
<td>{res:itgen_provider_attribute_jira_server_description}</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewite all identifiers to the recommended standard platform specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Provider Attributes

The following provider attributes are available for Kadaster:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rew rite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rew rite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Connector Attributes

The KeePass connector can be configured using the following attributes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Connectors File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>bulk-delete-page-size-rows</td>
<td>Number of rows to delete per batch when bulk deleting</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-bytes</td>
<td>Approximate maximum size in bytes of batch when bulk inserting</td>
<td>10000000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-rows</td>
<td>Number of rows to insert per batch when bulk inserting</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

`2.2.24 Provider KeePass`

Security-sensitive storage of keys.

Code for use in settings.xml: KeePass

Alias: KeePass

Abbreviation: kp

Status: Non-production

Available in Editions: Paid

String-comparison is Case-sensitive: true

Use Catalog in Full Name: true

Use Schema in Full Name: true

Updated: 10-09-2020 00:09 using Invantive SQL version 20.1.206-BETA+2915.
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Connectors File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-sql-correct-invalid-date</td>
<td>Whether to correct invalid dates.</td>
<td>False</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>log-native-calls-to-disk</td>
<td>Registers native calls to data container backend as disk files.</td>
<td>False</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>log-native-calls-to-trace</td>
<td>Log native calls to data container backend on the trace.</td>
<td>False</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>max-url-length-accepted</td>
<td>The maximum accepted URL length before raising an error.</td>
<td>8000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>max-url-length-desired</td>
<td>The maximum desired URL length.</td>
<td>8000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a partition-based rate limit.</td>
<td>60000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>requested-page-size</td>
<td>Preferred number of rows to exchange per round trip; only effective on limited platforms such as AFAS Online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a slot-based rate limit.</td>
<td>60000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.2.25 Provider LastResort

Provider always available as a last resort for translations.

Code for use in settings.xml: LastResort

Alias: last

Status: Production

Available in Editions: Paid

<table>
<thead>
<tr>
<th>Code</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>True</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>------</td>
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<td>-------------------------</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-----------------------</td>
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<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>True</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>------</td>
<td>---------------</td>
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<td>------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**2.2.26 Provider LinkedIn**

LinkedIn.

Code for use in settings.xml: LinkedIn
Alias: linkedin
Status: Production
Available in Editions: Paid
Technical Documentation: https://developer.linkedin.com/

2.2.27 Provider LoketNL
Loket.nl information.
Code for use in settings.xml: LoketNL
Alias: LoketNL
Status: Production
Available in Editions: Paid
Technical Documentation: https://helpdesk.loket.nl/hc/nl/articles/206244508

Provider Attributes
The following provider attributes are available for LoketNL:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>environyment-code</td>
<td>Environment code. The environment code signals the unique database to use. The code is a small integer. Please append '@test' to use a test environment located at the test data centre.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invanive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms)</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms)</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>---------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>tainers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Length in ms of a partition-based rate limit across all slots.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>result-set-cache</td>
<td>Action: provide 'empty' to empty.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit across all slots.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory to answer the current query</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses in memory</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-metadata-cache</td>
<td>Whether to use the metadata calculated previously Has only practical use during development on a XML provider.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-result-cache</td>
<td>Whether to use result sets from previous queries that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-test-environment</td>
<td>OBSOLETED. USE @test INSTEAD.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Generated 04-02-2019 9:03: on version 17.31.23-BETA+1887.
2.2.28 Provider Magento

Magento web shop.

Code for use in settings.xml: Magento

Alias: magento

Status: Non-production

Available in Editions: Paid

Technical Documentation: http://devdocs.magento.com/guides/v2.0/rest/bk-rest.html

2.2.29 Provider Mail

SMTP mail.

Code for use in settings.xml: Mail

Alias: mail

Abbreviation: ml

Status: Production

Available in Editions: Paid

String-comparison is Case-sensitive: true

Use Catalog in Full Name: true

Use Schema in Full Name: true

Updated: 10-09-2020 00:08 using Invantive SQL version 20.1.206-BETA+2915.

Connector Attributes

The Mail connector can be configured using the following attributes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL Statement</th>
<th>Set from Connectors File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>bulk-delete-page-size-rows</td>
<td>Number of rows to delete per batch when bulk deleting</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-bytes</td>
<td>Approximate maximum size in bytes of batch when bulk inserting</td>
<td>10000000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-rows</td>
<td>Number of rows to insert per batch when bulk inserting</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-correct-invalid-date</td>
<td>Whether to correct invalid dates.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Connectors File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>----------------------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>log-native-calls-to-disk</td>
<td>Registers native calls to data container backend as disk files.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>log-native-calls-to-trace</td>
<td>Log native calls to data container backend on the trace.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>mail-body-html</td>
<td>Set whether the mail body is HTML.</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>mail-from-email</td>
<td>The default FROM email address.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>mail-from-name</td>
<td>The default FROM name.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>mail-priority</td>
<td>Priority of the mail; negative is bulk, 0 is neutral, positive is urgent.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>mail-reply-to-email</td>
<td>The default REPLY TO email address.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>mail-reply-to-name</td>
<td>The default REPLY TO name.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-accepted</td>
<td>The maximum accepted URL length before raising an error.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-desired</td>
<td>The maximum desired URL length.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a partition-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requested-page-size</td>
<td>Preferred number of rows to exchange per round trip; only effective on limited platforms such as AFAS Online</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>smtp-enable-ssl</td>
<td>Set whether SSL is enabled for SMTP connections.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>smtp-host-address</td>
<td>The default SMTP host address to use.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>smtp-host-port-number</td>
<td>The default SMTP host port number to use.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>smtp-minimum-deliver-duration-ms</td>
<td>Minimum deliver duration in milliseconds for the SMTP send plus inserted sleep when SMTP send finished earlier than the minimum.</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Connectors File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>----------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>---------------------------</td>
<td>--------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>smtp-password</td>
<td>The default SMTP password to authenticate with.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>smtp-send-timeout-ms</td>
<td>Timeout in milliseconds after which the SMTP send times out.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>smtp-user-name</td>
<td>The default SMTP user name to authenticate with.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### 2.2.30 Provider Mendix

Mendix version control in the cloud or on-premises.

Code for use in settings.xml: Mendix

Alias: Mendix

Status: Non-production

Available in Editions: Paid

Technical Documentation: [https://docs.mendix.com/ee/api/](https://docs.mendix.com/ee/api/)

Non-technical Documentation: [https://mendix-apps.com](https://mendix-apps.com)

### 2.2.31 Provider MicrosoftGraph

Microsoft Graph (as used by Office 365).

Code for use in settings.xml: MicrosoftGraph

Alias: graph

Status: Production

Available in Editions: Paid

Technical Documentation: [https://graph.microsoft.io/en-us/](https://graph.microsoft.io/en-us/)

### 2.2.32 Provider MySql

Oracle MySQL.

Code for use in settings.xml: MySql

Alias: mysql

Status: Production

Available in Editions: Paid
Additional Driver to install: https://support.invantive.com/download-driver-mysql

**Provider Attributes**

The following provider attributes are available for MySqI:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>command-timeout-sec</td>
<td>Number of seconds after which a command times out.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum-number-of-pooled-connections</td>
<td>Maximum number of concurrent pooled connections.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-sleep-acquire-pooled-connection-ms</td>
<td>Maximum time in ms to wait for acquiring a free connection from a pool of connections.</td>
<td>30000</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum-sleep-acquire-unpooled-connection-ms</td>
<td>Maximum time in ms to wait for acquire a free connection when there is no connection pooling.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>preferred-number-of-pooled-connections</td>
<td>Preferred number of concurrent pooled connections.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-bind-variable-in-list</td>
<td>Prefix for bind variables used in an IN-list</td>
<td>i</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-bind-variable-normal</td>
<td>Prefix for bind variables used in all cases except in an IN-list</td>
<td>w</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>prefix-renamed-columns</td>
<td>Prefix appended to columns whose names occur multiple times in the column list of a query</td>
<td>column</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rew rite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rew rite all identifiers to the recommended standard platform-specific casing when</td>
<td>True</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
changing a data model on a case-dependent platform.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### 2.2.33 Provider Nasa

NASA space information.

Code for use in settings.xml: Nasa

Alias: nasa

Status: Production

Available in Editions: Paid, Open Data, Community

Technical Documentation: [https://api.nasa.gov/api.html#NeoWS](https://api.nasa.gov/api.html#NeoWS)

Non-technical Documentation: [https://api.nasa.gov/api.html#NeoWS](https://api.nasa.gov/api.html#NeoWS)

#### Provider Attributes

The following provider attributes are available for Nasa:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rew rite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rew rite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
Provider Attributes

The following provider attributes are available for NmbrsNL:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL Statement</th>
<th>Set from Providers File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

2.2.34 Provider NmbrsNL

Payrolling and HR management.

Code for use in settings.xml: NmbrsNL

Alias: nmbrs

Abbreviation: nms

Status: Production

Available in Editions: Paid

String-comparison is Case-sensitive: true

Use Catalog in Full Name: true

Use Schema in Full Name: true

Partition Column: COMPANY_CODE

Updated: 14-05-2020 17:13 using Invantive SQL version 20.1.36-BETA+2798.

Technical Documentation: https://api.nmbrs.nl
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (light) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C: \Users\gle3\WS21\Invantive\Cache\http\gle3\share d</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-ignore-write-errors</td>
<td>Whether to ignore write errors to disk cache.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms)</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (light) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms)</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-accepted</td>
<td>The maximum accepted URL length before raising an error.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-desired</td>
<td>The maximum desired URL length.</td>
<td>8000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a partition-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requested-page-size</td>
<td>Preferred number of rows to exchange per round trip; only effective on limited platforms such as AFAS Online</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>result-set-memory-cache</td>
<td>Action: provide 'empty' to empty.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses in memory.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-metadata-memory-cache</td>
<td>Whether to use the metadata in memory calculated previously Has only practical use during development on a XML provider.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-result-memory-cache</td>
<td>Whether to use result sets cached in memory from previous queries that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### 2.2.35 Provider OAuth UI provider

OAuth provider for Windows user-interface integrated OAuth authentication with a pop-up browser.

Code for use in settings.xml: OAuth UI provider

Alias: oauth

Status: Production

Available in Editions: Paid
<table>
<thead>
<tr>
<th>Code</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>True</td>
<td><img src="true" alt="Tick" /></td>
<td><img src="true" alt="Tick" /></td>
<td><img src="true" alt="Tick" /></td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>False</td>
<td><img src="true" alt="Tick" /></td>
<td><img src="true" alt="Tick" /></td>
<td><img src="true" alt="Tick" /></td>
</tr>
<tr>
<td>Code</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>True</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(C) Copyright 2004-2020 Invantive Software B.V., the Netherlands. All rights reserved.
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>pre-request-delay-ms</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(C) Copyright 2004-2020 Invantive Software B.V., the Netherlands. All rights reserved.
<table>
<thead>
<tr>
<th>Code</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>requests-parallel-max</td>
<td>32</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

(C) Copyright 2004-2020 Invantive Software B.V., the Netherlands. All rights reserved.
<table>
<thead>
<tr>
<th>Code</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.2.36 Provider Odbc

ODBC.

Code for use in settings.xml: Odbc
Alias: odbc
Status: Production
Available in Editions: Paid

2.2.37 Provider OpenArch: OPENARCH (NL) information.

OPENARCH (NL) information.

Code for use in settings.xml: OpenArch
Alias: openarch
Status: Non-production
Available in Editions: Paid, Open Data, Community
Technical Documentation: https://www.openarch.nl/api/docs/

Provider Attributes

The following provider attributes are available for OpenArch:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers, Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rew rite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rew rite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
2.2.38 Provider OpenExchangeRates: Open Exchange Rates.

Open Exchange Rates.

Code for use in settings.xml: OpenExchangeRates

Alias: openexra

Status: Production

Available in Editions: Paid

Technical Documentation: https://docs.openexchangerates.org/

Non-technical Documentation: https://docs.openexchangerates.org/docs

Provider Attributes

The following provider attributes are available for OpenExchangeRates:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rew rite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rew rite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
use-http-memory-cache-write | Whether to memorize HTTP responses from previous queries for use by future queries. | True | ✓ | ✓ | ✓

2.2.39 Provider OpenSpendingNL: Openspending.nl

Openspending.nl.

Code for use in settings.xml: OpenSpendingNL

Alias: osnl

Status: Production

Available in Editions: Paid, Open Data, Community

Technical Documentation: http://openspending.nl/api/v1/doc

Non-technical Documentation: http://openspending.nl/pagina/data

Provider Attributes

The following provider attributes are available for OpenSpendingNL:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>download-error-internet-down-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-down-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-down-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-down-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### 2.2.40 Provider Oracle: Oracle C driver-based provider.

Oracle C driver-based provider.

Code for use in settings.xml: Oracle

Alias: oracle

Status: Production

Available in Editions: Paid

### 2.2.41 Provider OracleManaged: Oracle .NET driver-based.

Oracle .NET driver-based provider.

Code for use in settings.xml: OracleManaged

Alias: oracle

Status: Production

Available in Editions: Paid

Additional Driver to install: [https://support.invantive.com/download-driver-oracle](https://support.invantive.com/download-driver-oracle)

#### Provider Attributes

The following provider attributes are available for OracleManaged:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>command-timeout-sec</td>
<td>Number of seconds after which a command times out.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>connection-string-self-tuning-add</td>
<td>Should the 'Self Tuning' be added automatically to the connection string?</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>connection-string-self-tuning-value</td>
<td>Value of self tuning to be added to the connection string</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>connection-string-statement-cache-size-add</td>
<td>Should the 'Statement Cache Size' be added automatically to the connection string?</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>connection-string-statement-cache-size-value</td>
<td>Size of the statement cache size to be added to the connection string</td>
<td>250</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers, Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-number-of-pooled-connections</td>
<td>Maximum number of concurrent pooled connections.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-sleep-acquire-pooled-connection-ms</td>
<td>Maximum time in ms to wait for acquiring a free connection from a pool of connections.</td>
<td>30000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-sleep-acquire-unpooled-connection-ms</td>
<td>Maximum time in ms to wait for acquire a free connection when there is no connection pooling.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>preferred-number-of-pooled-connections</td>
<td>Preferred number of concurrent pooled connections.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-bind-variable-in-list</td>
<td>Prefix for bind variables used in an IN-list</td>
<td>i</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-bind-variable-normal</td>
<td>Prefix for bind variables used in all cases except in an IN-list</td>
<td>w</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-renamed-columns</td>
<td>Prefix appended to columns whose names occur multiple times in the column list of a query</td>
<td>column</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>return-null-on-ora-22288</td>
<td>Return a null value instead of an exception when Oracle returns ORA-22288 when querying a bfile column</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rew rite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rew rite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

2.2.42 Provider Os: Windows operating system objects.

Windows operating system objects.

Code for use in settings.xml: Os
Alias: os
Status: Production
Available in Editions: Paid

**Provider Attributes**

The following provider attributes are available for Os:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


**2.2.43 Provider PayPal: PayPal.**

PayPal.

Code for use in settings.xml: PayPal

Alias: paypal

Status: Production
Available in Editions: Paid
Technical Documentation: https://developer.paypal.com/docs/

2.2.44 Provider PostgreSQL

PostgreSQL.
Code for use in settings.xml: PostgreSQL
Alias: pg
Status: Production
Available in Editions: Paid
Additional Driver to install: https://support.invantive.com/download-driver-postgresql

**Provider Attributes**
The following provider attributes are available for PostgreSQL:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>bulk-insert-page-size-rows</td>
<td>Number of rows to insert per page when bulk inserting</td>
<td>1000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>command-timeout-sec</td>
<td>Number of seconds after which a command times out.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>database</td>
<td>Database to open when connecting.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-number-of-pooled-connections</td>
<td>Maximum number of concurrent pooled connections.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-sleep-acquire-pooled-connection-ms</td>
<td>Maximum time in ms to wait for acquiring a free connection from a pool of connections.</td>
<td>30000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-sleep-acquire-unpooled-connection-ms</td>
<td>Maximum time in ms to wait for acquire a free connection when there is no connection pooling.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>npgsql-log</td>
<td>Whether to log messages of the npgsql provider</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>preferred-number-of-pooled-connections</td>
<td>Preferred number of concurrent pooled connections.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-bind-variable-in-list</td>
<td>Prefix for bind variables used in an IN-list</td>
<td>i</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>---------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>prefix-bind-variable-normal</td>
<td>Prefix for bind variables used in all cases except in an IN-list</td>
<td>w</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-renamed-columns</td>
<td>Prefix appended to columns whose names occur multiple times in the column list of a query</td>
<td>column</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

2.2.45 Provider RdwNl: RDW (NL) information.

RDW (NL) information.

Code for use in settings.xml: RdwNl

Alias: rdwnl

Status: Production

Available in Editions: Paid, Open Data, Community

Technical Documentation: https://www.rdw.nl/opendata/Paginas/default.aspx

**Provider Attributes**

The following provider attributes are available for RdwNl:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>---------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>dow nload-error-internet-d ow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dow nload-error-internet-d ow n-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓ ✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓ ✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connec-tion String</td>
<td>Set from Set SQL-State-ment</td>
<td>Set from Pro-viders File</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standard-ize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


2.2.46 Provider Rss20: RSS version 2.0.

RSS version 2.0.

Code for use in settings.xml: Rss20

Alias: rss

Status: Production

Available in Editions: Paid, Open Data, Community


**Provider Attributes**

The following provider attributes are available for Rss20:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connec-tion String</th>
<th>Set from Set SQL-State-ment</th>
<th>Set from Pro-viders File</th>
</tr>
</thead>
<tbody>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>tainers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>result-set-cache</td>
<td>Action: provide 'empty' to empty.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-metadata-cache</td>
<td>Whether to use the metadata calculated previously Has only practical use during development on a XML provider.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-result-cache</td>
<td>Whether to use result sets from previous queries that can answer the current query</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>xml-directories</td>
<td>{res:itgen_provider_attribute_xml_directories_description}</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>xml-extension</td>
<td>{res:itgen_provider_attribute_xml_extension_description}</td>
<td>*.rss</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>xml-namespaces</td>
<td>Comma-separated list of namespace prefixes and their URI</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>


2.2.47 Provider Salesforce: Salesforce CRM and other applications.

Salesforce CRM and other applications.

Code for use in settings.xml: Salesforce

Alias: sf

Status: Production

Available in Editions: Paid

Technical Documentation: https://developer.salesforce.com
Non-technical Documentation: https://salesforce.com

**Provider Attributes**

The following provider attributes are available for Salesforce:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-client-id</td>
<td>The client ID is a unique identifier of your application. It is generated by registering an application.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-client-secret</td>
<td>The client secret is to be kept confidential. Such as a password for a login code, the client secret is the confidential part of an app identified by a client ID. It is needed during the OAuth2 Code Grant Flow together with the refresh token to get access.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-redirect-url</td>
<td>The redirect URI is the website a browser session is redirected to after the OAuth2 authentication process has been completed.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-refresh-token</td>
<td>Refresh Token is a security token for the OAuth2 Code Grant Flow. With a Refresh Token and client secret you can retrieve a renewed access token to access protected resources. A Refresh Token and client secret must be stored securely since once compromised allows access to your protected resources.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-429-errors</td>
<td>Ignore HTTP 429 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Length in ms of a partition-based rate limit across all slots.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit across all slots.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Code and Description

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


#### 2.2.48 Provider Sftp: Secure FTP.

Secure FTP.

Code for use in settings.xml: Sftp

Alias: sftp

Status: Production

Available in Editions: Paid

#### 2.2.49 Provider SilverEssence: SilverEssence.

SilverEssence.

Code for use in settings.xml: SilverEssence

Alias: silver

Status: Non-production

Available in Editions: Paid

#### 2.2.50 Provider Slack: Slack

Slack

Code for use in settings.xml: Slack

Alias: Slack

Status: Non-production

Available in Editions: Paid

Technical Documentation: [https://api.slack.com](https://api.slack.com)

#### 2.2.51 Provider Snelstart: Snelstart (NL) information.

Snelstart (NL) information.

Code for use in settings.xml: Snelstart

Alias: Snelstart

Status: Non-production

Available in Editions: Paid, Open Data, Community

Technical Documentation: [https://www.snelstart.nl/api/docs/](https://www.snelstart.nl/api/docs/)
## 2.2.52 Provider SqlServer: Microsoft SQL Server.

Microsoft SQL Server.

Code for use in settings.xml: SqlServer

Alias: mssql

Status: Production

Available in Editions: Paid

### Provider Attributes

The following provider attributes are available for SqlServer:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>bulk-insert-page-size-rows</td>
<td>Number of rows to insert per page when bulk inserting</td>
<td>1000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-timeout-sec</td>
<td>Number of seconds after which a bulk insert times out</td>
<td>300</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>command-timeout-sec</td>
<td>Number of seconds after which a command times out</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>connection-string-async-add</td>
<td>Should the 'Async' be added automatically to the connection string?</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>connection-string-async-value</td>
<td>Size of the Async to be added to the connection string.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>connection-string-multiple-active-result-sets-add</td>
<td>Should the 'MultipleActiveResultSets' be added automatically to the connection string?</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>connection-string-multiple-active-result-sets-value</td>
<td>Value of MultipleActiveResultSets to be added to the connection string.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-number-of-pooled-connections</td>
<td>Maximum number of concurrent pooled connections.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-sleep-acquire-pooled-connection-ms</td>
<td>Maximum time in ms to wait for acquiring a free connection from a pool of connections.</td>
<td>30000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-sleep-acquire-unpooled-connection-ms</td>
<td>Maximum time in ms to wait for acquire a free connection when there is no connection pooling.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>preferred-number-of-pooled-connections</td>
<td>Preferred number of concurrent pooled connections.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-bind-variable-in-list</td>
<td>Prefix for bind variables used in an IN-list</td>
<td>i</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-bind-variable-normal</td>
<td>Prefix for bind variables used in all cases except in an IN-list</td>
<td>w</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>prefix-renamed-columns</td>
<td>Prefix appended to columns whose names occur multiple times in the column list of a query</td>
<td>column</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**2.2.53 Provider StackExchange: StackExchange.**

StackExchange.

Code for use in settings.xml: StackExchange

Alias: StackExchange

Status: Production

Available in Editions: Paid, Open Data, Community

Technical Documentation: [https://api.stackexchange.com](https://api.stackexchange.com)

Non-technical Documentation: [https://stackexchange-apps.com](https://stackexchange-apps.com)

**Provider Attributes**

The following provider attributes are available for StackExchange:
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-client-id</td>
<td>The client ID is a unique identifier of your application. It is generated by registering an application.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-client-secret</td>
<td>The client secret is to be kept confidential. Such as a password for a logon code, the client secret is the confidential part of an app identified by a client ID. It is needed during the OAuth2 Code Grant Flow together with the refresh token to get access.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-redirect-url</td>
<td>The redirect URI is the website a browser session is redirected to after the OAuth2 authentication process has been completed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-refresh-token</td>
<td>Refresh Token is a security token for the OAuth2 Code Grant Flow. With a Refresh Token and client secret you can retrieve a renewed access token to access protected resources. A Refresh Token and client secret must be stored securely since once compromised allows access to your protected resources.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>authentication-key</td>
<td>The authentication key of the app on StackApps.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow n-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mxed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\In vantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>---------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

2.2.54 Provider SwiftMt940Rabo: Swift MT940 Rabobank.

Swift MT940 Rabobank.

Code for use in settings.xml: SwiftMt940Rabo
Alias: mt940rabo
Status: Non-production
Available in Editions: Paid

### Provider Attributes

The following provider attributes are available for SwiftMt940Rabo:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>directories</td>
<td>{res:itgen_provider_attribute_directories_description}</td>
<td>c:\temp</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>extension</td>
<td>{res:itgen_provider_attribute_extension_description}</td>
<td>*.swi</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>log-directory</td>
<td>Directory where the text messages are stored</td>
<td>c:\temp</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>log-text</td>
<td>Whether to log the text messages exchanged to disk</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Code Description Default Value Set from Set from Set from
Set from
Connection SQL- Statement Providers File

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Connection String</th>
<th>SQL-Statement</th>
<th>Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


#### 2.2.55 Provider Teamleader: Teamleader CRM.

Teamleader is a cloud solution for customer management. Teamleader includes CRM as well as project and tickets. Teamleader can be extended by defining custom fields on several core concepts.

**Code for use in settings.xml:** Teamleader

**Alias:** teamleader

**Abbreviation:** tlr

**Status:** Production

**Available in Editions:** Paid

**String-comparison is Case-sensitive:** true

**Use Catalog in Full Name:** true

**Use Schema in Full Name:** true

**Updated:** 10-09-2020 00:09 using Invantive SQL version 20.1.206-BETA+2915.

**Technical Documentation:** [http://apidocs.teamleader.be/](http://apidocs.teamleader.be/)

### Documentation

**Authentication**

Authentication can be done using one of the following two alternatives:

1. Using the user log on code and password also used on the Teamleader website.
2. Using an API group and API secret.

Authentication using user log on code and password is recommended for general use. The user must have access to all functionality since by default all so-called 'scopes' are requested. The scopes can be manually entered to be able to log in with a restricted accounts. Please provide a space-separated list chosen from companies, contacts, deals, departments, events, invoices, products, projects, quotations, subscriptions, tickets, todos, users.

The API group and secret can be found on https://app.teamleader.eu/apiwebhooks.php?show_key.

### Usage Limits
Invantive SQL executes API calls to retrieve and upload data. The number of API calls allowed per 5 seconds is 25. Invantive SQL ensures that within your session the number of calls allowed per hour is not exceeded.

To get an impression of how Invantive SQL translates into API calls, please query the data dictionary view 'sessionios', such as with 'select * from sessionios@datadictionary'.

Custom Fields

Custom fields for which one value can be entered on an object are added to the table representing the object. For instance, a custom field 'needsaudit' on 'project', will be added as a column 'c_needsaudit' on the 'project' table. The name of the additional column directly derives from the custom field name. Almost all changes, including adding numbers or reading characters, will result in the data model being changed.

Custom fields which can have no, one or multiple values ('set' custom fields) are reflected in the data model by tables with a name constructed of the object name, an underscore plus the name of the custom field. For example, a custom field named 'Multiple Selection' on 'Task' will add a table 'task_multipleselection' to the data model.

Custom fields are unique to each Teamleader environment. When the existence of specific custom field is not guaranteed, please use generic solutions like the tables 'CustomFieldDefinitions', 'custom_fields', 'custom_field_options', 'custom_field', 'CustomFields_All', 'Custom_Field_Types' and their object-specific custom field value tables like 'ticket_custom_field_values_by_id'.

Connector Attributes

The Teamleader connector can be configured using the following attributes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Connectors File</th>
<th>Set from Log On</th>
</tr>
</thead>
<tbody>
<tr>
<td>force-custom-field-to-string</td>
<td>Whether to force custom field values shown in columns to be represented as string instead of the registered type.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>scopes</td>
<td>Space-separated and case-sensitive list of scope for OAuth only. Leave empty for all.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>api-client-id</td>
<td>The client ID is a unique identifier of your application. It is generated by registering an application.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-client-secret</td>
<td>The client secret is to be kept confidential. Such as a password for a logon code, the client secret is the confidential part of an app identified by a client ID. It is needed during the OAuth2 Code Grant Flow together with the refresh token to get access.</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-refresh-token</td>
<td>Refresh Token is a security token for the OAuth2 Code Grant Flow. With a Refresh Token and client secret you can retrieve a renewed access token to access protected resources. A Refresh Token and</td>
<td>***</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL Statement</td>
<td>Set from Connectors File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>api-redirect-url</td>
<td>The redirect URI is the website a browser session is redirected to after the OAuth2 authentication process has been completed.</td>
<td></td>
<td>✅</td>
<td>✅</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-group-authentication</td>
<td>Use API group authentication when true. OAuth otherwise.</td>
<td></td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-scope</td>
<td>The scope to request an OAuth token for.</td>
<td></td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-token-url</td>
<td>The token URI is the OAuth2 endpoint to exchange tokens.</td>
<td></td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-delete-page-size-rows</td>
<td>Number of rows to delete per batch when bulk deleting</td>
<td>10000</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-bytes</td>
<td>Approximate maximum size in bytes of batch when bulk inserting</td>
<td>10000000</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>bulk-insert-page-size-rows</td>
<td>Number of rows to insert per batch when bulk inserting</td>
<td>250</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dowload-error-400-bad-request-max-tries</td>
<td>Maximum number of tries when OData server reports bad format during retrieval of data.</td>
<td>30</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dowload-error-400-bad-request-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.</td>
<td>5000</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dowload-error-400-bad-request-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.</td>
<td>60000</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dowload-error-400-bad-request-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries OData server reports that the API server is unavailable during retrieval of data.</td>
<td>2</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dowload-error-422-bad-request-max-tries</td>
<td>Maximum number of tries when OData server reports unprocessable entity during retrieval of data.</td>
<td>30</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dowload-error-422-bad-request-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when OData server reports unprocessable entity during retrieval of data.</td>
<td>5000</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dowload-error-422-bad-request-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when OData server reports unprocessable entity during retrieval of data.</td>
<td>60000</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dowload-error-422-bad-request-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries OData server reports unprocessable entity during retrieval of data.</td>
<td>2</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dowload-error-429-too-many-requests</td>
<td>Maximum number of tries when the website reports that too many requests have</td>
<td>10</td>
<td>✅</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL Statement</td>
<td>Set from Connectors File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>------</td>
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<td>---------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>max-tries</td>
<td>been made during a timeslot of one minute or one day.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>download-error-429-too-many-requests-sleep-initial-ms</td>
<td>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.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-429-too-many-requests-sleep-max-ms</td>
<td>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.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-429-too-many-requests-sleep-multiplier</td>
<td>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.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-502-server-unavailable-max-tries</td>
<td>Maximum number of tries when OData server reports a bad gateway during retrieval of data.</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-502-server-unavailable-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when OData server reports a bad gateway during retrieval of data.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-502-server-unavailable-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when OData server reports that a bad gateway during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-502-server-unavailable-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when OData server reports that a bad gateway during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-503-server-unavailable-max-tries</td>
<td>Maximum number of tries when OData server reports that the API server is unavailable during retrieval of data.</td>
<td>30</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-503-server-unavailable-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-503-server-unavailable-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when OData server reports that the API server is unavailable during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-503-server-unavailable-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when OData server reports that the API server is unavailable during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-504-gateway-timeout-max-tries</td>
<td>Maximum number of tries when the website reports a gateway timeout.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>download-error-504-gateway-timeout-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the website reports a gateway timeout.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
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<td>download-error-504-gateway-timeout-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the website reports a gateway timeout.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
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</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>--------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>dow nload-error-504-gateway-timeout-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the website reports a gateway timeout.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-argument-exception-max-tries</td>
<td>Maximum number of tries when an argument exception is returned when downloading a blob.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-argument-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when an argument exception is returned when downloading a blob.</td>
<td>1000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-argument-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when an argument exception is returned when downloading a blob.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-argument-exception-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when an argument exception is returned when downloading a blob.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-n-max-tries</td>
<td>Maximum number of retries when the Internet connection seems down during retrieval of data.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-io-exception-max-tries</td>
<td>Maximum number of retries when a network I/O connection failure occurs during retrieval of data.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-io-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when a network I/O connection failure occurs during retrieval of data.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-io-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when a network I/O connection failure occurs during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-io-exception-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when a network I/O connection failure occurs during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-json-exception-max-tries</td>
<td>Maximum number of retries when an invalid JSON body is returned.</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-json-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when an invalid JSON body is returned.</td>
<td>1000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-json-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when an invalid JSON body is returned.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-json-exception-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when an invalid JSON body is returned.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Connectors File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>download-error-other-exception-max-tries</td>
<td>Maximum number of tries when an unqualified error occurs during retrieval of data.</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-other-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when an unqualified error occurs during retrieval of data.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-other-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when an unqualified error occurs during retrieval of data.</td>
<td>30000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-other-exception-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when an unqualified error occurs during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-socket-exception-max-tries</td>
<td>Maximum number of tries when the network connection is forcibly dropped during retrieval of data.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-socket-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the network connection is forcibly dropped during retrieval of data.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-socket-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the network connection is forcibly dropped during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-socket-exception-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the network connection is forcibly dropped during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-web-exception-max-tries</td>
<td>Maximum number of tries when a web connection failure occurs during retrieval of data.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-web-exception-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when a web connection failure occurs during retrieval of data.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-web-exception-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when a web connection failure occurs during retrieval of data.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-web-exception-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when a web connection failure occurs during retrieval of data.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-web-not-implemented-max-tries</td>
<td>Maximum number of tries when the connection reports not implemented.</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-web-not-implemented-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the connection reports not implemented.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-web-not-implemented-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the connection reports not implemented.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-web-not-implemented-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the connection reports not implemented.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-web-timeout-max-tries</td>
<td>Maximum number of tries when the connection reports a timeout.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
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<tr>
<td>-----------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>----------------------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>download-error-w eb-timeout-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the connection reports a timeout.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-w eb-timeout-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the connection reports a timeout.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-w eb-timeout-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the connection reports a timeout.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-w eb-unauthorized-max-tries</td>
<td>Maximum number of retries when the connection reports an unauthorized error.</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-w eb-unauthorized-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the connection reports an unauthorized error.</td>
<td>5000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-w eb-unauthorized-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the connection reports an unauthorized error.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>download-error-w eb-unauthorized-sleep-multiplicator</td>
<td>Multiplication factor for sleep between retries when the connection reports an unauthorized error.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (light) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-ignore-write-errors</td>
<td>Whether to ignore write errors to disk cache.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (light) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-401-errors</td>
<td>Ignore HTTP 401 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from</td>
<td>Set from</td>
<td>Set from</td>
<td>Set from</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------</td>
<td>----------</td>
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<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Connection</td>
<td>SQL-Statement</td>
<td>Connectors</td>
<td>Log On</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ignore-http-404-errors</td>
<td>Ignore HTTP 404 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ignore-http-422-errors</td>
<td>Ignore HTTP 422 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ignore-http-429-errors</td>
<td>Ignore HTTP 429 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ignore-http-500-errors</td>
<td>Ignore HTTP 500 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>ignore-http-502-errors</td>
<td>Ignore HTTP 502 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invalid-json-on-get-max-tries</td>
<td>Maximum number of tries when the JSON received on GET is invalid.</td>
<td>10</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invalid-json-on-get-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the JSON received on GET is invalid.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invalid-json-on-get-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the JSON received on GET is invalid.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invalid-json-on-get-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the JSON received on GET is invalid.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invalid-json-on-post-max-tries</td>
<td>Maximum number of tries when the JSON received on POST is invalid.</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invalid-json-on-post-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the JSON received on POST is invalid.</td>
<td>10000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invalid-json-on-post-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the JSON received on POST is invalid.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invalid-json-on-post-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the JSON received on POST is invalid.</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invantive-sql-correct-invalid-date</td>
<td>Whether to correct invalid dates.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>limit-partition-calls-left</td>
<td>Minimum number of remaining API calls on a partition towards a hard limit. When below, an error is raised.</td>
<td>500</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Connectors File</td>
<td>Set from Log On</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>---------------------------</td>
<td>--------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>log-native-calls-to-disk</td>
<td>Registers native calls to data container backend as disk files.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>log-native-calls-to-trace</td>
<td>Log native calls to data container backend on the trace.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>max-odata-filters</td>
<td>The maximum number of OData filter elements.</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-accepted</td>
<td>The maximum accepted URL length before raising an error.</td>
<td>8000</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>max-url-length-desired</td>
<td>The maximum desired URL length.</td>
<td>8000</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>metadata-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for re-use of metadata.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a partition-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>partition-slot-based-rate-limit-slots</td>
<td>Number of slots per partition-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>requested-page-size</td>
<td>Preferred number of rows to exchange per round trip; only effective on limited platforms such as AFAS Online</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-400-errors</td>
<td>Simulate HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-400-errors-percentage</td>
<td>Percentage of simulated HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-401-errors</td>
<td>Simulate HTTP 401 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-401-errors-percentage</td>
<td>Percentage of simulated HTTP 401 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-403-errors</td>
<td>Simulate HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-403-errors-percentage</td>
<td>Percentage of simulated HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-429-errors</td>
<td>Simulate HTTP 429 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-429-errors-percentage</td>
<td>Percentage of simulated HTTP 429 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>simulate-http-500-errors</td>
<td>Simulate HTTP 500 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Code and Description

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from</th>
<th>Set from</th>
<th>Set from</th>
<th>Set from</th>
</tr>
</thead>
<tbody>
<tr>
<td>simulate-http-500-errors-percentage</td>
<td>Percentage of simulated HTTP 500 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>simulate-http-502-errors</td>
<td>Simulate HTTP 502 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>simulate-http-502-errors-percentage</td>
<td>Percentage of simulated HTTP 502 errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>simulate-http-protocol-errors</td>
<td>Simulate HTTP protocol errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>simulate-http-protocol-errors-percentage</td>
<td>Percentage of simulated HTTP protocol errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>simulate-http-timeout-errors</td>
<td>Simulate HTTP timeout errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>simulate-http-timeout-errors-percentage</td>
<td>Percentage of simulated HTTP timeout errors when exchanging results with the OData endpoint.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Total length in ms across all slots of a slot-based rate limit.</td>
<td>6000</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td>21</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>use-batch-insert</td>
<td>Whether to use batch insert.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### 2.2.56 Provider TeamViewer: TeamViewer online assistance.

TeamViewer online assistance.

Code for use in settings.xml: TeamViewer
Alias: teamviewer
Status: Production
Available in Editions: Paid

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms)</td>
<td>30000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

2.2.57 Provider Teradata: Teradata data warehousing.

Teradata data warehousing.
Code for use in settings.xml: Teradata
Alias: teradata
Status: Production
Available in Editions: Paid
Additional Driver to install: [https://support.invantive.com/download-driver-teradata](https://support.invantive.com/download-driver-teradata)

2.2.58 Provider Ubl20: UBL version 2.0.

UBL version 2.0.
Code for use in settings.xml: Ubl20
Alias: ubl20
Status: Non-production
Available in Editions: Paid
2.2.59 Provider Ubl21: UBL version 2.1.
UBL version 2.1.
Code for use in settings.xml: Ubl21
Alias: ubl21
Status: Non-production
Available in Editions: Paid
Technical Documentation: http://docs.oasis-open.org/ubl/cs1-UBL-2.1/xsd/

2.2.60 Provider Vies: AutoTask service management.
AutoTask service management.
Code for use in settings.xml: Vies
Alias: vies
Status: Non-production
Available in Editions: Paid
Non-technical Documentation: http://severa.visma.com

2.2.61 Provider VirusTotal: VirusTotal.
VirusTotal.
Code for use in settings.xml: VirusTotal
Alias: virustotal
Status: Non-production
Available in Editions: Paid

2.2.62 Provider VismaSevera: Visma Severa project management.
Visma Severa project management.
Code for use in settings.xml: VismaSevera
Alias: severa
Status: Production
Available in Editions: Paid
Non-technical Documentation: http://severa.visma.com

Provider Attributes
The following provider attributes are available for VismaSevera:
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL of Vismia Server web service</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mxd.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms)</td>
<td>300000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms)</td>
<td>300000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>result-set-cache</td>
<td>Action: provide 'empty' to empty.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>----------------------------</td>
<td>----------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory to answer the current query</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses in memory</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-metadata-cache</td>
<td>Whether to use the metadata calculated previously Has only practical use during development on a XML provider.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-result-cache</td>
<td>Whether to use result sets from previous queries that can answer the current query</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


2.2.63 Provider WebService: Invantive Web Service HTTPS data protocol.
Invantive Web Service HTTPS data protocol.
Code for use in settings.xml: WebService
Alias: ws
Status: Production
Available in Editions: Paid

2.2.64 Provider Wikipedia: Wikipedia information.
Wikipedia information.
Status: Non-production
Available in Editions: Paid, Open Data, Community

Provider Attributes
The following provider attributes are available for Wikipedia:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>api-url</td>
<td>URL to access the API.</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>download-error-internet-dow-amin-max-tries</td>
<td>Maximum number of tries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from Set SQL-State- ment</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-initial-ms</td>
<td>Initial sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-max-ms</td>
<td>Maximum sleep in milliseconds between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>dow nload-error-internet-dow n-sleep-multiplier</td>
<td>Multiplication factor for sleep between retries when the Internet connection seems down during retrieval of data.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unter, Low er, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-compression-level</td>
<td>Compression level for the HTTP disk cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-directory</td>
<td>Directory where HTTP cache is stored.</td>
<td>C:\Users\gle3\Invantive\Cache</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-disk-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP disk cache.</td>
<td>2592000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-get-timeout-ms</td>
<td>HTTP GET timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-compression-level</td>
<td>Compression level for the HTTP memory cache, ranging from 1 (little) to 9 (intense). Default is 5.</td>
<td>5</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-memory-cache-max-age-sec</td>
<td>Maximum acceptable age in seconds for use of data in the HTTP memory cache.</td>
<td>14400</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>http-post-timeout-ms</td>
<td>HTTP POST timeout (ms).</td>
<td>300000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-400-errors</td>
<td>Ignore HTTP 400 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ignore-http-403-errors</td>
<td>Ignore HTTP 403 errors when exchanging results with the OData endpoint.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>join-set-points-per-request</td>
<td>Maximum number of values in a request when executing a join set.</td>
<td>60</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td>Default Value</td>
<td>Set from Connection String</td>
<td>Set from SQL-Statement</td>
<td>Set from Providers File</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-----------------------------</td>
<td>------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored on disk to answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-disk-cache-write</td>
<td>Whether to memorize HTTP responses on disk.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-read</td>
<td>Whether to use HTTP responses from previous queries stored in memory that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-http-memory-cache-write</td>
<td>Whether to memorize HTTP responses from previous queries for use by future queries.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


**2.2.65 Provider Wmi: Windows Management Instrumentation.**

Windows Management Instrumentation.

Code for use in settings.xml: Wmi

Alias: wmi

Status: Production

Available in Editions: Paid

**2.2.66 Provider Xaa30: XML Auditfile Afrekensystemen version 3.0.**

XML Auditfile Afrekensystemen version 3.0.

Code for use in settings.xml: Xaa30

Alias: xaa

Status: Production

Available in Editions: Paid

**2.2.67 Provider Xaa31: XML Auditfile Afrekensystemen version 3.1.**

XML Auditfile Afrekensystemen version 3.1.

Code for use in settings.xml: Xaa31

Alias: xaa
Provider Attributes

The following provider attributes are available for Xaa31:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL-Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>result-set-cache</td>
<td>Action: provide 'empty' to empty.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-slots</td>
<td>Number of slots of a slot-based rate limit. Null means no slot-based rate limit</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-metadata-cache</td>
<td>Whether to use the metadata calculated previously. Has only practical use during development on a XML provider.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-result-cache</td>
<td>Whether to use result sets from previous queries that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### 2.2.68 Provider Xaf10: XML Auditfile Financieel version 1.0.

XML Auditfile Financieel version 1.0.

Code for use in settings.xml: Xaf10

Alias: xaf

Status: Production

Available in Editions: Paid

Technical Documentation: [https://www.oswo.nl/pluginfile.php/13189/mod_folder/content/0/AuditfileFinancieelVersie1.0.zip](https://www.oswo.nl/pluginfile.php/13189/mod_folder/content/0/AuditfileFinancieelVersie1.0.zip)


### 2.2.69 Provider Xaf30: XML Auditfile Financieel version 3.0.

XML Auditfile Financieel version 3.0.

Code for use in settings.xml: Xaf30

Alias: xaf

Status: Production

Available in Editions: Paid

Technical Documentation: [https://www.oswo.nl/pluginfile.php/13189/mod_folder/content/0/XAF_V3.0.zip](https://www.oswo.nl/pluginfile.php/13189/mod_folder/content/0/XAF_V3.0.zip)


### 2.2.70 Provider Xaf31: XML Auditfile Financieel version 3.1.

XML Auditfile Financieel version 3.1.

Code for use in settings.xml: Xaf31

Alias: xaf

Status: Production

Available in Editions: Paid
2.2.71 Provider Xaf32: XML Auditfile Financieel version 3.2.

XML Auditfile Financieel version 3.2.

Code for use in settings.xml: Xaf32

Alias: xaf

Status: Production

Available in Editions: Paid

Technical Documentation: http://www.ictplaza.nl/uploads/xml_auditfiles/xmlfinancieel/20140402_AuditfileFinancieelVersie_3_2.zip


Provider Attributes

The following provider attributes are available for Xaf32:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>result-set-cache</td>
<td>Action: provide 'empty' to empty.</td>
<td></td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rewrite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
### Provider Attributes

The following provider attributes are available for Xas70:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from Set SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rewrite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-metadata-cache</td>
<td>Whether to use the metadata calculated previously Has only practical use during development on a XML provider.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-result-cache</td>
<td>Whether to use result sets from previous queries that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>xml-directories</td>
<td>{res:itgen_provider_attribute_xml_directories_description}</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>xml-extension</td>
<td>{res:itgen_provider_attribute_xml_extension_description}</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>xml-namespaces</td>
<td>Comma-separated list of namespace prefixes and their URI</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>force-case-sensitive-identifiers</td>
<td>Consider identifiers as case-sensitive independent of the platform capabilities.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>forced-casing-identifiers</td>
<td>Forced casing of identifiers. Choose from Unset, Lower, Upper and Mixed.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

2.2.72 Provider Xas70: XML Auditfile Salaris version 7.0.

XML Auditfile Salaris version 7.0.

Code for use in settings.xml: Xas70

Alias: xas

Status: Production

Available in Editions: Paid

Technical Documentation: [https://www.oswo.nl/pluginfile.php/13189/mod_folder/content/0/AuditfileFinancieelVersie1.0.zip](https://www.oswo.nl/pluginfile.php/13189/mod_folder/content/0/AuditfileFinancieelVersie1.0.zip)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Default Value</th>
<th>Set from Connection String</th>
<th>Set from SQL Statement</th>
<th>Set from Providers File</th>
</tr>
</thead>
<tbody>
<tr>
<td>invantive-sql-forward-filters-to-data-containers</td>
<td>Whether to forward filters to data containers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-sql-shuffle-fetch-results-data-containers</td>
<td>Whether to shuffle results fetched from data containers.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>invantive-use-cache</td>
<td>Whether to cache the results of a query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>maximum-length-identifiers</td>
<td>Non-default maximum length in characters of identifier names.</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>pre-request-delay-ms</td>
<td>Pre-request delay in milliseconds per request.</td>
<td>0</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>Maximum number of parallel data requests from individual partitions on the data container.</td>
<td>32</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>result-set-cache</td>
<td>Action: provide ’empty’ to empty.</td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms</td>
<td>Length in ms of a slot-based rate limit.</td>
<td>60000</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers</td>
<td>Rew rite all identifiers to the preferred standards as configured by standardize-identifiers-casing and maximum-length-identifiers.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>standardize-identifiers-casing</td>
<td>Rew rite all identifiers to the recommended standard platform-specific casing when changing a data model on a case-dependent platform.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>trace-native-calls</td>
<td>Trace native calls to data container backend.</td>
<td>False</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-metadata-cache</td>
<td>Whether to use the metadata calculated previously. Has only practical use during development on a XML provider.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>use-result-cache</td>
<td>Whether to use result sets from previous queries that can answer the current query.</td>
<td>True</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>xml-directories</td>
<td>(res:itgen_provider_attribute_xml_directories_description)</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>xml-extension</td>
<td>(res:itgen_provider_attribute_xml_extension_description)</td>
<td>*.xas</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>xml-namespaces</td>
<td>Comma-separated list of namespace prefixes and their URI</td>
<td>xas=<a href="http://www.audit-files.nl/XAS/7">http://www.audit-files.nl/XAS/7</a></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>


2.2.73 Providers

The providers described here are available on all platforms.
2.3 Configuration

2.3.1 Network

The list of available databases is maintained in so-called 'settings.xml' files. These file names all start with 'settings' and end with '.xml'.

Interactive and OS-Applications

A default file 'settings.xml' is placed in the user's home directory folder 'Invantive' during discovery of databases in interactive or OS-applications. Additional settings files may be placed in this folder too.

Web Applications

For web applications, the folder App_Data/Config must contain the settings.xml files. Additional settings files may be placed in this folder too.

Additional Locations

Using the environment variable INVANTIVE_SETTINGS_FILE_PATH, you can specify a different file name and path for the default settings.xml file.

Settings.xml is not searched for at other locations.

Structure

The settings files all have the following structure in XML format; The full specification is available in xsd format and online.

2.3.2 License

The license key controls the availability of functionality, providers and limits of your Invantive products. A license key is associated with a license contract. A license contract has a unique code consisting of a 'L' plus a number. Each license contract can have multiple license keys.
License keys are automatically revoked when they have not been used for three months.

When a license contract concerns a subscription, the contract is automatically ended when it has not been used for three months.

**Interactive and OS-Applications**

For interactive and OS-applications, a file named ‘invantive.lic’ is searched within the user’s home directory folder ‘Invantive’. The license key for use of Invantive products is normally stored within the product’s configuration files after loading it through the user interface of the product.

**Web Applications**

For web applications, a file named ‘invantive.lic’ is searched within the folder 'App_Data/Config'.

**Additional Locations**

Using the environment variable INVANTIVE_LICENSE_FILE_PATH, you can specify a deviating location for the default license file 'invantive.lic'.

### 2.3.3 Logging
#### 2.3.3.1 Trace

During use of the products, a continuous stream of relevant trace messages is being sent to the trace listeners. On Microsoft Windows, you can use the Microsoft program 'dbgview.exe' to see the trace messages.

Trace options are only available when the environment variable 'INVANTIVE_TRACE_ACTIVE' is set to any non-empty value.

The trace messages are also stored in trace files when the environment variable 'INVANTIVE_TRACE_TO_FILE' is set to 'true'.

The default location of the trace files is the folder for temporary files on interactive and OS-applications. The default location for web applications is 'App_Data\Trace'. An alternative folder for trace files can be specified by setting the environment variable 'INVANTIVE_TRACE_FOLDER'.

A limited amount of information is sent to the trace when an error occurs. The call stack and the natural key can be sent to trace by setting the environment variable 'INVANTIVE_TRACE_OWN_EXCEPTIONDETAILS' to 'true'.

**Log to Amazon CloudWatch**

The trace can be logged to Amazon CloudWatch by configuring the following environment variables:

- INVANTIVE_TRACE_TO_CLOUDWATCH: change to True to activate logging to CloudWatch
- INVANTIVE_TRACE_CLOUDWATCH_ACCESS_KEY: the access key as generated on Amazon.
- INVANTIVE_TRACE_CLOUDWATCH_SECRET_KEY: the corresponding secret key.
- INVANTIVE_TRACE_CLOUDWATCH_REGION: the geographical region to log the messages.
• **INVANTIVE_TRACE_CLOUDWATCH_GROUP**: the log group to use for logging.

The identity associated with the access key must allow logging to CloudWatch.

Amazon CloudWatch logging is rate limited. Messages may not be logged during periods of intensive activity.

The log format is JSON-based as shown:

![CloudWatch log entry](image)

**Microsoft Power BI**

When used in combination with Microsoft Power BI, please note that Power BI tries to disable all trace logging by third party drivers. Invantive SQL has limited tracing available through Power BI. To activate: in Power BI go to 'Options and Settings', then 'Options' and choose 'Diagnostics' in the Global group. Place a checkmark next to 'Enable tracing'. This setting will remain effective till you restart Microsoft Power BI.

**Direct Trace**

Trace messages generated by Invantive can also be logged to file outside the Microsoft .NET trace mechanism. This is called "direct trace".

The advantages of direct trace are:

- Direct trace starts very early in program execution, even before the normal trace mechanism is activates. It therefore allows analysis of start-up problems.

- Direct trace works independent of the normal trace mechanism. It is therefore available even when the environment manages Microsoft .NET trace, such as with Power BI.

The disadvantages of direct trace are:

- The use of direct trace reduces performance significantly. Therefore only enable direct trace when needed.

To activate direct trace, please set the environment variable 'INVANTIVE_DIRECT_TRACE_FILE_PATH' to the file path of the intended log file.

It is recommended to include the placeholder '{PID}' in the file name when you expect to run multiple OS-processes with direct trace.

A commonly used setting for INVANTIVE_DIRECT_TRACE_FILE_PATH is `c:\temp\invantive-direct-trace-{PID}.log`. 
Mac OSX and Linux

Set the environment variable `COMPlus_DebugWriteToStdErr` to write trace messages to the console of Microsoft .NET Core applications:

```bash
export COMPlus_DebugWriteToStdErr=1
```

Note that the Microsoft .NET Core implementation on Mac OSX and Linux are restrained in the default stack size. On StackOverflowException such as with Exact Online, please increase stacksize first using:

```bash
export COMPlus_DefaultStackSize=10000000
```

2.3.3.2 Execution Log

Every completed execution of an Invantive product appends an entry to the local execution log. The execution log is in XML-format and located by default at `%USERPROFILE%\executionlog.xml`.

The name and location of the execution log can be altered by placing the full path and file name in the environment variable `INVANTIVE_EXECUTION_LOG_FILE`.

The root tag `EXECUTIONLOGS` contains an `EXECUTIONLOG` for every execution once finished. The following elements are available:

- `VERSION`: the record format, always '1'.
- `MESSAGEUID`: the UID of the message as registered on Invantive Cloud.
- `IIID`: the Invantive Installation ID of the device.
- `SESSIONID`: the ID of the session.
- `LICENSECODE`: the code of the subscription contract.
- `LICENSEKEYID`: the numeric ID of the license key.
- `MACHINENAME`: the name of the device.
- `EXECUTABLENAME`: the name and path of the executable.
- `APPLICATIONNAME`: the name of the Invantive application.
- `APPLICATIONVERSION`: the version of the Invantive application.
- `USERNAME`: the name of the operating system user.
- `PROCESSID`: the ID of the OS process.
- `STARTTIMEUTC`: the start time of the process (UTC).
- `ENDTIMEUTC`: the end time of the process (UTC).
- `EXITCODE`: the exit code of the process.
- `EXITLEVEL`: the textual description of the exit code.
- `EXITMESSAGECODE`: the message code associated with the execution exit.
- `ISHEADLESS`: whether the process ran headless.
- `COMPUTERMANUFACTURER`: the name of the device’s manufacturer.
• COMPUTERMODEL: the model of the device.
• OSVERSION: the version of the operating system.
• PHYSICALMEMORYINBYTES: the number of bytes in the physical memory.

2.3.4 Debugging
Invantive software products contain a number of features to aid analysis of problems.

2.3.4.1 Translations
During use of the products, the user interface is adapted to the user interface language based upon the environment.

The translation involves replacing so-called "resource codes" by their translation.

The translation can be disabled by setting the environment variable 'INVANTIVE_NO_TRANSLATE' to a non-empty value.

3 Invantive SQL for Windows
The Windows-specific features of Invantive SQL are documented in this section.

3.1 Internal Consistency Checks
Invantive SQL executes many internal consistency to ensure correctness of the results. Some of these consistency checks are only done during testing phases for reasons such as performance. These checks are automatically checked on testing environments and excluded on production environments.

However, during test or production use you can explicitly disable or enable these checks by setting environment variables to the value 'true' or 'false'. The checks can individually be disabled or enabled, or all together.

To explicitly enable all consistency checks, set the environment variable INVANTIVE_CHECK_ALL to true. To explicitly disable all consistency checks, set the environment variable INVANTIVE_CHECK_ALL to false.

First determine with help of support the message code to explicitly enable or disable a consistency check. Then set the environment variable INVANTIVE_CHECK_<message code> to the correct value.
Index

- A -
Abs 6
Acos 6
Add_months 6
Alias 211
All 6
AllowConnectionPooling 211
AllowConnectionStringRewrite 211
Alter 6
Amazon 212
And 6
Anonymize 6
api-client-id 115, 125, 181, 186, 190
api-client-secret 115, 125, 181, 186, 190
api-group-authentication 190
api-redirect-url 115, 125, 181, 186, 190
api-refresh-token 115, 125, 181, 186, 190
api-scope 190
api-token-url 115, 190
api-url 96, 111, 115, 125, 127, 140, 142, 158, 160, 168, 170, 172, 178, 181, 186, 190, 201, 203
App_Da\Config 211
App_Da\Trace 212
application-prefix-facts 103
application-prefix-history 103
application-prefix-repository 103
Approach 6
Are 6
As 6
Asc 6
Ascii 6
Asin 6
Atan 6
Atan2 6
atom 96
Atom10 96
Attach 6
Attach to 6
authentication-key 186
AuthenticationMode 211
Auto 6
autotask 96
Avg 6
AWS 212

- B -
backing-bulk-insert-page-size-bytes 103
backing-bulk-insert-page-size-rows 103
backing-bulk-insert-timeout-sec 103
backing-command-timeout-sec 103
backing-connection-string 103
backing-force-case-sensitive-identifiers 103
backing-forced-casing-identifiers 103
backing-maximum-length-identifiers 103
backing-maximum-number-of-pooled-connections 103
backing-maximum-sleep-acquire-pooled-connection-milliseconds 103
backing-maximum-sleep-acquire-unpooled-connection-milliseconds 103
backing-minimum-connection-timeout-sec 103
backing-preferred-number-of-pooled-connections 103
backing-provider 103
backing-sql-server-connect-retry-count 103
backing-sql-server-connect-retry-interval-sec 103
backing-standardize-identifiers 103
backing-standardize-identifiers-casing 103
Base64_decode 6
Base64_encode 6
Begin 6
Begin transaction 6
beta-compress-facts-on-disk 103
beta-encrypt-facts-on-disk 103
beta-store-facts-in-database 103
beta-store-facts-on-disk 103
beta-use-facts-in-database 103
beta-use-facts-on-disk 103
Between 6
Bfile 6
Bigint 6
Bigserial 6
Billing 1
Bit 6
Bit_length 6
Blob 6
Bool 6
Boolean 6
Bpchar 6
Bulk 6

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bulk-insert-page-size-rows 103, 108, 115, 144, 154
160, 177, 185, 190
bulk-insert-timeout-sec 185
By 6
Byte 6
Bytea 6

-C-

cache 6, 103
cache-folder 103
Camel 6
Case 6
cbsnl 96
Ceil 6
Char 6
Character 6
Chr 6
Class 211
Clob 6
CloudWatch 212
Coalesce 6
Code 6
Column 6
Columns 6
command-timeout-sec 156, 174, 177, 185
Comment 6, 211
Commit 6
company 127
Compatibility 4
COMPlus_DebugWriteToStdErr 212
COMPlus_DefaultStackSize 212
Compress 6
Compression 211
Concat 6
Concatenate 6
Connectionstring 211
connection-string 108
connection-string-async-add 185
connection-string-async-value 185
connection-string-multiple-active-result-sets-add 185
connection-string-multiple-active-result-sets-value 185
connection-string-self-tuning-add 174
connection-string-self-tuning-value 174
connection-string-statement-cache-size-add 174
connection-string-statement-cache-size-value 174
Connector 211
Consistency 215
Contract 6
collection 98

-D-

Data 6
Data Cache 103
Data container 4, 211
Data Dictionary 108
Database 4, 177, 211
DataCache 103
DataCacheConnectionString 211
DataDictionary 4, 108
DataDictionaryConnectionString 211
Date_trunc 6
Dateadd 6
Datepart 6
Datetime 6
Datet imeoffset 6
Day 6
Dayofweek 6
Dayofyear 6
db2 132
dd 108
Debug 215
Dec 6
Decimal 6
Declare 6
Default 6, 211
DefaultPassword 211
default-skip-client-side-cacheable 103
default-use-ods 103
DefaultUserLogonCode 211
Delete 6
delete-number-table-partition-versions-per-group 103
Dense_rank 6
Desc 6
Description 211
development-use-http-disk-cache 103
Direct trace 212
directories 189
Distinct 6
Distributed SQL 4
docc 111
DocumentCloud 111
Double 6
Double_metaphone 6
Double_metaphone_alt 6
Download 6
download-error-400-bad-request-max-tries 115, 190
download-error-400-bad-request-sleep-initial-ms 115, 190
download-error-400-bad-request-sleep-max-ms 190
download-error-400-bad-request-sleep-multiplicator 115, 190
download-error-422-bad-request-max-tries 190
download-error-422-bad-request-sleep-initial-ms 115, 190
download-error-422-bad-request-sleep-max-ms 190
download-error-422-bad-request-sleep-multiplicator 115, 190
download-error-429-too-many-requests-max-tries 115, 190
download-error-429-too-many-requests-sleep-initial-ms 115, 190
download-error-429-too-many-requests-sleep-max-ms 190
download-error-429-too-many-requests-sleep-multiplicator 115, 190
download-error-502-server-unavailable-max-tries 115, 190
download-error-502-server-unavailable-sleep-initial-ms 115, 190
download-error-502-server-unavailable-sleep-max-ms 190
download-error-502-server-unavailable-sleep-multiplicator 115, 190
download-error-503-server-unavailable-max-tries 115, 190
download-error-503-server-unavailable-sleep-initial-ms 115, 190
download-error-503-server-unavailable-sleep-max-ms 190
download-error-503-server-unavailable-sleep-multiplicator 115, 190
download-error-504-gateway-timeout-max-tries 115, 190
download-error-504-gateway-timeout-sleep-initial-ms 115, 190
download-error-504-gateway-timeout-sleep-max-ms 190
download-error-504-gateway-timeout-sleep-multiplicator 115, 190
download-error-argument-exception-max-tries 115, 190
download-error-argument-exception-sleep-initial-ms 115, 190
download-error-argument-exception-sleep-max-ms 115, 190
download-error-argument-exception-sleep-multiplicator 115, 190
download-error-internet-down-max-tries 96, 111, 115, 125, 127, 140, 142, 158, 168, 170, 172, 178, 181, 186, 190, 203
download-error-internet-down-sleep-initial-ms 96, 111, 115, 125, 127, 140, 142, 158, 168, 170, 172, 178, 181, 186, 190, 203
download-error-internet-down-sleep-max-ms 96, 111, 115, 125, 127, 140, 142, 158, 168, 170, 172, 178, 181, 186, 190, 203
download-error-internet-down-sleep-multiplicator 96, 111, 115, 125, 127, 140, 142, 158, 168, 170, 172, 178, 181, 186, 190, 203
download-error-sleep-duration-max-tries 115, 190
download-error-sleep-duration-sleep-initial-ms 115, 190
download-error-sleep-duration-sleep-max-ms 115, 190
download-error-sleep-duration-sleep-multiplicator 115, 190
download-error-web-exception-max-tries 115, 190
download-error-web-exception-sleep-initial-ms 115, 190
download-error-web-exception-sleep-max-ms 115, 190
download-error-web-exception-sleep-multiplicator 115, 190
download-error-web-not-implemented-max-tries 115, 190
download-error-web-not-implemented-sleep-initial-ms 115, 190
download-error-web-not-implemented-sleep-max-ms 115, 190
download-error-web-not-implemented-sleep-multiplicator 115, 190
download-error-web-timeout-max-tries 115, 190
download-error-web-timeout-sleep-initial-ms 115, 190
download-error-web-timeout-sleep-max-ms 115, 190
download-error-web-timeout-sleep-multiplicator 115, 190
download-error-web-unauthorized-max-tries 115, 190
download-error-web-unauthorized-sleep-initial-ms 115, 190
download-error-web-unauthorized-sleep-max-ms 115, 190
download-error-web-unauthorized-sleep-multiplicator 115, 190
Drop 6
drop-backlog-factor 103
dropbox 112
Droppable 6
Dropped 6
dummy 113
DynamicsCrm 114
dyncrm 114

- E -

EBNF-grammar 3
EcbExchangeRates 114
ecbexref 114
edi 114
edi-extension 114
Edifact 114
edi-input-directories 114
edi-output-directory 114
Editability 211
Else 6
Elsif 6
EnableRequestLogging 211
Encoding 211
EncryptedConnectionString 211
EncryptedDataCacheConnectionString 211
EncryptedDataDictionaryConnectionString 211
encrypt-http-disk-cache 115
End 6
Environment variable 1, 211, 212, 215
environment-code 152
environment-prefix-all 103
environment-prefix-history 103
environment-prefix-logical-view 103
environment-prefix-repository 103
For 6
Exact Online 115
ExactOnlineAll 115
execute 189
F-expect 6
Execute 6
Execution hint 6
Exp 6
Failover 211
False 6
Feed 6
File 211
Float 6
Float4 6
Float8 6
Floor 6
Folder 2
For 6
Force 6
force-case-sensitive-identifiers 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
force-custom-field-to-string 190
forced-casing-identifiers 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
forced-casing-logical-view-column-name 103
forced-casing-logical-view-name 103
ForceDefault 211
Forwarded 6
forwarding-outgoing-messages-delete-max-runtime-sec 103

- F -

facebook 125
facts-delete-page-size-characters 103
facts-delete-page-size-rows 103
facts-insert-page-size-rows 103
Failover 211
False 6
Feed 6
File 211
Float 6
Float4 6
Float8 6
Floor 6
Folder 2
For 6
Force 6
For every 6
for every-case-sensitive-identifiers 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
for every-custom-field-to-string 190
for every-forced-casing-identifiers 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
for every-forced-casing-logical-view-column-name 103
for every-forced-casing-logical-view-name 103
force-case-sensitive-identifiers 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
force-custom-field-to-string 190
for every-forced-casing-identifiers 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
for every-forced-casing-logical-view-column-name 103
for every-forced-casing-logical-view-name 103
forwarded-outgoing-messages-delete-max-runtime-sec 103

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Index 220

forwarded-incoming-messages-delete-page-size-rows 103
Free 3
Fresh 6
darkdesk 127
Front 6
Front_unixtime 6
frontenduser 2
FTP 130
Full 6

G

garbage-collection-physical-memory-load-threshold 103
garbage-collection-replication-interval-count 103
garbage-collection-replication-minimum-interval-sec 103
Getdate 6
Getutcdate 6
GitLab 132
Grammar 3
graph 156
Group 6, 211
Group function 5
Guid 6

H

hide-empty-columns 115
Hint 6
Hour 6
Http_disk_cache 6
Http_memory_cache 6
http-disk-cache 115
http-disk-cache-ignore-write-errors 108, 160, 190
http-disk-cache-write-error 108, 160, 190
http-get-timeout-ms 96, 111, 115, 125, 127, 140, 142, 152, 158, 160, 168, 170, 172, 178, 181, 186, 190, 201, 203
httpget 6
httpget_text 6
http-get-timeout-ms 96, 111, 115, 125, 127, 140, 142, 152, 158, 160, 168, 170, 172, 178, 181, 186, 190, 201, 203
http-memory-cache 115

(C) Copyright 2004-2020 Invantive Software B.V., the Netherlands. All rights reserved.
Int64 6
Int8 6
Integer 6
Intersect 6
Interval 6
Into 6
invalid-json-on-get-max-tries 115, 190
invalid-json-on-get-sleep-initial-ms 115, 190
invalid-json-on-get-sleep-max-ms 115, 190
invalid-json-on-post-max-tries 115, 190
invalid-json-on-post-sleep-initial-ms 115, 190
invalid-json-on-post-sleep-max-ms 115, 190
invalid-json-on-post-sleep-multiplicator 115, 190
invantive.lic 211
Invantive.Producer 138
INVANTI VE_ALLOWED_LANGUAGE_CODES 2
INVANTI VE_CHECK 215
INVANTI VE_CHECK_ALL 215
INVANTI VE_CHECK_OS_UPDATES 1
INVANTI VE_CHECK_SYSTEM_COMPATIBILITY 2
INVANTI VE_CONFIGURATION_BACKUP_FOLDER 2
INVANTI VE_CONFIGURATION_CACHE_FOLDER 2
INVANTI VE_CONFIGURATION_DATA_CACHE_CACHE_FOLDER 2
INVANTI VE_CONFIGURATION_DATABASES_FOLDER 2
INVANTI VE_CONFIGURATION_FOLDER 2
INVANTI VE_CONFIGURATION_HTTP_CACHE_FOLDER 2
INVANTI VE_CONFIGURATION_LOG_FOLDER 2
INVANTI VE_CONFIGURATION_PLUGINS_FOLDER 2
INVANTI VE_CONFIGURATION_PROVIDERS_FOLDER 2
INVANTI VE_CONFIGURATION_RSA_FOLDER 2
INVANTI VE_CONFIGURATION_TEMPLATES_FOLDER 2
INVANTI VE_CONFIGURATION_TRACE_FOLDER 2
INVANTI VE_CRYPTOGRAPHY 1
INVANTI VE_CS_BASE_URL 1
INVANTI VE_DIRECT_TRACE_FILE_PATH 212
INVANTI VE_EXECUTION_LOG_FILE 214
INVANTI VE_FORCED_OS 1
INVANTI VE_I8N_FOLDER 2
INVANTI VE_LICENSE_FILE_PATH 211
INVANTI VE_MAINTAIN_VSTO 1
INVANTI VE_NO_TRANSLATE 215
INVANTI VE_RSA 1
INVANTI VE_SETTINGS_FILE_PATH 211
INVANTI VE_TRACE_ACTIVE 212
INVANTI VE_TRACE_CLOUDWATCH_ACCESS_KEY 212
INVANTI VE_TRACE_CLOUDWATCH_GROUP 212
INVANTI VE_TRACE_CLOUDWATCH_REGION 212
INVANTI VE_TRACE_CLOUDWATCH_SECRET_KEY 212
INVANTI VE_TRACE_FOLDER 212
INVANTI VE_TRACE_OWN_EXCEPTIONDETAILS 212
INVANTI VE_TRACE_TO_CLOUDWATCH 212
INVANTI VE_TRACE_TO_FILE 212
invantive-sql-correct-invalid-date 108, 144, 154, 190
invantive-use-cache 96, 98, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 132, 140, 142, 144, 146, 152, 154, 156, 158, 160, 162, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
- J -
jira 140
Join 6
Join_set 6
join-set-points-per-request 96, 111, 115, 125, 127, 140, 142, 158, 168, 170, 172, 178, 181, 186, 190, 203
Jsondecode 6
Jsonencode 6
Jsontable 6
- K -
kadaster 142
KeePass 144
- L -
Label 6
Language 2
last 146
LastResort 146
Index

Left 6
Length 6
Levenshtein 6
License 1, 5, 6, 211
License contract 211
License key 211
Like 6
Limit 6
limit-partition-calls-left 115, 190
Lines 6
linkedin 151
Linux 212
Listagg 6
Ln 6
Load 6
Locking 6
Log 6
log-directory 189
Logical 6
log-native-calls-to-disk 103, 108, 144, 154, 190
log-native-calls-to-trace 103, 108, 144, 154, 190
log-text 189
Loket.nl 152
LoketNL 152
Longblob 6
Longtext 6
Loop 6
Low_cost 6
Lower 6
Lpad 6
Ltrim 6

- M -
Mac 212
magento 154
mail 154
mail-body-html 154
mail-from-email 154
mail-from-name 154
mail-priority 154
mail-reply-to-email 154
mail-reply-to-name 154
Maintain 6
Manual 211
Max 6
max-delete-facts-parallel 103
maximum-length-identifiers 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 153, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
maximum-length-logical-view-column-name 103
maximum-length-logical-view-name 103
maximum-number-of-pooled-connections 156, 174, 177, 185
maximum-sleep-acquire-pooled-connection-ms 156, 174, 177, 185
maximum-sleep-acquire-unpooled-connection-ms 156, 174, 177, 185
max-messages-per-customer-service-request 103
max-odata-filters 190
max-refreshes-parallel 103
max-url-length-accepted 103, 108, 115, 130, 144, 154, 160, 190
max-url-length-desired 103, 108, 115, 130, 144, 154, 160, 190
Md5 6
Mediumblob 6
Mediumint 6
Mediumtext 6
Mendix 156
Messages 6
Metadata 6
metadata-cache-max-age-sec 115, 190
Metaphone 6
Metaphone3 6
Metaphone3_alt 6
Microsecond 6
Microsoft Power BI 212
MicrosoftGraph 156
Millisecond 6
Min 6
minimum-length-text 160
Minus 6
Minute 6
Mod 6
Model 6
models 138
Money 6
Month 6
mssql 185
mt940rabo 189
My 6
mysql 156

- N -
Name 6, 211
nasa 158
Nchar 6
Network 211
Newid 6

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NMBRS 160
NmbrsNl 160
No_join_set 6
Normalize 6
Not 6
Now 6
Nowutc 6
npgsql-log 177
Null 6
Number 6
Number_to_speech 6
Numeric 6
Nvarchar 6
Nm 6

- O -
oauth 162
OAuth UI provider 162
Obsolete 6
Octet_length 6
odbc 168
Ods 6
Oid 6
On 6
Once 6
openarch 168
OpenExchangeRates 170
openextra 170
OpenSpendingNl 172
Operating system 1
Or 6
oracle 174
OracleManaged 174
Order 6, 211
orphaned-facts-delete-page-size-rows 103
os 4, 175
osnl 172
osuser 2
Outer 6
Overall 6

- P -
Paid 3
Parallel 6
Partition 4, 6
Passing 6
PasswordHint 211
PasswordLabel 211
PasswordMode 211
Path 6
paypal 176
Persistent 6
pg 177
Pi 6
port 130
Postfix 6
Postgresql 177
Power 6
Power BI 212
preferred-number-of-pooled-connections 156, 174, 177, 185
Prefix 6
prefix-bind-variable-in-list 156, 174, 177, 185
prefix-bind-variable-normal 156, 174, 177, 185
prefix-renamed-columns 156, 174, 177, 185
pre-request-delay-ms 96, 98, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 132, 140, 142, 144, 146, 152, 154, 156, 158, 160, 162, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
Procedural SQL 5
producer 138
Product 6
Provider 96, 108, 210, 211
Purge 6
purge-interval-event-log-entries-minutes 103

- Q -
Quarter 6
Quote_ident 6
Quote_literal 6
Quote_nullable 6

- R -
Raise_error 6
Rand 6
Random 6
Random_blob 6
Rank 6
Raw 6
rdwnl 178
Ready 6
Real 6
Recyclebin 6
<table>
<thead>
<tr>
<th>Index</th>
<th>224</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refresh 6</td>
<td>ShortDescription 211</td>
</tr>
<tr>
<td>Regexp_instr 6</td>
<td>silver 184</td>
</tr>
<tr>
<td>Regexp_replace 6</td>
<td>SilverEssence 184</td>
</tr>
<tr>
<td>Regexp_substr 6</td>
<td>simulate-http-400-errors 115, 190</td>
</tr>
<tr>
<td>Remainder 6</td>
<td>simulate-http-400-errors-percent 115, 190</td>
</tr>
<tr>
<td>RemoteConnectionName 211</td>
<td>simulate-http-401-errors 190</td>
</tr>
<tr>
<td>Repeat 6</td>
<td>simulate-http-401-errors-percent 190</td>
</tr>
<tr>
<td>Replace 6</td>
<td>simulate-http-403-errors 115, 190</td>
</tr>
<tr>
<td>requested-page-size</td>
<td>simulate-http-403-errors-percent 115, 190</td>
</tr>
<tr>
<td>requests-parallel-max</td>
<td>simulate-http-429-errors 115, 190</td>
</tr>
<tr>
<td></td>
<td>simulate-http-429-errors-percent 115, 190</td>
</tr>
<tr>
<td></td>
<td>simulate-http-500-errors 115, 190</td>
</tr>
<tr>
<td></td>
<td>simulate-http-500-errors-percent 115, 190</td>
</tr>
<tr>
<td></td>
<td>simulate-http-502-errors 190</td>
</tr>
<tr>
<td></td>
<td>simulate-http-502-errors-percent 190</td>
</tr>
<tr>
<td></td>
<td>simulate-http-protocol-errors 115, 190</td>
</tr>
<tr>
<td></td>
<td>simulate-http-protocol-errors-percent 115, 190</td>
</tr>
<tr>
<td></td>
<td>simulate-http-timeout-errors 115, 190</td>
</tr>
<tr>
<td></td>
<td>simulate-http-timeout-errors-percent 115, 190</td>
</tr>
<tr>
<td>Sin 6</td>
<td>Slack 184</td>
</tr>
<tr>
<td>site 130</td>
<td>Snelstart 184</td>
</tr>
<tr>
<td>Skip_ 6</td>
<td>smtp 130</td>
</tr>
<tr>
<td>slack 130</td>
<td>smtp-enable-ssl 154</td>
</tr>
<tr>
<td>slot-based-rate-limit-length-ms 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 206, 209</td>
<td>smtp-host-address 154</td>
</tr>
<tr>
<td>slot-based-rate-limit-slots 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 206, 209</td>
<td>smtp-host-port-number 154</td>
</tr>
<tr>
<td>Smalldatetime 6</td>
<td>smtp-minimum-deliver-duration-ms 154</td>
</tr>
<tr>
<td>Smallint 6</td>
<td>smtp-password 154</td>
</tr>
<tr>
<td>Smallmoney 6</td>
<td>smtp-send-timeout-ms 154</td>
</tr>
<tr>
<td>Smallserial 6</td>
<td>smtp-user-name 154</td>
</tr>
<tr>
<td>SMTP 4</td>
<td>Snelstart 184</td>
</tr>
<tr>
<td>scopes 190</td>
<td>socket-keep-alive 130</td>
</tr>
<tr>
<td>Second 6</td>
<td>socket-poll-interval-sec 130</td>
</tr>
<tr>
<td>Select 6</td>
<td>SortingOrder 211</td>
</tr>
<tr>
<td>Serial 6</td>
<td>Soundex 6</td>
</tr>
<tr>
<td>server 140</td>
<td>special-connection-type 130</td>
</tr>
<tr>
<td>Service provider 4</td>
<td>SQL 3</td>
</tr>
<tr>
<td>sessionid 2</td>
<td>SqlServer 185</td>
</tr>
<tr>
<td>Set 6</td>
<td>SqlTrace 211</td>
</tr>
<tr>
<td>Settings 211</td>
<td>settings.xml 5, 211</td>
</tr>
<tr>
<td>Settings.xml 5, 211</td>
<td>Settings.xsd 211</td>
</tr>
<tr>
<td>Settings.xsd 211</td>
<td>severa 201</td>
</tr>
<tr>
<td>severa 201</td>
<td>sf 181</td>
</tr>
<tr>
<td>sf 181</td>
<td>stftp 184</td>
</tr>
</tbody>
</table>
Sqrt 6
ssl-protocols 130
StackExchange 186
StackOverflowException 212
standardize-identifiers-casing 96, 103, 108, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 144, 152, 154, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 190, 201, 203, 205, 208, 209
Starred 211
Startup check 1
State 6
Stddev 5, 6
Substr 6
Sum 6
SwiftMt940Rabo 189
Sys_context 6
Sysdate 6
Sysdatetime 6
Sysdateutc 6
Syscontext 6
Sysdateutcn 6

- T -

Table 6
Tables 6
Tan 6
teamleader 190
teamviewer 199
templates 138
teradata 200
TestDuration 211
TestURL 211
Text 6
Then 6
Time 6
timeout-connection-sec 130
timeout-data-connection-sec 130
timeout-data-read-sec 130
timeout-read-sec 130
Timestamp 6
Timestamptz 6
Timetz 6
Tinyblob 6
Tinyint 6
Tinytext 6
To 6
To_binary 6
To_char 6
To_date 6
To_guid 6
To_hex 6
To_number 6
Token 6
Token 6
Trace 212
trace-native-calls 96, 111, 113, 114, 115, 124, 125, 127, 130, 140, 142, 152, 156, 158, 160, 168, 170, 172, 174, 175, 177, 178, 180, 181, 185, 186, 189, 201, 203, 205, 208, 209
Transaction 6
Translate 6, 215
Translate_resources 6
translations 146
Trickle 6
Trim 6
True 6
Trunc 6

- U -

ubl20 200
ubl21 201
UInt16 6
UInt32 6
UInt64 6
Uncompress 6
Union 6
Uniqueidentifier 6
Unistr 6
Unix_timestamp 6
Unknown 6
Unzip 6
Update 6
update-allowed 115
update-number-table-partition-versions-per-group 103
Upgrade 6
upgrade-force-execute 103
upgrade-force-repository-version-start 103
upgrade-force-specials 103
Upper 6
URL 211
Urldecode 6
Urlencode 6
Usage 1
Use 4, 6
use-batch-insert 115, 190
use-binary 130
use-http-disk-cache 115
<table>
<thead>
<tr>
<th>Index</th>
<th>226</th>
</tr>
</thead>
</table>

use-http-memory-cache 115
use-metadata-cache 115, 124, 152, 180, 201, 205, 208, 209
use-metadata-memory-cache 160
use-passive 130
User 6
User interface language 2
use-result-cache 115, 124, 152, 180, 201, 205, 209
use-result-memory-cache 160
UserLogonCodeHint 211
UserLogonCodeLabel 211
UserLogonCodeMode 211
use-ssl 130
user-test-environment 152
Utc 6
Utc_date 6
Uuid 6

- V -

Values 6
Varbinary 6
Varchar 6
Varchar2 6
Version 6, 211
Versions 6
VersionUpdateDate 211
VersionUpdatedBy 211
VersionUpdatedOn 211
vies 201
View 6
virustotal 201
VismaSevera 201

- W -

Web Service 211
WebService 203
When 6

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